

## **PREFACE**

The Project Medical Bill and Assembly Question Application being carried out at Tata Consultancy Services Ltd, works for converting the Document Oriented job of Office into completely Computerized Automatic System and provides Document management, Workflow, Collaboration environment and Knowledge Management in an integrated fashion and delivers as Electronic Workplace that will result in productivity improvement in an Organization. It reports automation for Office processes for numerous word based letters.

This project includes various module based application which are deployed according to the requirements. The main concentration is kept on the Clients request, as per which the applications are made and modified.

The Medical Bill and Assembly Question Application provide affirmative ways to accomplish various functions at time with high rate of productivity and accuracy. Thus with the help of this system the Office can make much prolific progress.

-Darshan Karia (042126)

-Ketan Kotak (042130)

## 1. INTRODUCTION

**Title** : Medical Bill and Assembly Question Application  
(MBAQA)

### 1.1 PROJECT SUMMARY

#### **MBAQA (Medical Bill and Assembly Question Application) – Streamlining Documentation for knowledge – led governance**

Being a repository of information, the Secretariat plays a crucial role in the governance of the state. Decision-making and policy — Formulation processes within the Secretariat involve receipt, dispatch and maintenance of a huge volume of correspondence. For improvised governance, it is hence critical to have an efficient document control & monitoring mechanism in place.

MBAQA (Medical Bill and Assembly Question Application) is a perfect fit solution which addresses these concerns and aims to standardize and streamline document management by leveraging the established networks in the Secretariat. It helps the Secretariat to monitor and process all correspondence and enable it to move towards a ‘less paper’ offices regime and knowledge-led governance.

## **1.2 PURPOSE**

The project is an project, an IT solution to all the fundamental functionalities. The project aims at the following matters:

1. Automation of routine tasks.
2. Assistance in decision-making.
3. Prioritization of tasks.
4. Building a knowledge management system for acts, rules & precedent cases.
5. Interdepartmental interface.
6. File Management – Creating and tracking file system.
7. Effective monitoring system for higher officials

All the above-mentioned matters are to be incorporated in the application along with some additional requirements.

## **1.3 SCOPE**

Medical Bill and Assembly Question Application (MBAQA) provides Document management, Workflow, Collaboration environment and Knowledge Management in an integrated fashion and delivers as Electronic Workplace that will result in productivity improvement at client side and within the boundaries of client.

## **1.4 OBJECTIVE**

1. Consolidate requests from various departments
2. Create an Office Automation System
3. Enhance Productivity
4. Enable Prioritization of work.
5. Use IT as an enabler to help in daily work
6. Design an efficient workplace
7. Enable policy based Processing
8. Access Controls at all levels.
9. Report generation.
10. Efficient & Transparent administration.

## 1.5 TECHNOLOGY AND LITERATURE REVIEW

To build complete enterprise level applications, developers need more than Java. Oracle believes strongly, and has invested heavily, in the combination of Java, SQL, and XML. Java is used for programming the business and presentation logic, SQL for interacting with the database, and XML for passing information between loosely coupled applications.

As MVC model 2 Architecture was used, JDeveloper helps developers build an enterprise level application using Java, XML, HTML, SQL, and PL/SQL and provides various code editors and visual tools for each of these languages.

To maximize developer productivity, JDeveloper provides a comprehensive set of integrated tools that support the complete development lifecycle, from source control, modeling, and coding through debugging, testing, profiling, and deploying. JDeveloper simplifies J2EE development by providing wizards, editors, visual design tools, and deployment tools to create high quality, standard J2EE components including applets, JavaBeans, Java Server Pages (JSP), servlets, and Enterprise JavaBeans (EJB).

Oracle9i JDeveloper fully leverages the J2EE platform and supports the latest standards, including EJB 1.1, JSP 1.1 and Servlets 2.2. Developers can choose from wizards, visual editors and code editors to build J2EE applications and to package them as standard JAR, WAR, and EAR archives that can be deployed on any J2EE server.

### **PL/SQL Developer**

PL/SQL Developer is an Integrated Development Environment that is specifically targeted at the development of stored program units for Oracle Databases. Over time more and more business logic and application logic has moved into the Oracle Server, so that PL/SQL programming has become a significant part of the total development process. PL/SQL Developer focuses on ease of use, code quality and productivity, key advantages during Oracle application development.

**Edit Plus**

Edit plus is an open source HTML text editor that has the powerful functionalities of known desktop editors like Word. Some of the important functionalities are:

- Font formatting: type, size, color, style, bold, italic, etc.
- Text formatting: alignment, indentation, bullets list, etc.
- Cut, Paste and Past as Plain Text, Undo and Redo.
- Compatible with Internet Explorer 5+.

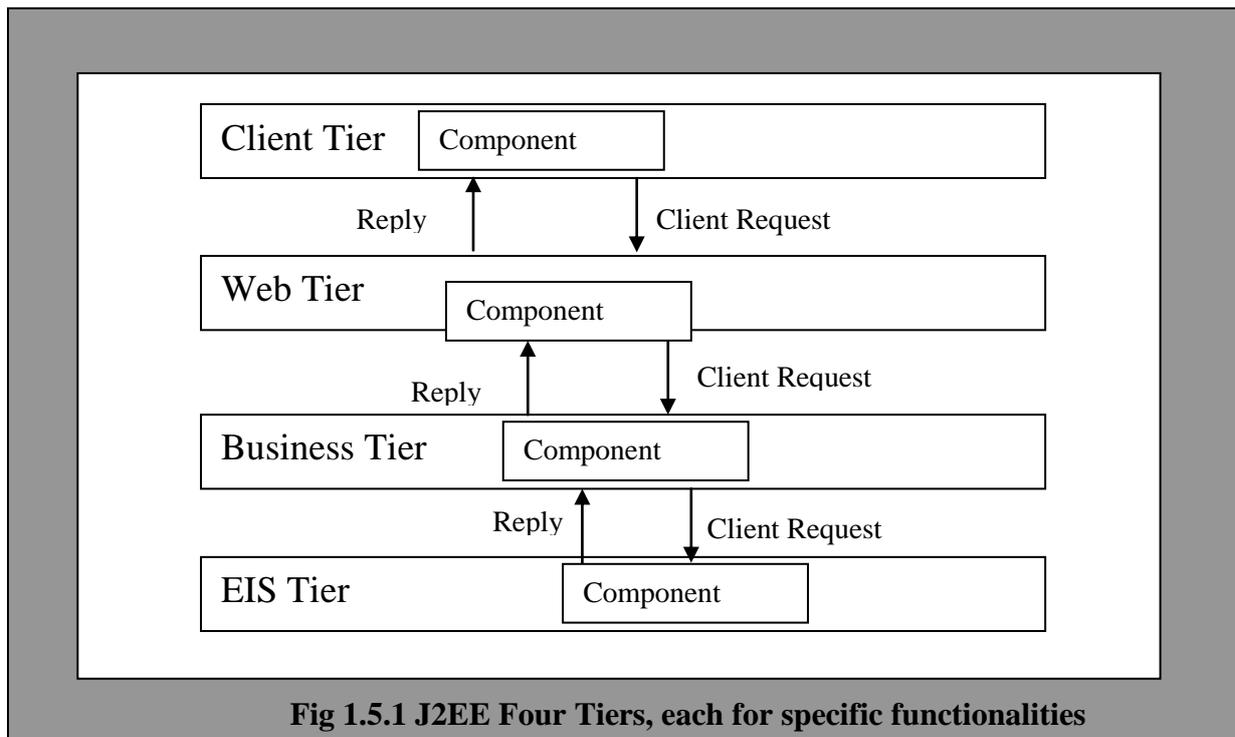
 **Why J2EE in MBAQA?**

As J2EE is a combination of several technologies that offer cohesiveness to bond together server side systems and services and produce an industrial-strength scalable environment within which web-centric applications can thrive.

J2EE simplifies the creation of an enterprise-wide application, because functionality is encapsulate in components of J2EE. This enables designers and programmers to organize the application into functionality that is distributed across the server-side components built using J2EE. J2EE is a versatile technology because application components built using J2EE are able to communicate with each other behind the scenes using standard communication methods such as HTTP, RMI, HTML, and XML. Moreover J2EE contains all the interfaces and libraries that is required for handling complex programs of multithreading and synchronization.

Again MBAQA is a web-centric enterprise level application, so all the above mentioned points of J2EE makes J2EE the most suitable technology to be opted for this project.

J2EE is a Multi-Tier Architecture (to be precise four tier architecture). These consists of Client Tier, Web Tier, Business Tier, Enterprise Information Tier



**Fig 1.5.1 J2EE Four Tiers, each for specific functionalities**

J2EE applications are made up of components. A *J2EE component* is a self-contained functional software unit that is assembled into a J2EE application with its related classes and files and that communicates with other components. The J2EE specification defines the following J2EE components:

- The Component technologies – to hold the business logic. (JSP, Servlets and EJB)
- The Service technologies – to provide supported services to application components (JDBC, JTA, JNDI)
- The Communication technologies – transparent to application programmer, provide the mechanism for communication among different parts of the application (JavaMail, RMI-IIOP)

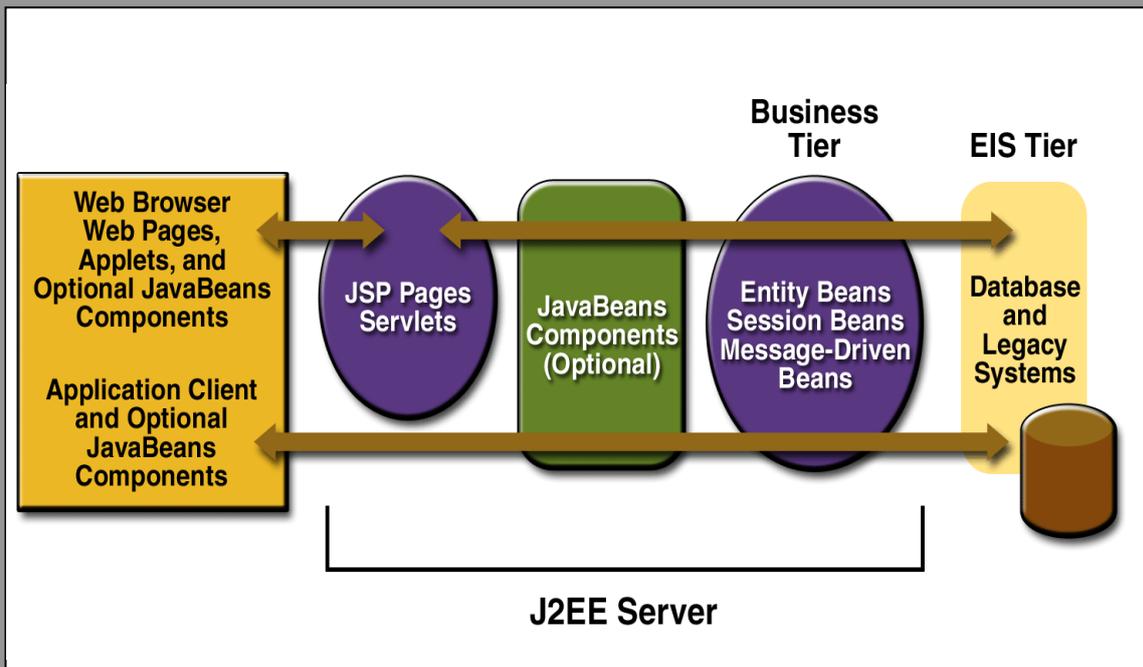
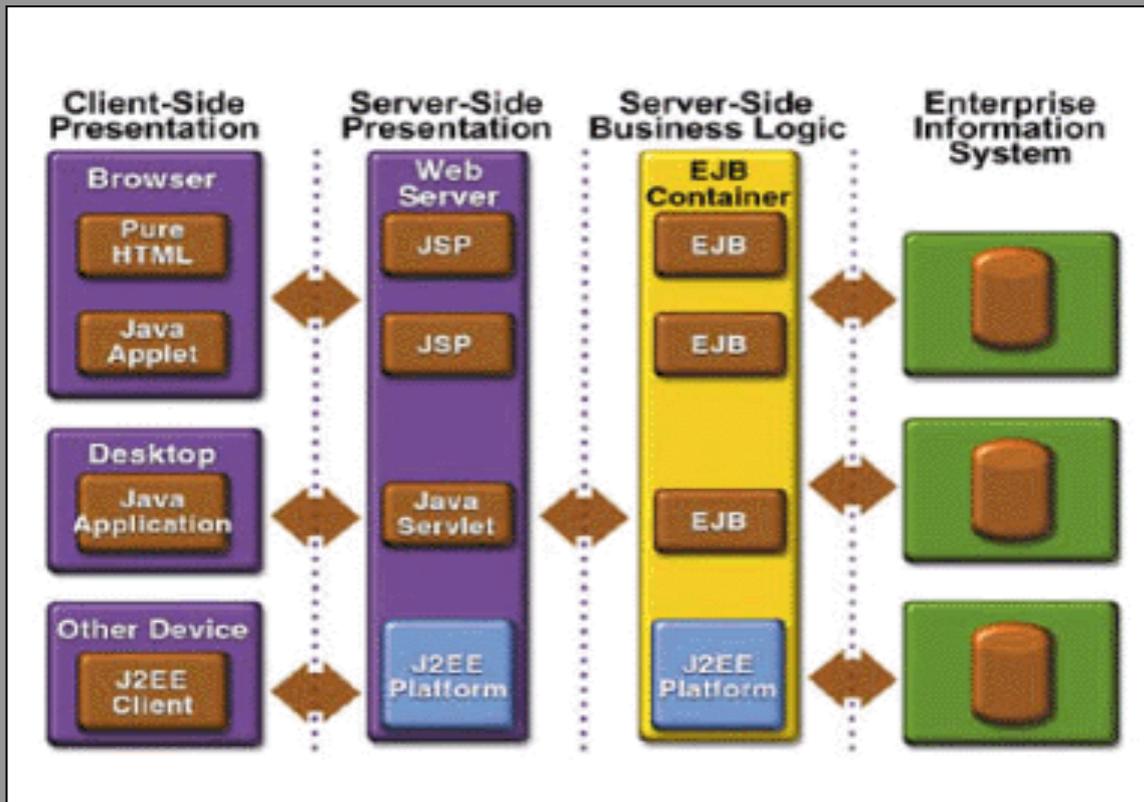


Fig 1.5.2 J2EE Technologies

The J2EE platform uses a multi-tiered distributed application model. Application logic is divided into components according to function, and the various application components that make up a J2EE application are installed on different machines depending on the tier in the multi-tiered J2EE environment to which the application component belongs.

- Client-tier components run on the client machine.
- Web-tier components run on the J2EE server.
- Business-tier components run on the J2EE server.
- Enterprise information system (EIS)-tier software runs on the EIS server.



**Fig 1.5.3 J2EE Multi-tier Distributed Application Model**

The J2EE API's used in the MBAQA project are listed below:

- Servlets
- Java Server Pages (JSPs)
- Enterprise Java Beans (EJB)

There are three types of enterprise beans:

- Session beans
  - State full
  - Stateless
- Entity beans
  - Bean-managed Persistence (BMP)
  - Container-managed Persistence (CMP)
  - Enterprise JavaBeans Query Language
- Message-driven beans

**Oracle 10g**

Oracle is the most widely used database in the world. It runs on virtually every kind of computer. It functions virtually identically on all these machines, which make the Oracle skills and knowledge very portable. Oracle is the most stable Relational Database Management System.

MBAQA uses Oracle10g DBMS as its back end. The ‘g’ in Oracle 10g stands for “Grid Computing”. Oracle Corporation marks Oracle10g as "the database for Grid computing". The major factor in choosing oracle 10g as a backend was that MBAQA heavily made use of XML files and Oracle 10g handled it better than Oracle 9i.

The Oracle Server provides efficient and effective solutions with the following features:

<b>Client/Server (distributed processing) environments</b>	To take full advantage of a given computer system or network, Oracle allows processing to be split between the database server and the client application programs.
<b>Large databases and spaces management</b>	Oracle supports the largest of databases, potentially 100 terabytes in size. To make efficient use of expensive hardware devices, it allows full control of space usage.
<b>Many concurrent database users</b>	Oracle supports large numbers of concurrent users executing a variety of database applications operating on the same data. It minimizes data contention and guarantees data concurrency.
<b>High transaction processing performance</b>	Oracle maintains the preceding features with a high degree of overall system performance.
<b>High availability</b>	Oracle can work 24x7 with no down time for quite a large amount of time.
<b>Controlled availability</b>	Oracle can selectively control the availability of data, at the database level and sub-database level. For example, an administrator can disallow use of a specific application so that the application’s data can be reloaded, without affecting other applications.

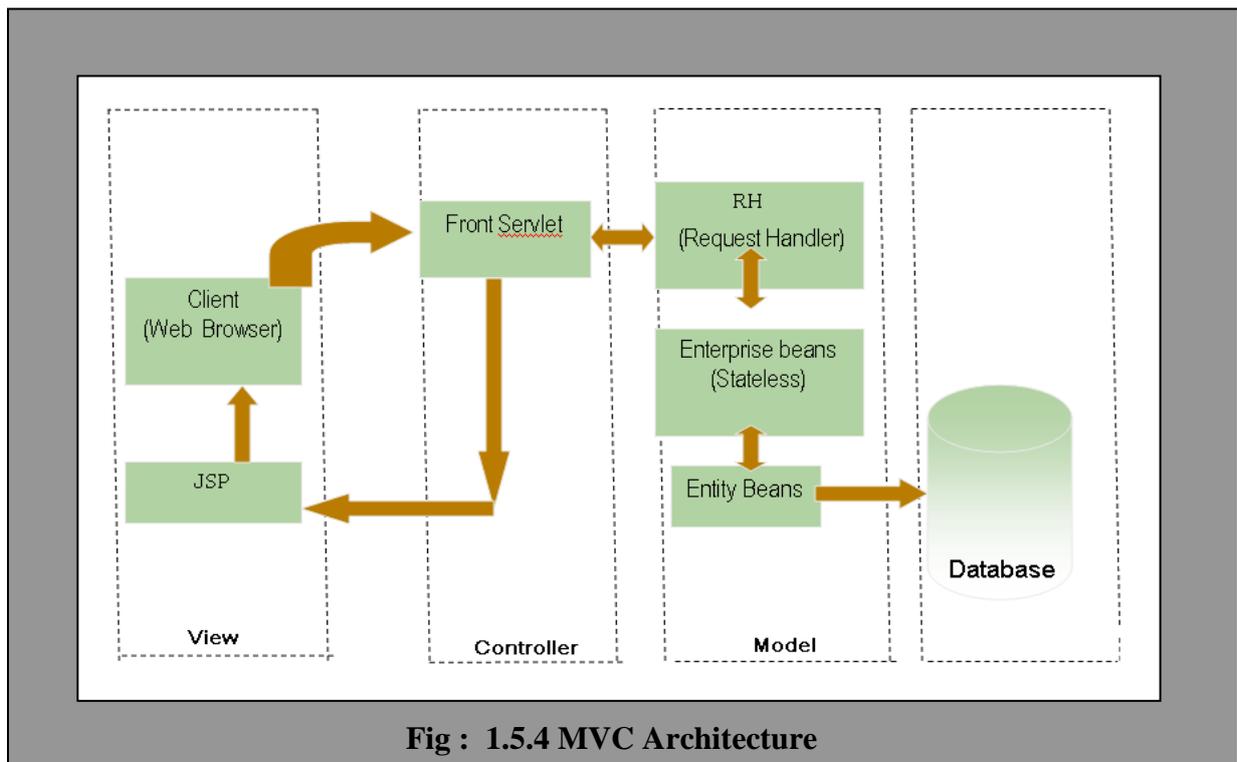
<p><b>Database enforced integrity</b></p>	<p>Oracle enforces data integrity, “business rules” that dictate the standards for acceptable data. As a result, the costs of coding and managing checks in many database applications are eliminated.</p>
<p><b>Distributed Systems</b></p>	<p>For networked, distributed environments, Oracle combines the data physically located on different computers into one logical database that can be accessed by all network users. Distributed systems have the same degree of user transparency and data consistency as non-distributed systems, yet receive the advantages of local database management. Oracle also offers the heterogeneous option that allows users to access data on some non-Oracle databases transparently.</p>
<p><b>Portability</b></p>	<p>Oracle software is ported to work under different operating systems. Applications developed for Oracle can be ported to any operating system with little or no modification.</p>
<p><b>Compatibility</b></p>	<p>Oracle software is compatible with industry standards, including most industry standard operating systems. Applications developed for Oracle can be used on virtually any system with little or no modification.</p>
<p><b>Connection ability</b></p>	<p>Oracle software allows different types of computers and operating systems to share information across network.</p>
<p><b>Replicated environment</b></p>	<p>Oracle software lets you replicate groups of tables and their supporting objects to multiple sites. Oracle supports replication of both data-and schema-level changes to these sites. Oracle’s flexible replication technology supports basic primary site replication as well as advanced dynamic and shared-ownership models.</p>

**Features of Oracle Server**

☑ **Coding Architecture**

MVC architecture calls for a visual application to be broken up into three separate parts:

- A model that represents the data for the application.
- The view that is the visual representation of that data.
- A controller that takes user input on the view and translates that to changes in the model.



**Fig : 1.5.4 MVC Architecture**

The solution architecture has three layers:

**1) Presentation layer:**

This layer enables navigation, manipulation and translation onto the users' desktops.

**2) Application layer:**

This layer consists of an application server and a web server, both handled by the J2EE application, and a mail server for messaging and workflow in order to provide a collaborative environment.

**3) Data layer:**

This layer consists of structured data in the Oracle RDBMS, and unstructured documents and textual information in J2EE application.

The MVC architecture has the following benefits:

**1) Multiple views using the same model:**

The separation of model and view allows multiple views to use the same enterprise model. Consequently, an enterprise application's model components are easier to implement, test, and maintain, since all access to the model goes through these components.

**2) Easier support for new types of clients:**

To support a new type of client, you simply write a view and controller for it and wire them into the existing enterprise model.

**3) Clarity of design:**

By glancing at the model's public method list, it should be easy to understand how to control the model's behavior. When designing the application, this trait makes the entire program easier to implement and maintain.

**4) Efficient modularity:**

Modularity of the design allows any of the components to be swapped in and out as the user or programmer desires - even the model! Changes to one aspect of the program aren't coupled to other aspects, eliminating many nasty debugging situations. Also, development of the various components can progress in parallel, once the interface between the components is clearly defined.

**5) Ease of growth:**

Controllers and views can grow as the model grows; and older versions of the views and controllers can still be used as long as a common interface is maintained.

**6) Distributable:**

With a couple of proxies one can easily distribute any MVC application by only altering the startup method of the application.

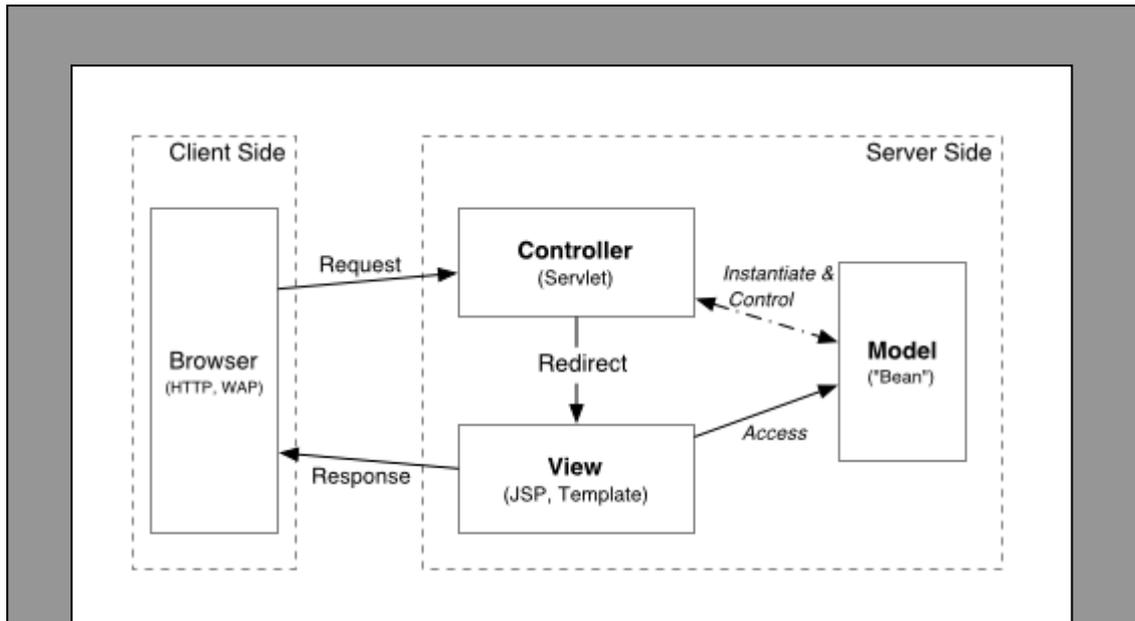


Fig : 1.5.5 MVC2 Architecture

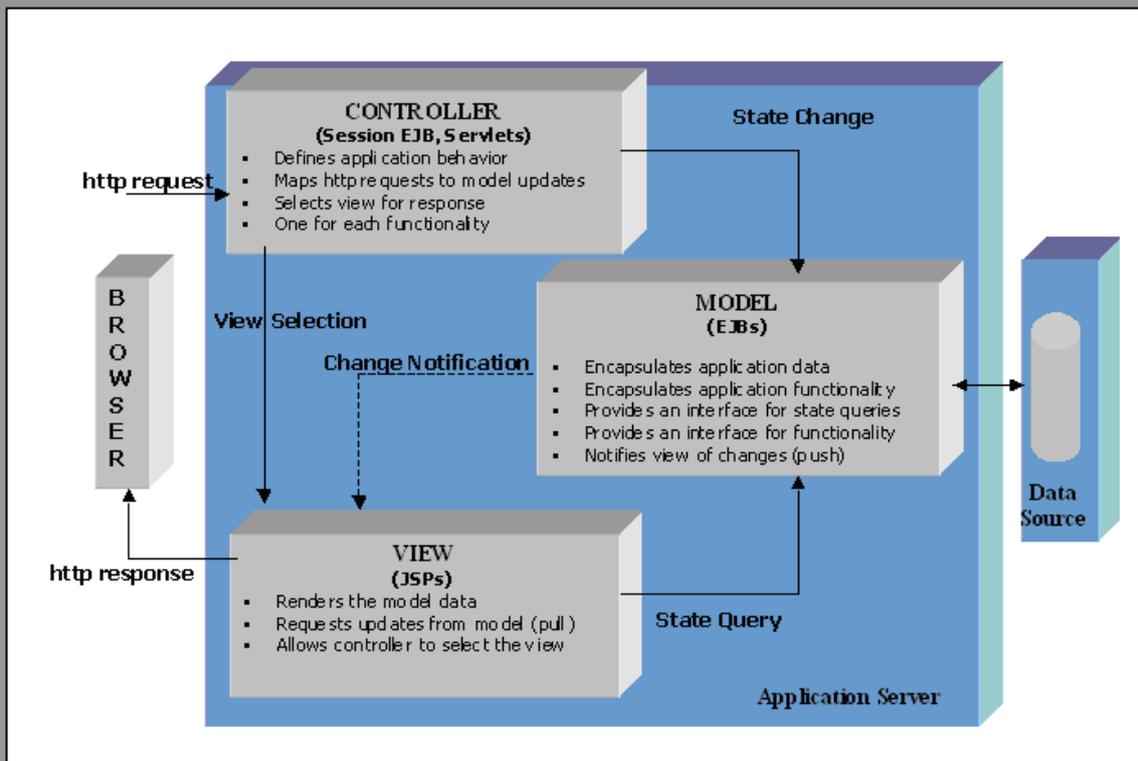


Fig : 1.5.6 MVC2 Architecture

**MBAQA uses MVC 2 Architecture.**

JSP pages in a Model 1 application that use scripting elements, custom tags, or JavaScript to forward requests should be re-factored to Model 2.

Model 1 architecture is best when the page navigation is simple and fixed, and when a simple directory structure can represent the structure of the pages in the application. Such applications usually embed the page flow information in the links between the pages. The presence of forward in a JSP page implies that logic embedded in the page is making a decision about the next page to display.

Over time, as the application grows and changes, page flow logic accumulates. The application becomes difficult to maintain because the page flow logic is distributed across multiple pages. The best time to switch from Model 1 to Model 2 is before this maintenance problem arises. This is why it's usually best to choose Model 2 from the outset, basing the application on an existing Web controller framework that best meets application requirements. Model 1 remains a viable option for simple, static applications.

## **2. PROJECT MANAGEMENT**



## 2. PROJECT MANAGEMENT

### 2.1 PROJECT PLANNING AND SCHEDULING

#### 2.1.1 PROJECT DEVELOPMENT APPROACH

A **software development model** is a simplified description /abstract representation of a software process which is presented from a particular perspective. A development model for software engineering is chosen based on the nature of the project and application, the methods and tools to be used, and the controls and deliverables that are required.

All software development can be characterized as a problem solving loop in which four distinct stages are encountered:

- Status quo
- Problem definition
- Technical development
- Solution integration

1) **Status Quo** represents the current state of affairs.

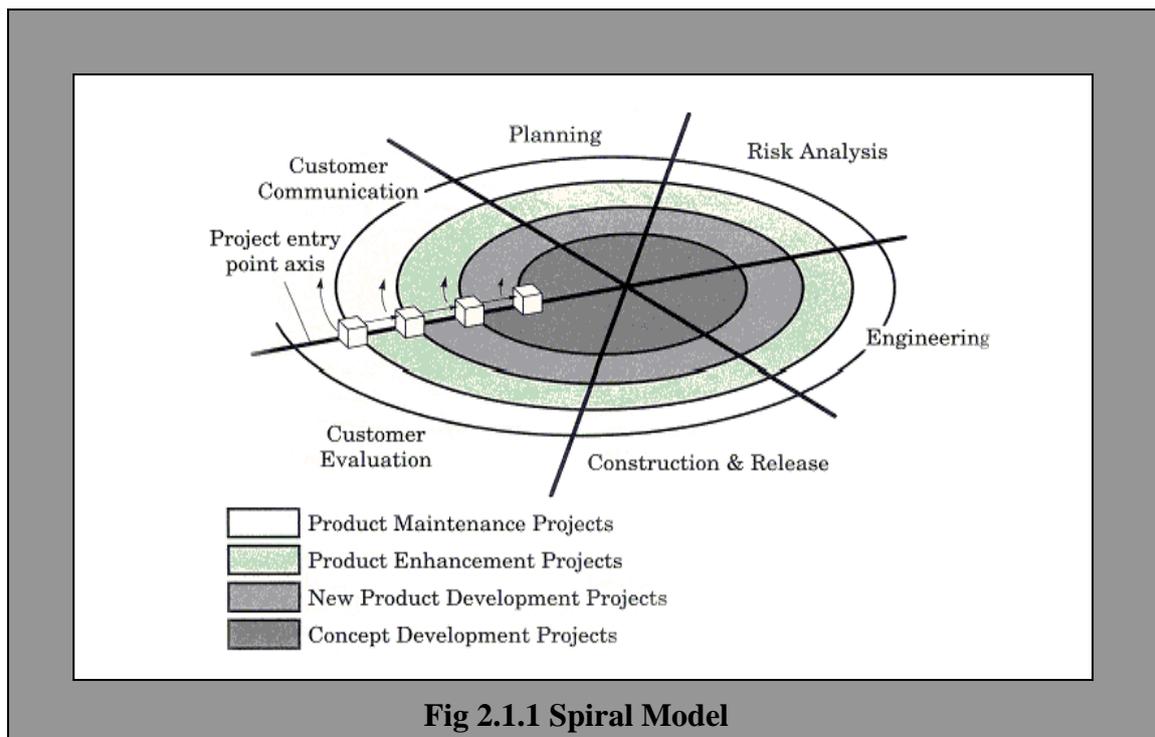
2) **Problem Definition** identifies the specific problem to be solved.

3) **Technical Development** solves the problem through the application of some technology.

4) **Solution Integration** delivers the results (e.g. documents, programs, data, and new product) to those who requested the solution in the first place.

There are many software development models. MBAQA follows the **Spiral Model**.

*Fig 2.1.1 Spiral Model*



**Fig 2.1.1 Spiral Model**

### **What is Spiral Model?**

The spiral model of software development and evolution represents a risk-driven approach to software process analysis and structuring. This approach incorporates elements of specification-driven, prototype-driven process methods, together with the classic software life cycle. It does so by representing iterative development cycles as an expanding spiral, with inner cycles denoting early system analysis and prototyping, and outer cycles denoting the classic software life cycle. Every iterative cycle of the Spiral Model consists of the following:

- 1) **Customer communication**
- 2) **Planning**
- 3) **Risk analysis**
- 4) **Engineering**
- 5) **Construction and release**
- 6) **Customer evaluation**

Each of these regions itself include several subtasks depending on the scope and complexity of the application under development. The evolutionary process starts from the core of the spiral from the customer communication region and revolves in a clockwise direction as if it was coming out of the spiral.

**Why Spiral Model?**

**Spiral Process Model** is considered as one of the most popular system-process flow model. The Spiral model contains the repeated execution of SDLC till the completion of the project. This model is basically used for the giant-projects in which there are high risk factors.

**Advantages of Spiral Model:**

- ↳ The spiral model is a realistic approach to the development of large-scale software products because the software evolves as the process progresses. In addition, the developer and the client better understand and react to risks at each evolutionary level.
- ↳ The model uses prototyping as a risk reduction mechanism and allows for the development of prototypes at any stage of the evolutionary development.
- ↳ It maintains a systematic stepwise approach, like the classic life cycle model, but incorporates it into an iterative framework that more reflect the real world.
- ↳ If employed correctly, this model should reduce risks before they become problematic, as consideration of technical risks are considered at all stages.

**In brief, it**

- ↳ Focuses attention on reuse options.
- ↳ Focuses attention on early error elimination.
- ↳ Puts quality objectives up front.
- ↳ Integrates development and maintenance.
- ↳ Provides a framework for hardware/software development.

**Disadvantages of Spiral Model:**

- ↳ Contractual development often specifies process model and deliverables in advance.
- ↳ Requires risk assessment expertise.

### 2.1.2 PROJECT PLANNING

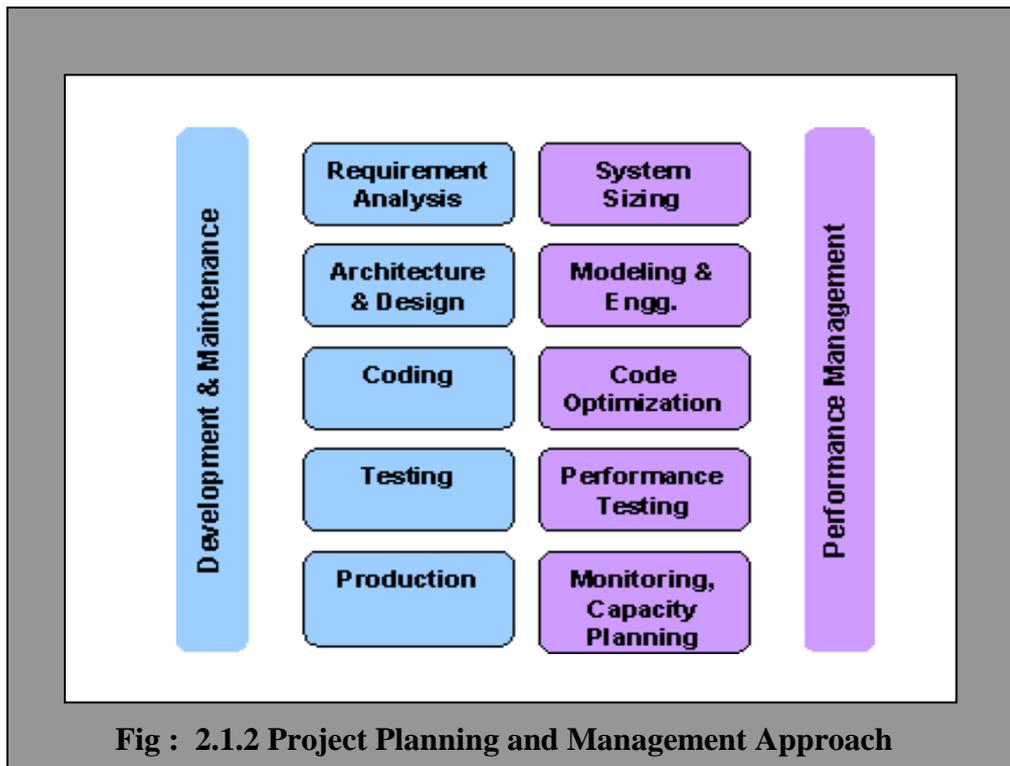
TCS has a very long-standing relationship at client side, having logged over 4,500 people. It has provided its expertise to various agencies all over the world, working with numerous hardware and software technologies, to improve its overall image and provide better services to its constituents. TCS will bring its vast domain expertise, knowledge of the best practices and lessons learnt in various implementations at client side to this project. For this specific requirement analysis, TCS consultants with the help of designated personnel from CLIENT would familiarize themselves with the overall structure of the office and its inter-linkages with other departments/systems. They will understand the broad working of the office and the other related departments, its functions, manpower employed, processes etc.

TCS consultants shall meet the representative personnel and document the detailed gaps between the current system and the proposed solution based on the understanding of the activities and processes, as they are currently being carried out in the office.

The gaps would be documented and analyzed, and if required and possible reengineering of process in concurrence with CLIENT to leverage the benefits of the product would be suggested.

Other areas, which would be considered during the planning and analysis, would be:

- ↳ Ensure that the information flow is process driven.
- ↳ Reduce the manual efforts to the maximum extent for all activities.
- ↳ Ensure on-line validation and feedback of data.
- ↳ Act as an effective tool in decision support.
- ↳ Provide audit control check points.



**Internal Training**

TCS will conduct necessary training for the TCS’ project team to carry out the proposed project. This will be in addition to the regular extensive training program that is conducted by TCS for its staff.

❖ **MILESTONES AND DELIVERABLES**

Milestones are identified in order to complete the entire project in the time duration. Milestones are identified for every module of Medical Bill and Assembly Question Application. It is targeted to complete department specific module namely “Appointment of Representatives / Non-Official Members in co-operative societies” in the last week of May.

<b>PHASE</b>	<b>DELIVERABLES</b>	<b>PURPOSE</b>
<b>System Requirement and Analysis</b>	<ul style="list-style-type: none"> <li>• Requirement Gathering and analysis.</li> <li>• Functional Specifications</li> <li>• Non Functional Specifications</li> </ul>	It gives exact understanding of the user’s requirements.
<b>System Design</b>	<ul style="list-style-type: none"> <li>• E-R Diagram</li> <li>• Database Design</li> <li>• Class diagram</li> <li>• Sequence Diagram</li> <li>• Use Case Diagram</li> <li>• Form layouts</li> </ul>	It gives the logical structure that describes the system.
<b>Implementation and Testing</b>	The output obtained for the required functionality after implementing and doing various types of testing	It gives the required module

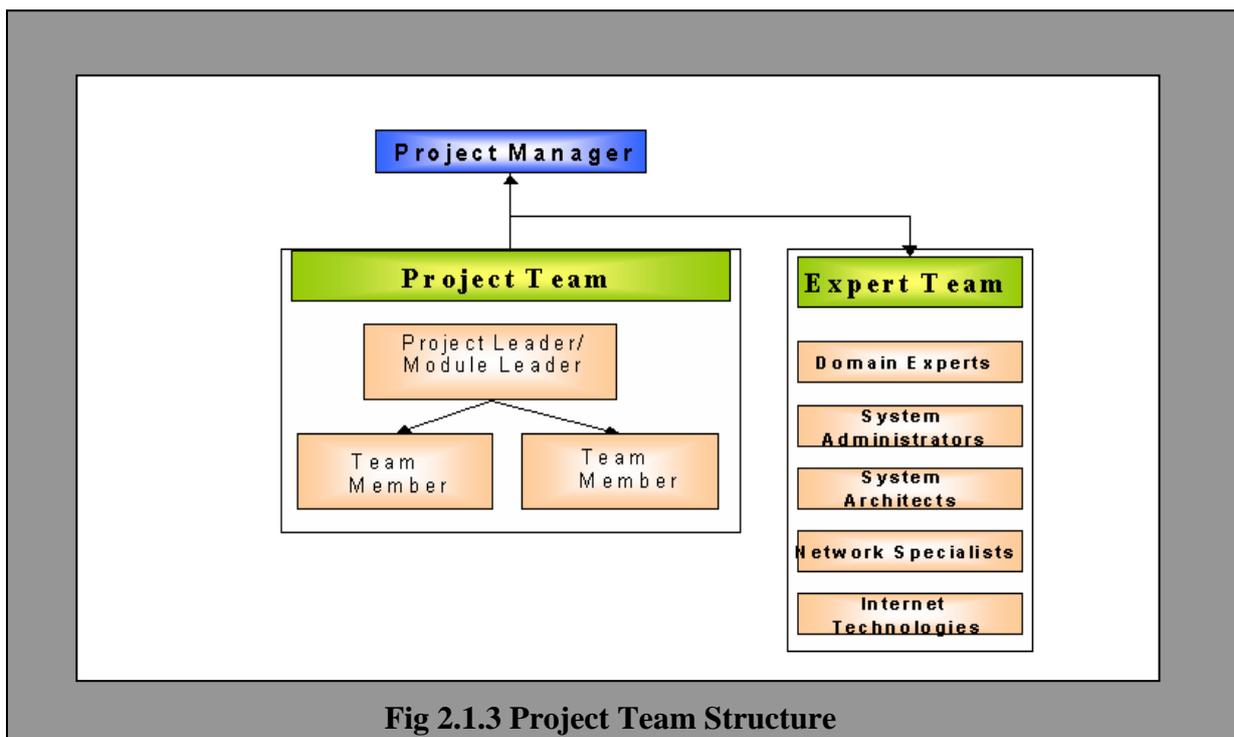
❖ **ROLES AND RESPONSIBILITIES**

TCS proposes the following Project Management structure for the successful development/customization, implementation and maintenance of the MBAQA system.

The following is the recommended Project Management structure for the execution of the project.

**Project Team Structure**

TCS proposes the following team structure for the successful implementation of the project. The TCS team will be headed by a Project Manager and will be supported by Project Leaders/Module Leaders and Team Members. TCS proposes a multi-disciplinary team for the project. TCS would draw in knowledge from its pool of resources with expertise ranging from business domain to the systems administration, systems architect, and Networking and Internet technology. These experts will act as consultants to the TCS MBAQA project team. Other enabling groups within TCS such as Quality Assurance, Manpower Allocation Task Committee, Operations and Training have important role in the successful execution of the project.



**Fig 2.1.3 Project Team Structure**

○ Project Manager

The responsibilities of the Project Manager are:

- Overall management and functioning of the MBAQA project
- Project Planning
- Monitoring the progress & status of the project on a regular basis
- Managing the TCS-CLIENT project resources and resource allocation
- Managing the flow of work
- Co-ordinate with Project Manager (PM for MBAQA) of CLIENT for acceptance for various deliverables
- Co-ordinate with Project Manager (PM for MBAQA) of CLIENT for the approvals required at various stages of the project, including signing off of the gap analysis document, Acceptance of the product/solution etc.
- Participating in the meetings of PIC
- Change Management: Identifying and evaluating the changes to the scope and content of work during the project, which may impact the original budget and schedule.
- Reporting status on a Monthly basis to Project Manager (PM for MBAQA) of CLIENT and TCS Management.
- Ensuring the quality of the deliverables.

### ○ Project Leader

The responsibilities of the Project Leader are:

- Planning the application customization/development work in the MBAQA Project.
- Monitoring the day-to-day status of application development/customization activities in the MBAQA project.
- Planning and scheduling of enhancement to MBAQA system in co-ordination with Project Manager (CLIENT) and Project Manager (TCS).
- Liaison with various MBAQA functionality champions and Project Manager (PM for MBAQA) of CLIENT, for the gap analysis study.
- Ensuring the quality of the deliverables.
- Obtain clarifications necessary from the Project Management team regarding Functionality, GUI design etc over telephone (teleconference) or e-mail.
- Manage the flow of work within his/her team and allocate work to team members.
- Monitor the Quality of the deliverables being created.
- Change Management: Maintain a clarification document and ensure that any change or clarification is reflected in the design documents.
- Reporting status to the Project Manager on a weekly basis.

### ○ Module Leader

The responsibilities of a Module Leader include:

- Responsible for the work related to his/her group
- Allocate work to his module members
- Participate in Gap Analysis, Creation of SRS, Creation of the Design Document and provide required support to the project team in the development of the system
- Co-ordinate testing
- Perform Defect analysis and take corrective actions
- Ensure all the documentation with respect to the module is complete and up to date
- Change Management

- Report on a weekly basis the status of the module to the Project leader

- Team member

The responsibilities of a team member include:

- Carrying out the work allocated
- Performing IQA
- Report on a weekly basis to Module Leader

### **Status Reporting**

Module Leaders will report the progress of work in their respective modules to the Project Leader on a weekly basis. The Project Leaders will in turn submit weekly status reports to the concerned Project Managers. The status report will contain:

- ▲ Activities completed since last report
- ▲ Activities planned until the next report
- ▲ Progress against plan
- ▲ QA status
- ▲ Deliverables to CLIENT since last report
- ▲ Deliverables due to CLIENT in the next reporting period
- ▲ Outstanding issues

The Project Manager will monitor the progress of the activities against the plan and prepare a consolidated Monthly Report to Project Manager (PM) of CLIENT. This report will cover the project status and deviations against plan.

**Payoffs from the project:**

The MBAQA framework yields the following benefits:

- ▲ Enhanced productivity
- ▲ Reduced paperwork
- ▲ Easy access to information

Automatic prioritization of work

**Future:**

The implementation of the framework in other regional office will yield the following benefits:

- ▲ Knowledge-led governance
- ▲ Aid in policy formulation
- ▲ Consistency of applications across all levels
- ▲ Elimination of data redundancy
- ▲ Interoperability
- ▲ Easy flow of information

2.1.3 PROJECT SCHEDULING

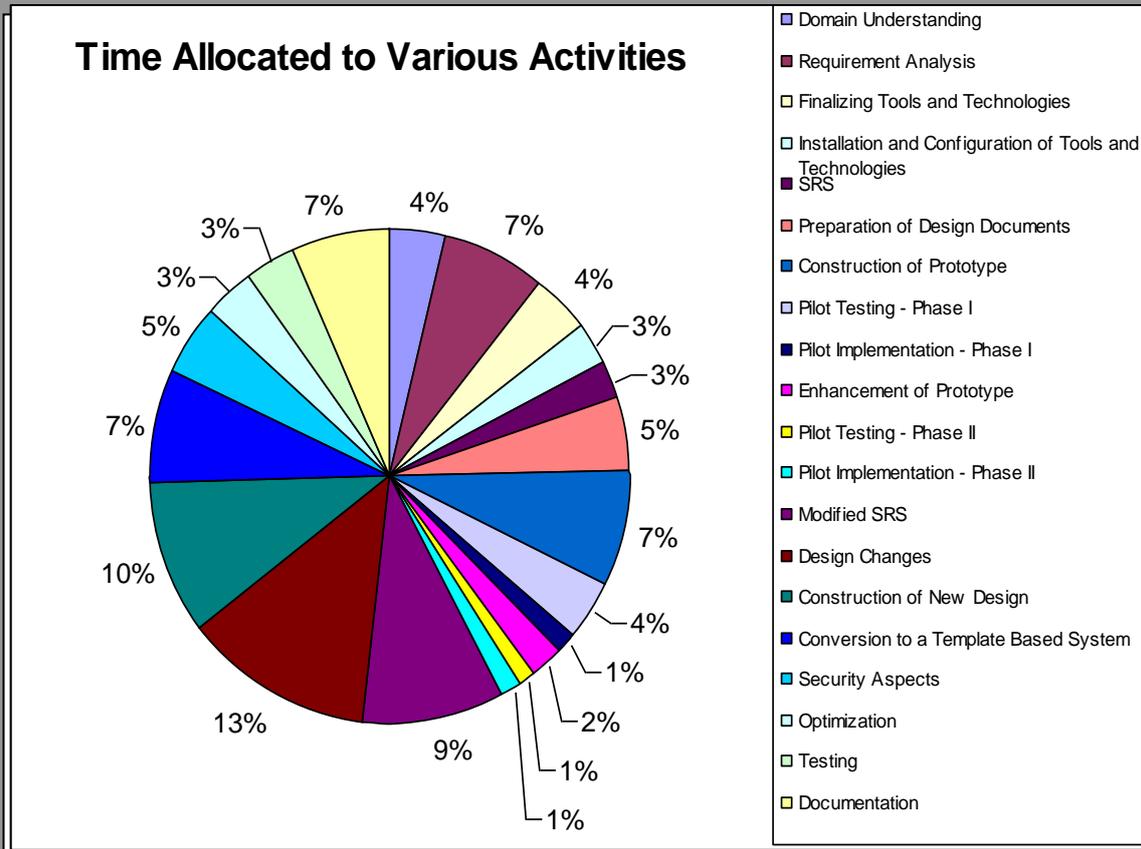


Fig 2.1.4 Time Allotted to Various Activities

**2.1.3.1 Time Allotted to Various Activities**

The tentative Project Schedule is as follows. A detailed project plan will be prepared in consultation with the Client at the beginning of the project and submitted for approval.

Phase/Activity	Jan-08	Jan-08	Feb-08	Feb-08	Mar-08	Mar-08	Apr-08	Apr-08
	1-15	16-31	1-15	15-29	1-15	16-31	1-15	16-30
Refreshed OOP Concepts								
Study of SRS & Coding Convention								
Study of Design Patterns, Architectures and MVC-2								
Study of Java Script and AJAX								
Project Definition								
Refinement of Project Definition								
Defining Project Scope								
Project Planning and Scheduling								
Startup - Team Building								
Startup - Site Preparation - Infrastructure Study and Gap Analysis for MBAQA Data Centre								
Requirement Analysis and Specification								
Finalizing SRS								

Implementation – Preparation								
Procurement								
Study/Customization/Development – Departmental Applications								
Implementation - Departmental Applications								
Finalizing View(JSP Pages)								
Finalizing Model (Bean) and Controller (Servlet)								
Testing								
Integrating all the modules								
Go Live – Departmental Applications								
Warranty Support								
Post Implementation Support								

**Fig 2.1.5 Project Schedule**

# Application Schedule

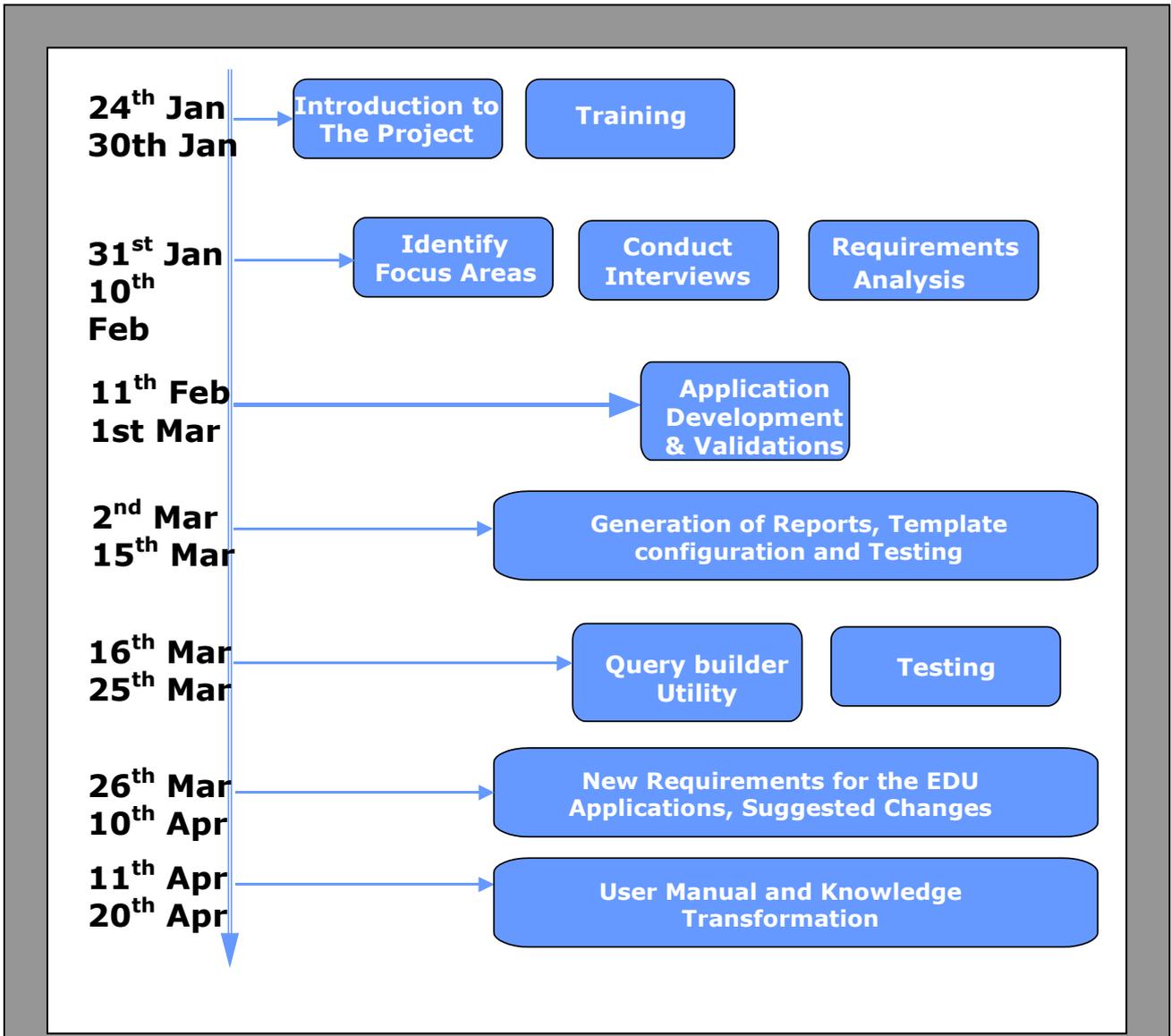


Fig : 2.1.6 Application Schedule

## 2.2 RISK MANAGEMENT

As part of the procedures documented in the TCS-QMS, risk management is identified as a critical component of software project management. The objectives of Risk Management as understood by TCS include

- Risk Identification
- Risk Contingency and Mitigation strategy
- Risk Monitoring and Tracking

### 2.2.1 Risk identification mechanism

Risks are identified right at the start of a project, in the planning phase. Each project that starts afresh identifies the risks at the startup phase and documents these in the project plan. The identification is done using several mechanisms, a selected few of which are listed below:

- A project startup meeting is convened as part of the initiation of a project where representatives of Support Groups, Quality Assurance Group, etc. meet with the Project team, during which the participants identify risks with respect to different aspects of the project
- The project teams use experience of past projects in the form of a Risk Repository, which is a storehouse of all risks anticipated and encountered by previous projects
- During the course of a project, periodic reviews (Project Management Reviews) are conducted by representatives of Senior Management in TCS to check the health of the project; potential risks are also highlighted at this stage
- Each identified risk is assigned
  - likeliness of the risk materializing and
  - impact in terms of the affect on Quality, Schedule, Cost, Performance, etc. of the project

**2.2.2 Risk mitigation Mechanism**

For each identified risk, a mitigation plan is defined, that is aimed at preventing a risk from materializing. The mitigation plan includes the preventive actions to be performed, responsibilities and tentative dates by when the plan will be implemented. At the time of identification, a contingency plan is also defined in order to counter a risk that eventually materializes. This plan is aimed at reducing the impact of the risk.

**2.2.3 Risk monitoring Mechanism**

Once a risk is identified, it is tracked or monitored during the course of the project in order to contain the potential damage due to that risk. This is done through status reports and periodic reviews of the project. The following table gives a brief overview of the risk monitoring mechanism followed by projects in TCS:

Risk Description	Month - 1	Month - 2	Month - 3	Month - 4
Risk1				
<b>Likeliness (1-4)</b>  [1 – Impossible, 2 – Probable, 3 – Most Probable, 4 – Frequent]				
<b>Impact (1-4)</b>  [1 – Negligible, 2 – Low, 3 – Medium, 4 – Critical or High]				

The Project teams monitor the risk exposure across different weeks and whenever the risk exposure of a particular risk appears to increase, the mitigation plan is initiated. The top three risks for every week are prioritized and acted upon until the risk exposure decreases. The top three risks along with their mitigation strategies are reported by the project to the Senior Management / Project Manager of Client/TCS in order to initiate action at the appropriate levels of management.

Once the exposure for a particular risk is reduced due to implementation of the mitigation plan, the risk is retained on the list of risks in order to monitor it for Future occurrence.

**2.2.4 Risks Anticipated and mitigation strategy:**

During the course of the implementation and maintenance of MBAQA, TCS has identified potential risks for the MBAQA project. Some of the samples with their mitigation strategy have been discussed below.

Risk Element	Risk Level	Impacted area	Description	Measure
Achieving User Buy in.	High	Cost, Schedule and Quality	There may be a marked attitude among the employees of the regional office that a paper less system as envisaged in MBAQA cannot be implemented.	Client has to ensure and encourage participation from all levels of end-users right from the initial phases

Risk Element	Risk Level	Impacted area	Description	Measure
Internal System Security	High	Operational	The users of the system should not give their user name and passwords to others in the department as this would lead to compromise of critical information	The Client need to come out with a clear Security policy and this has to be communicated to all the employees in the regional office. Employees of the Regional office should be made personally accountable for violation in this regard.
Data Migration	High	Cost and Schedule	Data Migration – Entry of existing data, i.e., backlog, into the new application or migrating data from an existing application	Data migration has to be initiated by the Client according to a clearly defined strategy. <i>For this purpose a Client needs to call for a separate tender</i>
Co-existence of manual and Automated systems	High	Cost, Schedule and Quality	Currently existing documents need to be processed in the way they are currently being processed i.e. manually. New documents which	Client will need to come with a date by which it will close all existing documents.

Risk Element	Risk Level	Impacted area	Description	Measure
			are opened after the MBAQA system has been introduced only, can be processed in the MBAQA system. Till such time that all old documents are cleared/closed both the manual and computerized systems will need to operate together. Initially this will lead to users working on two systems.	
Change in work profile for the department.	Medium	Cost and Schedule	In view of the shift in the regional office's nature of work from provider of service to a facilitator, there might be changes in the nature of work that is carried out by the various departments.	Any change in the requirements would have to be carried out under the change management procedures
Non standardization of work among the departments	Medium	Cost, Schedule and Quality	With our experience, it was observed that same nature of work is done differently in different department.	Client needs to ensure that same standard procedure is adopted for carrying out similar nature of work in all departments.
Process Re-	Medium	Cost,	Since there is some	Requirements

Risk Element	Risk Level	Impacted area	Description	Measure
engineering		Schedule and Quality	scope of Process Re-engineering there is a possibility of delay in approving a proposed change to the existing process	pertaining to these areas of work to be re-scheduled to a later point in time as appropriate in order to avoid rework

### 2.3 PROJECT DETAILS

The first step was to study the functioning of the regional office. It was then decided that any system that caters to the departments would have to consist of smaller modular applications. Depending on the uniqueness of these applications across departments, they were classified as follows:

Some of the applications identified include common and department specific application. The system was planned to cover both the central information system and the departmental information system, and to control the access privileges within a department or across two departments.

MBAQA is a project that brings out complete computerization of the regional office.

MBAQA consists of the following logical components:

### 2.3.1 Record Management

The Record Management will cover the following functions of MBAQA:

- Track life cycle of business objects.
- Creation of Logical Folders.
- Organization of the documents into these folders.
- Indexing of the Documents – by date, by subject, by sub subject codes.
- Association of Keywords to the files.
- Support for opening and Accessing – Scanned Files, Word Processing files, Bit maps, etc.
- Security Interface
- Version Control of documents
- Integration with Document Tracking functions of the Workflow package

### 2.3.2 Resource Management

Knowledge in the Regional office context consists of documents that are created and processed in the Workflow:

- Policies and Procedures such as Acts, Amendments to Acts, Ordinances, Rules, Guidelines, Manuals, Codes, etc.
- Structured Data such as Budget Allocations, Expenditures, Employee related information, Heads of Account, Statistical Data etc.
- Past Experience / Precedents such as files processed earlier on similar subjects, files with exceptions to rules in vogue, peculiar cases etc.
- Communication & Correspondence such as Letters, Memos, issued, etc.
- Actual Data gathered from subordinate functionaries such as data on progress of projects, expenses incurred, demographic data, performance of subordinate functionaries, etc.

Creation of Knowledge – Some of this knowledge gets created through the workflow processes and some of it is external to the regional office. The creation of the knowledge involves

#### Organization of Knowledge

- Creating a structure for knowledge management in terms of organizing the databases
- Indexing the Databases using attributes that would be used for knowledge retrieval

#### Storage of Knowledge

- Storing data in structured databases
- Storing unstructured information such as documents in a Resource Management System

Retrieval of Knowledge - There are two ways of retrieving knowledge from the Knowledge Bank

- Using structured queries on the databases to retrieve knowledge stored as numbers, figures, facts, percentages, trends, etc.
- Keyword or text search on the documents to retrieve knowledge in the form of documents, experience, wisdom, etc. The keywords represent the understanding of the persons dealing with the document and the context of the specific case.

### 2.3.3 Workflow Management

This sub-section describes the overview of the workflow at Regional Office.

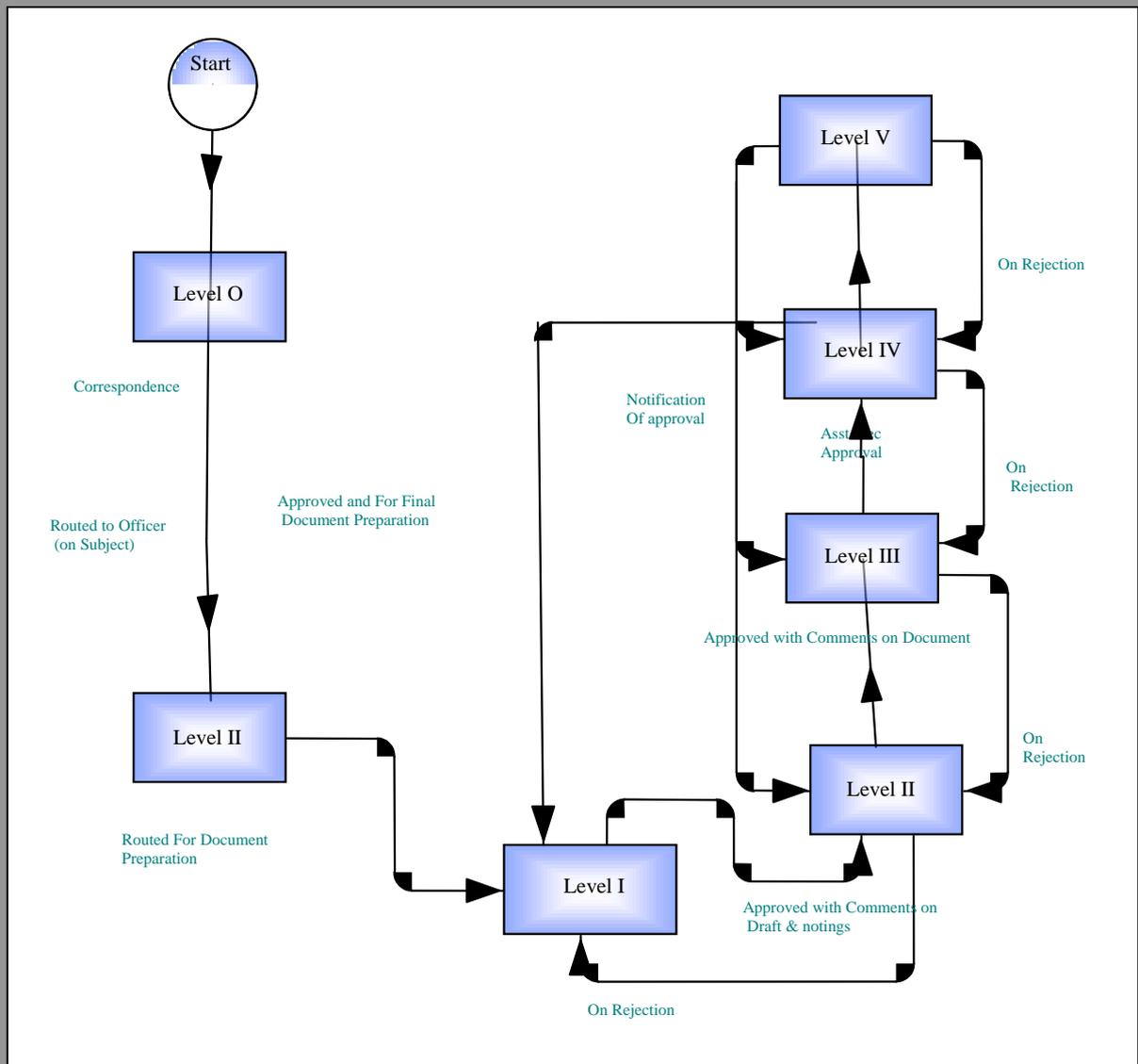
Typically in the workflow, the officer at the lowest level in a Department prepares a note/draft document based either or on a petition or a representation received from any entity to the regional office on an internal requirement within Regional office. The officer refers to a library that contains precedence, rules, acts, statutes, and policy/procedure – related documents to prepare the note.

The note is then sent to the officer at the next level who reviews it and provides his / her comments on the note and so on until the approving authority gives the approval on the note. The note could also be sent to other departments within the regional office for opinion on specific matters.

The requirements include adequate security built into the system so that any user can trace comments (or any other Comments) back to the user who made those comments.

Overall, the working procedure mainly consists of the movement of documents from one officer to another for remarks, suggestions, reviews and approvals. Hence, there is a need of a generic workflow process that takes into consideration the hierarchy of each department and also the hierarchy of the subject for which a document is being processed and based on the requirement of each subject a specific workflow process is designed and developed.

The pictorial representation enumerates the typical hierarchy in a department. The Secretary is the manager of the unit, which is the department, and starting from the next level, each person is the manager of the person at the immediate lower level.



**Fig 2.3.1 Typical Workflow at Client side**

In the Organization, the role of each user is defined and in addition to that the hierarchy of each subject is also assigned as per the job chart. Each subject has a disposing officer (He need not be the Manager of the unit).

Typically a Request is created at the bottom level and moves up the hierarchy and gets approved by the disposing officer predefined for that subject.

The expected benefits from the automated workflow would be:

- *Automatic Request movement*
- *Automatic Record keeping*
- *Communication online*
- *Tracking of files*
- *Electronic status monitoring of files*
- *Online movement of all the establishment related matters*

### **3. SYSTEM REQUIREMENT STUDY**



### 3. SYSTEM REQUIREMENT STUDY

After initial discussions with the HR head and preliminary investigation, the requirement study of the project was done. A pre-ROI was prepared which revealed the exact amount of efforts required in people-person months, the cost that would be incurred, the risks and the mitigating factors.

Different parameters were taken into consideration while considering the cost factor incurred in the project:

**Consultancy cost:** This cost is based on the staffing of the project and its location.

**Hardware cost:** This cost is based on the cost incurred on the hardware utilized per person month like computer, tapes etc.

**Software cost:** This cost includes the cost incurred on the licensing of tools and software used in the project e.g. Oracle, Microsoft Office etc.

Systems analysis & requirements definition

After doing a preliminary investigation the following functional and non-functional requirements were found and a SRS (System Requirements Specification) was prepared. Based on the SRS we decided to follow the Evolutionary prototyping model for our system development.

A software process model is a simplified description/abstract representation of a software process which is presented from a particular perspective. A process model for software engineering is chosen based on the nature of the project and application, the methods and tools to be used, and the controls and deliverables that are required.

All software development can be characterized as a problem solving loop in which four distinct stages are encountered:

- ↪ Status quo
- ↪ Problem definition
- ↪ Technical development
- ↪ Solution integration

↪ *Status Quo* represents the current state of affairs.

↪ *Problem Definition* identifies the specific problem to be solved.

↪ *Technical Development* solves the problem through the application of some technology.

↪ *Solution Integration* delivers the results (e.g. documents, programs, data, and new product) to those who requested the solution in the first place.

### 3.1 USER CHARACTERISTICS

The majority of the functionality performed by the staff in the organization involves a flow of information along predefined hierarchy of users. The flow consists of information along with hierarchy or outside the system. It involves reviewing, commenting and approving along various officers in the hierarchy like Level 0 Officer, Level 1 Officer, Level 2 Officer, Level 3 Officer, Level 4 Officer, Level 5 Officer, Level 6 Officer and Level 7 Officer.

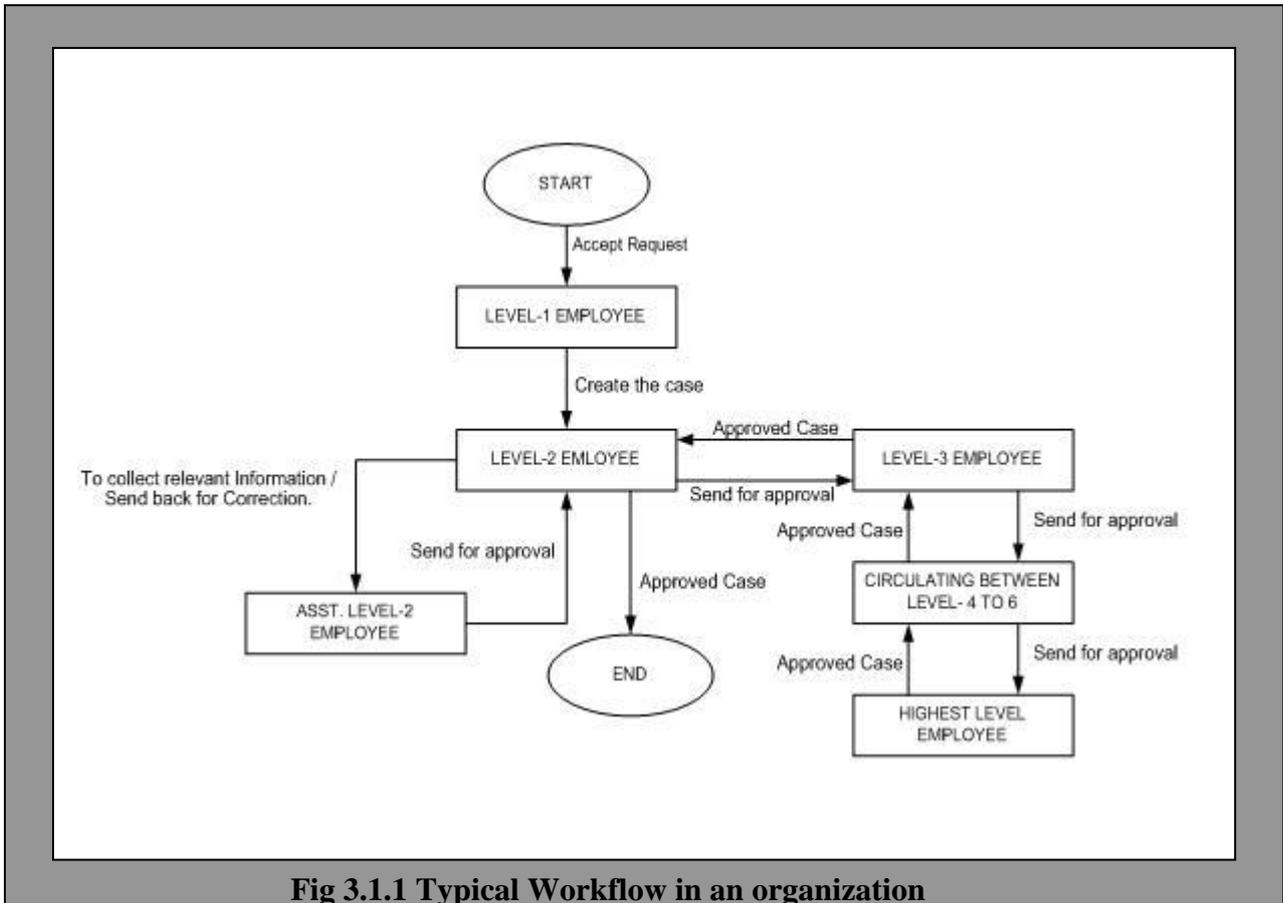


Fig 3.1.1 Typical Workflow in an organization

### 3.2 HARDWARE AND SOFTWARE REQUIREMENTS

<b>Tools/Technology</b>	<b>Front-end</b>	-	J2EE (Java 2 Enterprise Edition)
	<b>Back-end</b>	-	Oracle 10g Enterprise Edition
	<b>Server</b>	-	Oracle 10g Application Server
	<b>Browser</b>	-	Internet Explorer 6.0
<b>Operating System</b>	Windows 2000 (SP3) / Windows XP (SP2)		

#### Hardware Requirements

<b>Client Configuration</b>
<ul style="list-style-type: none"> <li>➤ Pentium IV, 750 MHz, 20GB HDD</li> <li>➤ Operating System: Windows XP/2000</li> <li>➤ RAM: 256 MB minimum</li> <li>➤ 400MB Minimum Free Space on Drive</li> <li>➤ Microsoft Office</li> </ul>
<b>Server Configuration</b>
2 Servers, each with following configuration
<ul style="list-style-type: none"> <li>➤ 2 CPU</li> <li>➤ Operating System: WinNT</li> <li>➤ RAM: 1GB Minimum</li> <li>➤ 80GB Minimum Free Space on Drive</li> </ul>
One Server with Oracle 10g Application Server
Other Server with Oracle 10g Database Server

#### Software Requirements

<b>System Software</b>
Oracle 10g Application Server
Oracle 10g Database Server
Oracle 9iAs JDeveloper
Microsoft Office
Adobe Acrobat Reader

## 4. SYSTEM ANALYSIS



## 4. SYSTEM ANALYSIS

### 4.1 STUDY OF CURRENT SYSTEM

The work done in the “Regional-Office” is mostly based on workflow where information or work flows from one person to the other with a status and a set of tasks attached to each person's role in the workflow. The work or piece of information gets assigned to the next person in the workflow, when the current person completes all the tasks required to be done by him/her. The nature of tasks performed in the workflow are predominantly, creation of documents, adding comments/views/opinions to a previously created documents based on precedence and experience, approving documents based on collective opinion, and finally publishing documents for use by the general public or the concerned entities in the regional office.

In addition to this work, there are also situations where the staff is required to furnish progress reports, reports based on statistical data and other facts and figures. These are generated from databases that store such information. The storage and the retrieval of the information in these Databases also form part of the work in the regional office.

The MBAQA Project (Medical Bill and Assembly Question Application) is intended to address all these requirements and aspects such as Security, Network Management, Filing System and Desktop Applications that will enable users to perform their work.

## 4.2 PROBLEM AND WEAKNESS OF CURRENT SYSTEM

There are many problems associated with the present system in regional office. Some of which are briefed below:

- The **Organizational setup** - The regional office is organized into –departments, each consisting of complex officers hierarchy
- Hierarchical way of routing the documents physically resulting in too many levels. There is an important policy that a document has to pass through many levels before the desired output can come out.
- The above routing does not contain any meetings, consultations and the iterative process when there is a disagreement between different levels.
- Traceability of the recruitment case (Many cases are reported “Untraceable” and the citizen need to put up a fresh request again down the hierarchy) due to multiple levels of processing.
- Case gets stuck at certain officials’ desk due to delay in getting information to process the case.
- Duplication of cases. Multiplication of case population on the same issue.
- Delay in decision making due to Inter-divisional consultation needs.
- Lack of Prioritization of cases.
- **Internal work vs. original work** - The routine work accounts for more than 50% of the total work and distract the efforts of the staff from the work relating to decision-making.
- **Exemption-driven system** - A large number of documents in the regional office relate to seeking exemption from some rule or the other.
- **Multiplicity of document** - A large number of documents are unnecessarily opened and processed like documents relating to completely routine matters, documents are opened at higher levels while the statutory/administrative power lies at one office, documents relating to proposals of requests for transfers made by employees and public representatives to authorities higher than the competent authority and documents chasing the ‘prima facie infeasible’ proposals which are the biggest sources of unproductive work and breeding of useless documents.

### 4.3 REQUIREMENTS OF NEW SYSTEM

This application is used for appointing the Representatives/Non-official members in various Co-operative Societies (Dist/Taluka Purchase/Sales Union, Sugar Co-ops, Apex Banks and Central Co-op Banks, Processing Co-ops etc).Departmental officer's gets recommendation regarding appointing the members in various Co-operative Societies from various sources.

Recommender issues a letter for appointment and makes his own recommendation for appointment to the officers in the co-operative societies to the departmental officers.

The level 1 officer creates file and then after file is approved through higher level officers issues a letter to Director of Co-op Societies asking to get the detailed report and to clarify whether the nominated candidates does possess or meet the minimum requirement for the post of co-operative societies on the basis of checklist.

If the Department doesn't get the documents then reminders are sent to the director, asking them to get the details. The reminder is prepared by the level 1 officer duly signed by the higher officer.

If the documents are available, the level 1 officer verifies all the documents and ticks the checklist to match all the documents that are available as mentioned.

The level 1 after verifying all the necessary documents and details marks his own notings and forwards the file to the higher level officers. The higher level officers recheck the file and mark his own notings and then file is moved in the hierarchy up to the recommender.

Recommender approves it and the order (format available as given by the client) for the appointment of members in the Co-operative Societies is issued.

**Conditional Appointment:**

There are cases when the appointment of the candidates at the required post is not dependent on the checklist. The order can be issued temporarily which appoints the members on the condition that they have to meet the minimum requirement for the post after being appointed within a specific period of time (10-20 days).

The recommender informs the Department to appoint the members within a short time skipping the checklist on a temporary basis. This is condition based appointment. In this case the order may be issued but the order issued states to produce the documents stated in Resolution within the specified time limits.

This would be a Workflow based system, which involve file movement. The data entered in the system should not be deleted.

#### 4.4 FEATURES OF NEW SYSTEM

- ☆ The system should be rigid to enforce discipline and accountability in implementing various schemes and policy initiatives and at the same time flexible enough to accommodate evolving public policies and to divert from the regular routing.
- ☆ The establishment work should be taken care by the system and allow the staff concentrate more on policy making issues etc.
- ☆ The document opening should pass through the ACID test as discussed above.
- ☆ The system should allow a new document to be open only if it satisfies a series of ACID tests like whether the subject relates to an infeasible request, whether the subject falls within the original jurisdiction of the Office etc.
- ☆ The system should exploit the power of network computing like workflow automation in selected work areas within the office departments etc.
- ☆ To summarize MBAQA project is an IT initiative to improve the internal efficiency of the organization in terms of
  - ☆ Control on opening of documents indiscriminately
  - ☆ Quicker processing of documents that are opened
  - ☆ Improving the productivity of staff within the organization
  - ☆ Providing visibility into the way the organization conducts its business
  - ☆ Providing progress monitoring mechanisms for officers at the helm of affairs in each of the departments within the regional office

#### 4.5 FEASIBILITY STUDY

- **Does the system contribute to the overall objectives of the organization?**

This system would contribute to the overall objectives of the organization as under

- 📁 Create an Office Automation System
- 📁 Enhance Productivity
- 📁 Enable Prioritization of work.
- 📁 Use IT as an enabler to help in daily work
- 📁 Design an efficient workplace
- 📁 Enable Business Rules based Processing
- 📁 Access Controls at all levels.
- 📁 Efficient & Transparent administration
- 📁 Generation of Report
- 📁 Generation of Standard Reports
- 📁 Analyzing and monitoring of data

- **Can the system be implemented using the current technology and within the given cost and schedule constraints?**

The part of the system can be implemented using the current technology although some modifications have to be done at various places. Some alterations with the prototypes and functionalities would be done in order to work out the cost constraints and to cope with the scheduling constraints.

In the Parameterized report some validations like selecting at most up to eight fields, etc would be implemented. This is done to get optimum balance between the requirements and cost factors.

Moreover, in Query based Parameterized Report the conditional field would be configured and only one query however long it may be with any number of conjunctions could be evaluated.

- **Can the system be integrated with other systems which are already in place?**

Medical Bill and Assembly Question Application (MBAQA) provides Document management, Workflow, Collaboration environment and Knowledge Management in an integrated fashion and delivers as Electronic Workplace that will result in productivity improvement in an Organization. Hence, this Application can be integrated with other systems which are already in place.

Various types of Feasibility study are identified as under:

### 1) **Technical Feasibility**

The technical Feasibility test involves questions like

- ❖ Is the current Computer's configuration adequate for Usage?
- ❖ Is the selected technique sufficient for future enhancements?
- ❖ Is the skill set available with proper manpower for development and maintenance?

MBAQA uses J2EE technology for development of applications. J2EE is a powerful technology suitable for MVC model 2 architecture. Also UNIX server is used at client side to make the system more economical, so being a platform independent language java serves as most suitable application development language.

Also as this system is going to be used by a large organization, it is likely to deal with a large number of data. Security of data is also another important requirement. So, Oracle 10g is more suitable at back-end.

### 2) **Operational Feasibility**

The users of the client organization should be able to operate the software easily, for whom the software is developed, to gain the advantages of the software. This demands good user interface. During the software development process prototypes of the application are developed initially and are shown to client, so the client can give some additional changes as per their requirements in the operating software. As the software is

developed and modified as per the comments of the users, there is very little possibility that there will be resistance from end users.

Users may not be highly adept at the technical aspect of computer skills so will require some training sessions. After that they are expected to be familiarized with the application. System has been developed considering user characteristics to make it user-friendly.

### 3) Economic Feasibility

The questions put forward in economic feasibility are:

- ❖ Are there sufficient cost benefits in creating the system?
- ❖ Are the costs of implementation of current system so great that the task of project development is required?

This feasibility study measures the cost effectiveness of project. It takes into consideration cost and benefit.

#### ❖ Hardware-Software Cost

This feasibility is of paramount importance in development of any software for any particular company. TCS is having license versions of software required for the development of MBAQA. (Oracle JDeveloper, PLSQL Developer, Microsoft Visual SourceSafe, Oracle 10g). Hardware cost includes the cost of the four servers required for running the application.

#### ❖ Maintenance Cost

This includes application and database maintenance cost.

**Conclusion:** It is economically feasible to develop and implement MBAQA.

#### **4.6 REQUIREMENTS VALIDATION**

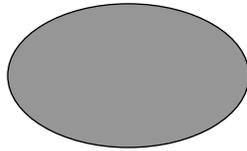
The Requirements provided by the users are converted into Users Requirement Specification as described above. The URS documents are then revised, validated, authorized and approved by the users. The development commences after the approval phase i.e. after the signing off of the URS documents. Thus, the URS is concerned to be the most important document from user and developer prospective. The Developer will try to adhere to the requirements specified in the URS documents in order to develop the required application.

### 4.7 Function of System

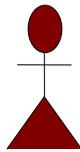
#### 4.7.1 Use Case Diagram

Various notations used in the use case diagrams are:

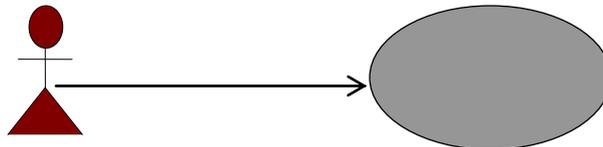
- Use Case



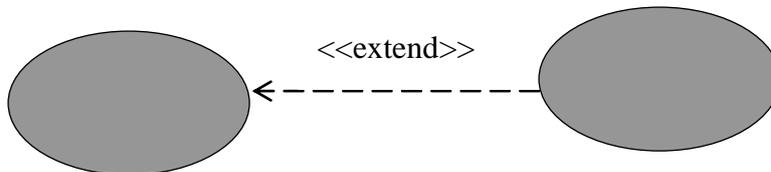
- Actors



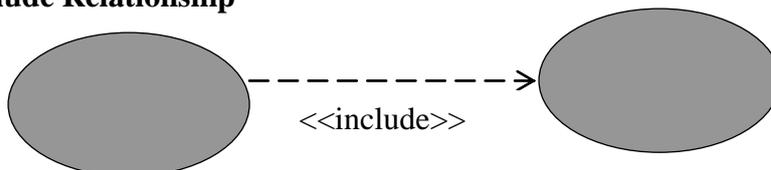
- Association Relationship



- Extend Relationship



- Include Relationship



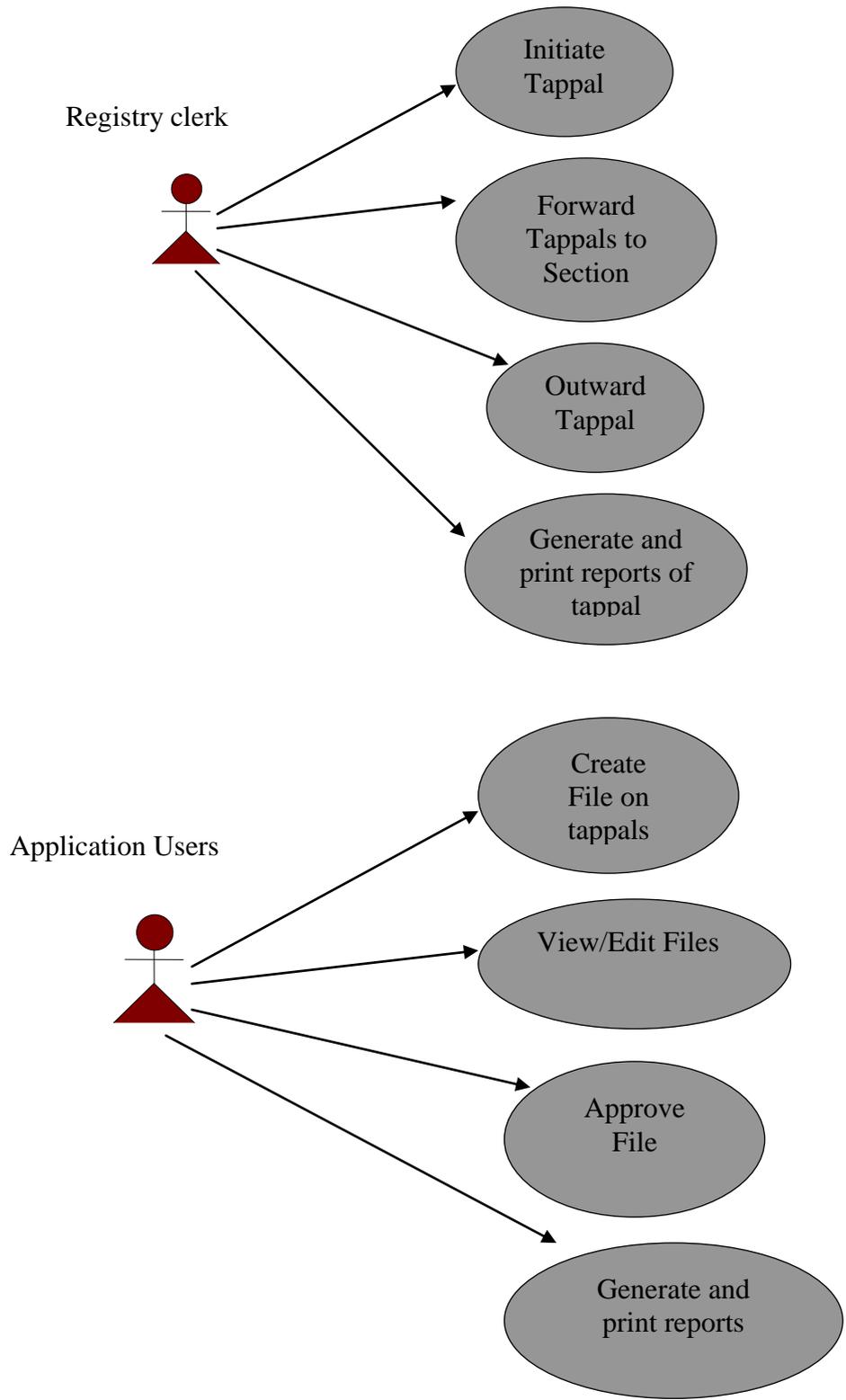


Fig 4.7.1 Use Case Diagram

### 4.8 DATA MODELING

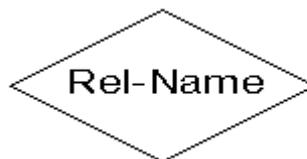
#### ER Diagram

For the ER diagram, we have followed the below mentioned notations.

- Entities



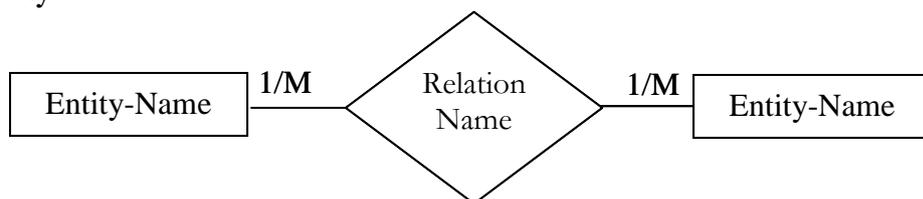
- Relationships



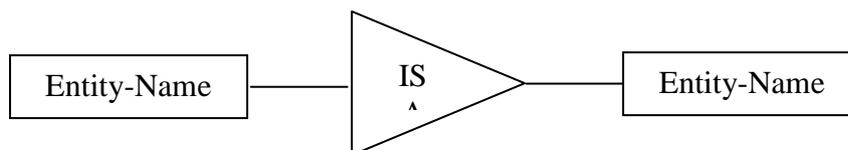
- Attributes



- Cardinality



- Subclasses and Inheritance



**Fig 4.7.2 Notations for E-R Diagram**

4.7.2 E-R Diagram

sgva\_med\_rbmt\_dtls  
 SGVA\_MED\_MST  
 SGVA\_MEDICINE\_DTLS  
 sgva\_medicine\_mst\_seq  
 SGVA\_EMP\_FAMILY\_TEMP  
 SGVA\_MAPPING\_KEY\_TEMP  
 SGVA\_DISEASE\_MST  
 SGVA\_HSPTL\_MST

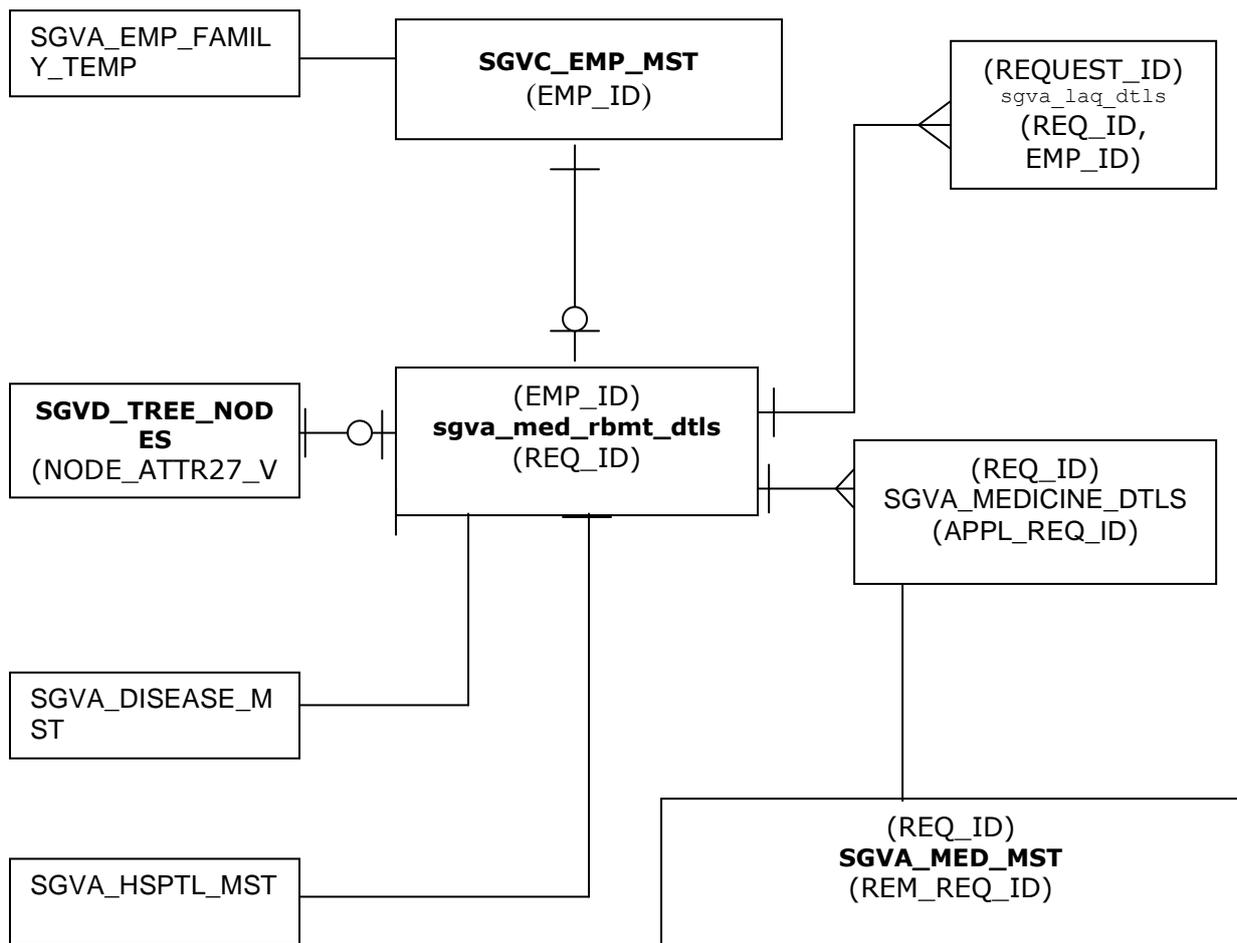


Fig 4.8.1 Entity-Relationship Diagram (Medical Bill)

4.7.3 E-R Diagram

SGVA\_LAQ\_DTLS  
 SGVA\_LAQ\_SUBITEM\_DTLS  
 SGVA\_HOD\_MST  
 SGVO\_DEPT\_MST  
 SGVC\_LANG\_MST  
 SGVC\_LOC\_MST

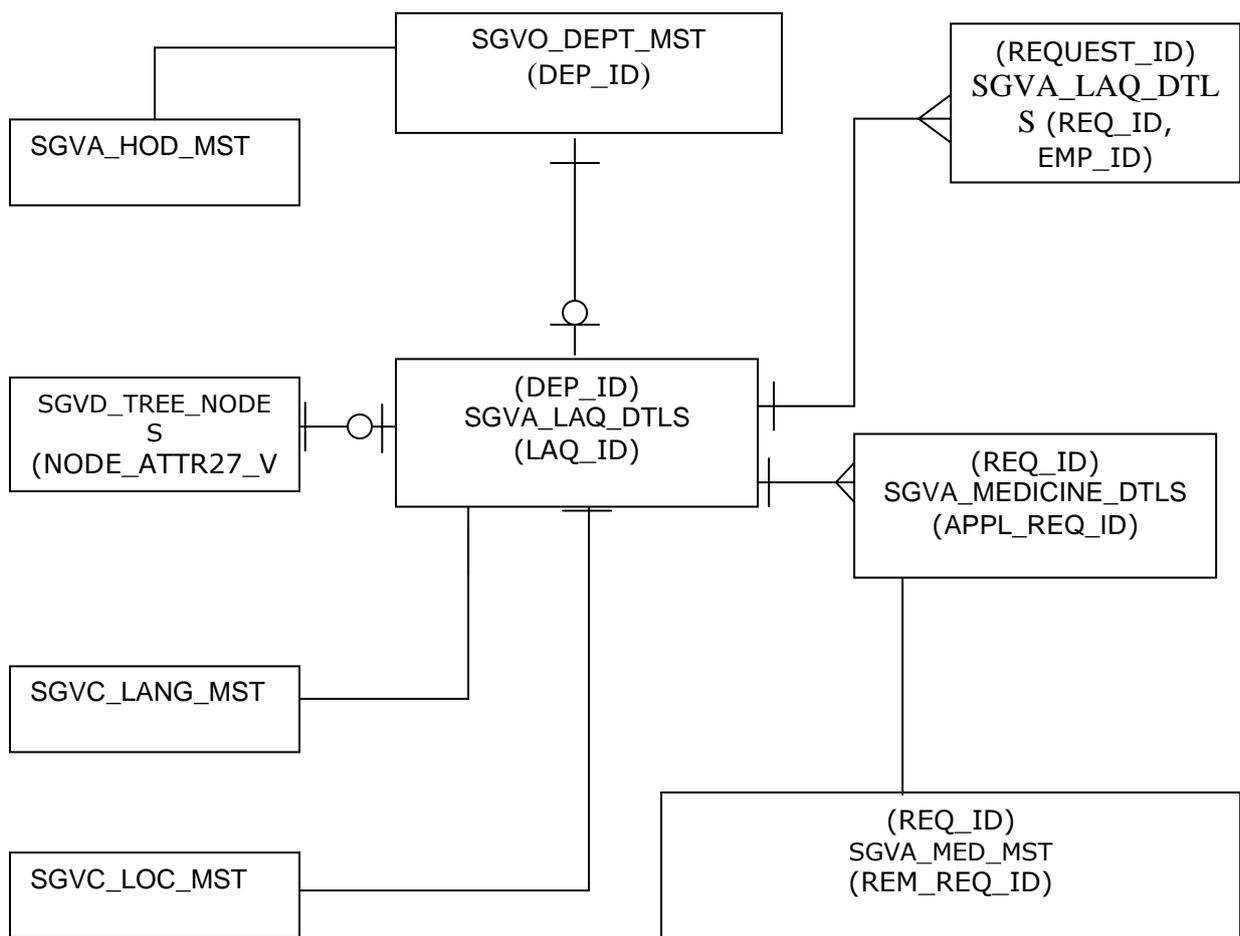
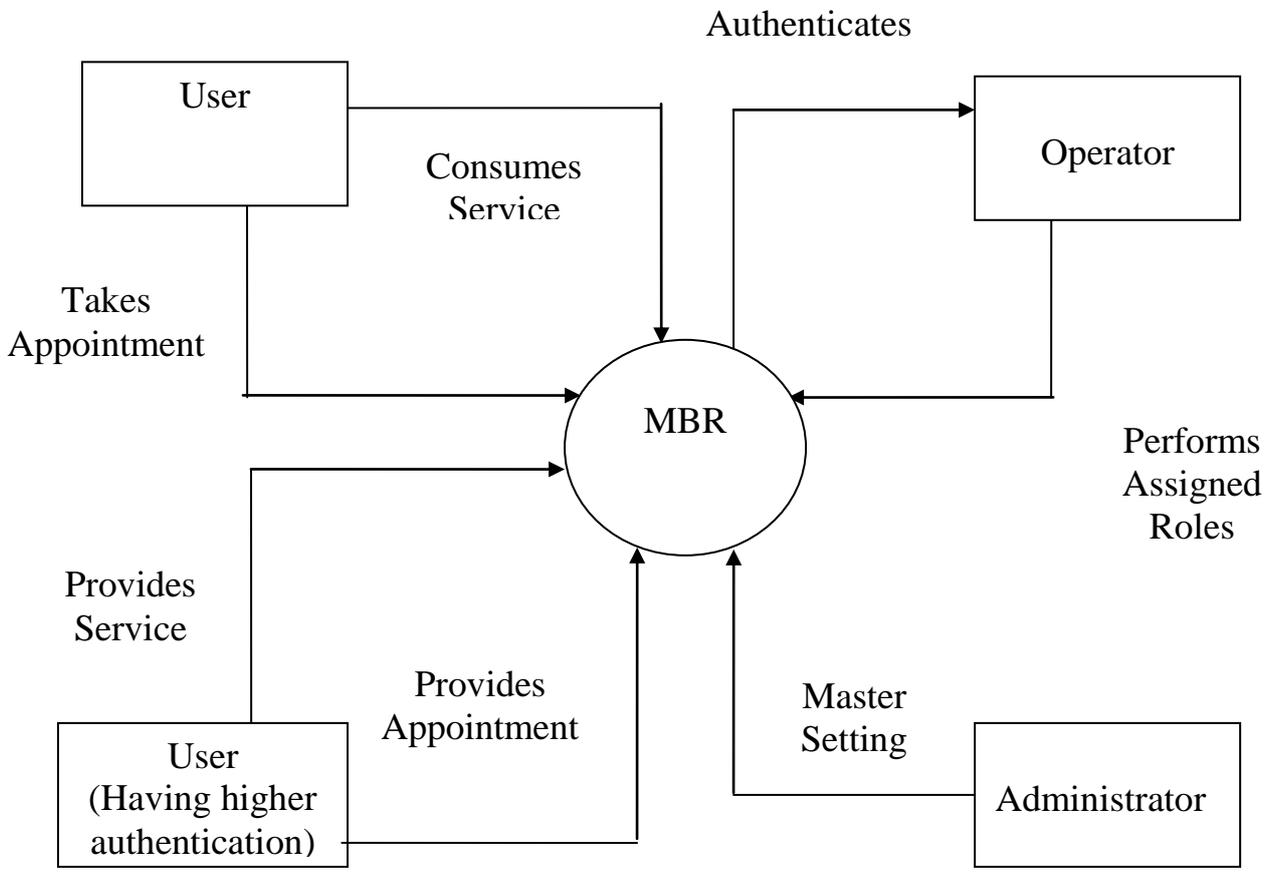


Fig 4.8.1 Entity-Relationship Diagram ( LAQ-Corresspondence)

4.7.4 Context Diagram

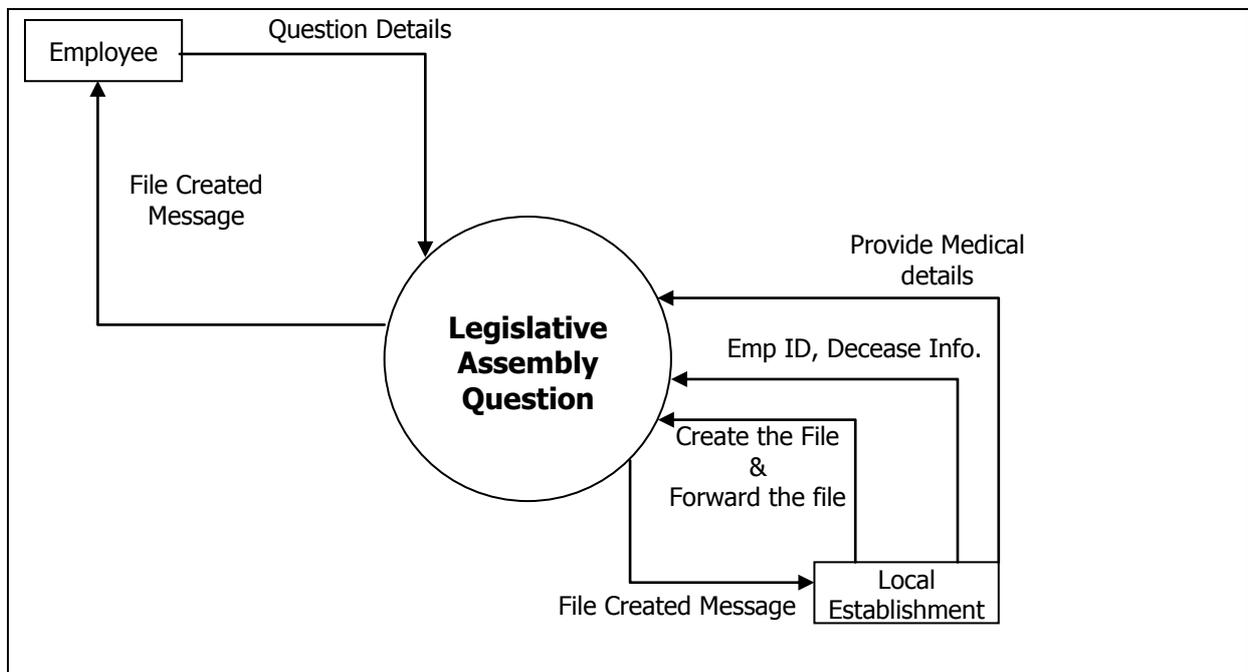


### 4.8 FUNCTIONAL AND BEHAVIORAL MODELLING

#### 4.8.1 Context Level Diagram

**Description:**

The Data Flow Diagram shown below is a context level diagram of Tours and Travel application of MBAQA.



*Fig 4.9.1 Context Level Diagram*

4.8.2 Data Flow Diagram

Description:

The Data Flow Diagram shown below is a 1st level diagram of Tours and Travel Application

Level-1 DFD for Travel Request

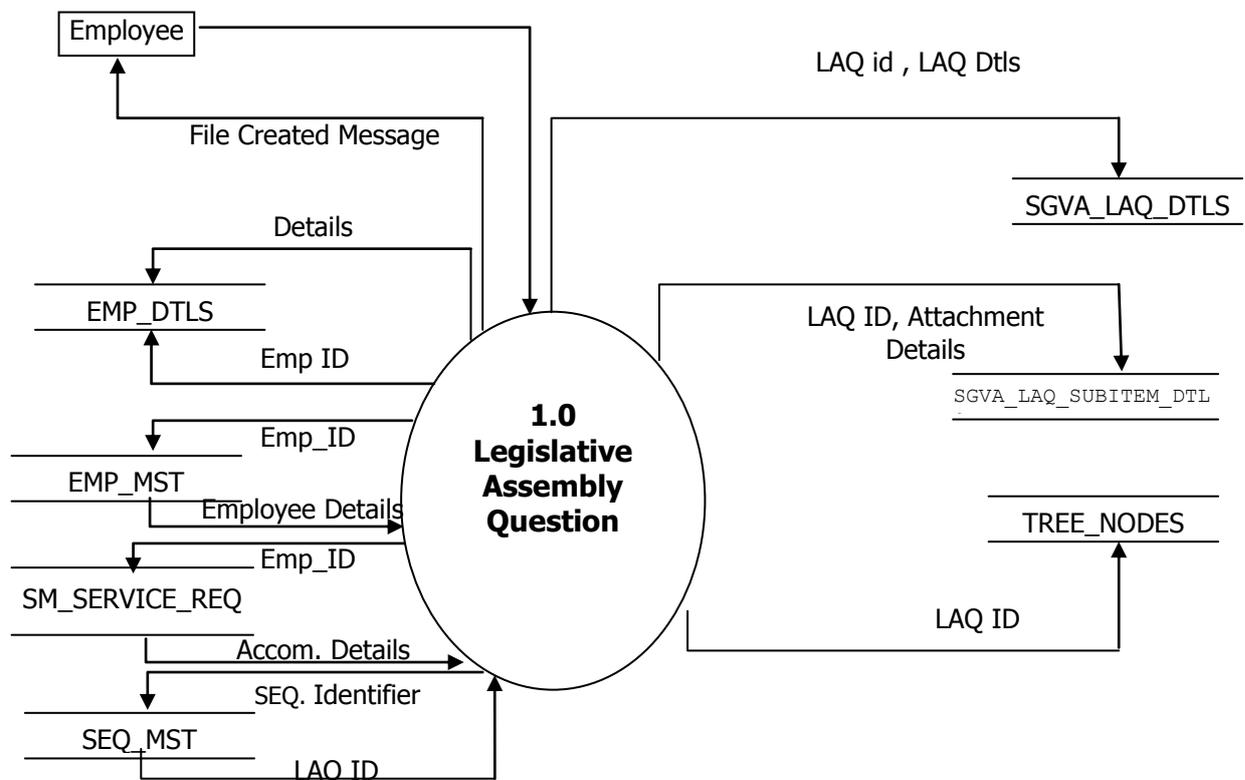


Fig 4.9.2.1 Level-1 DFD for Legislative Assembly Question

Level-1 DFD for Travel Advance Request

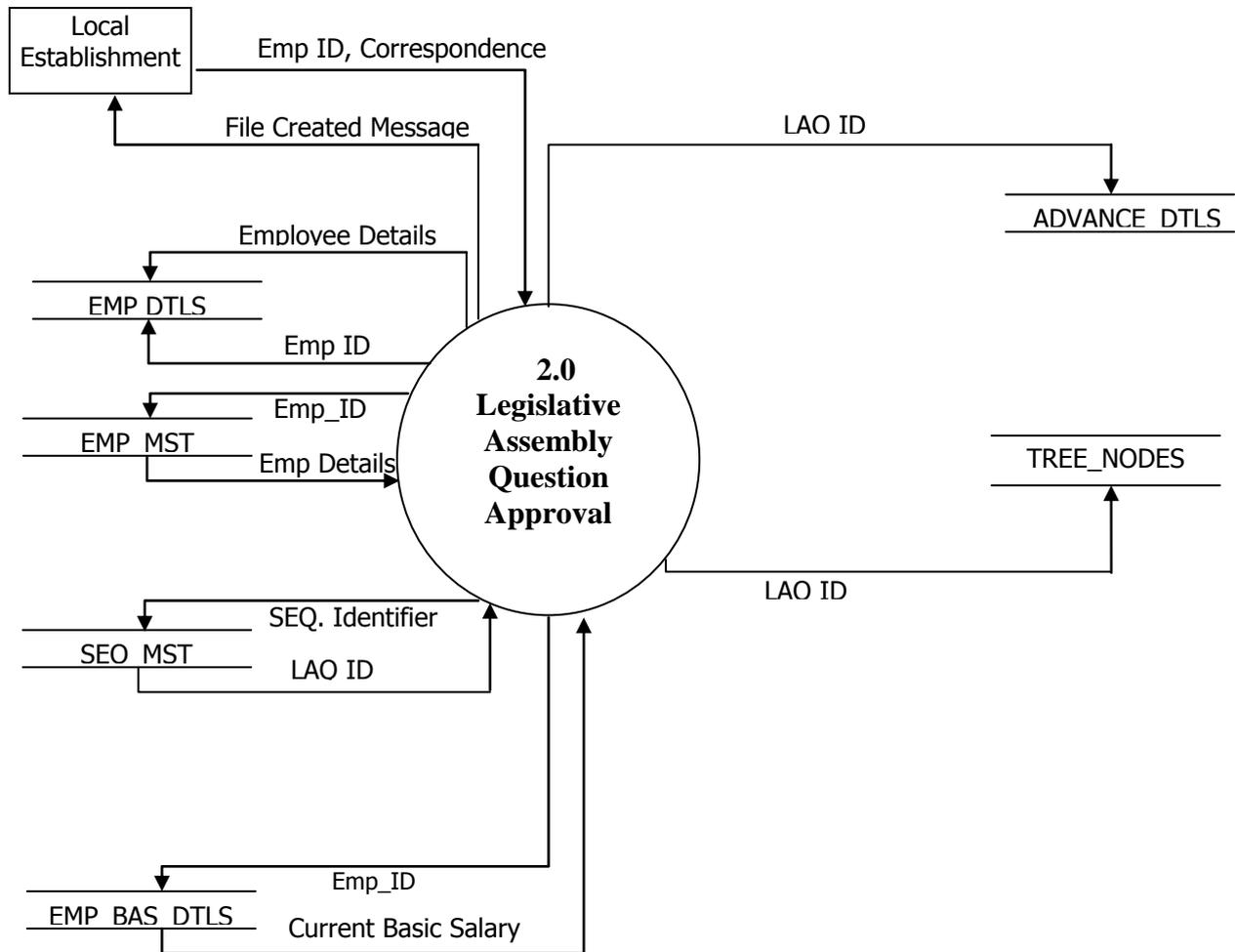
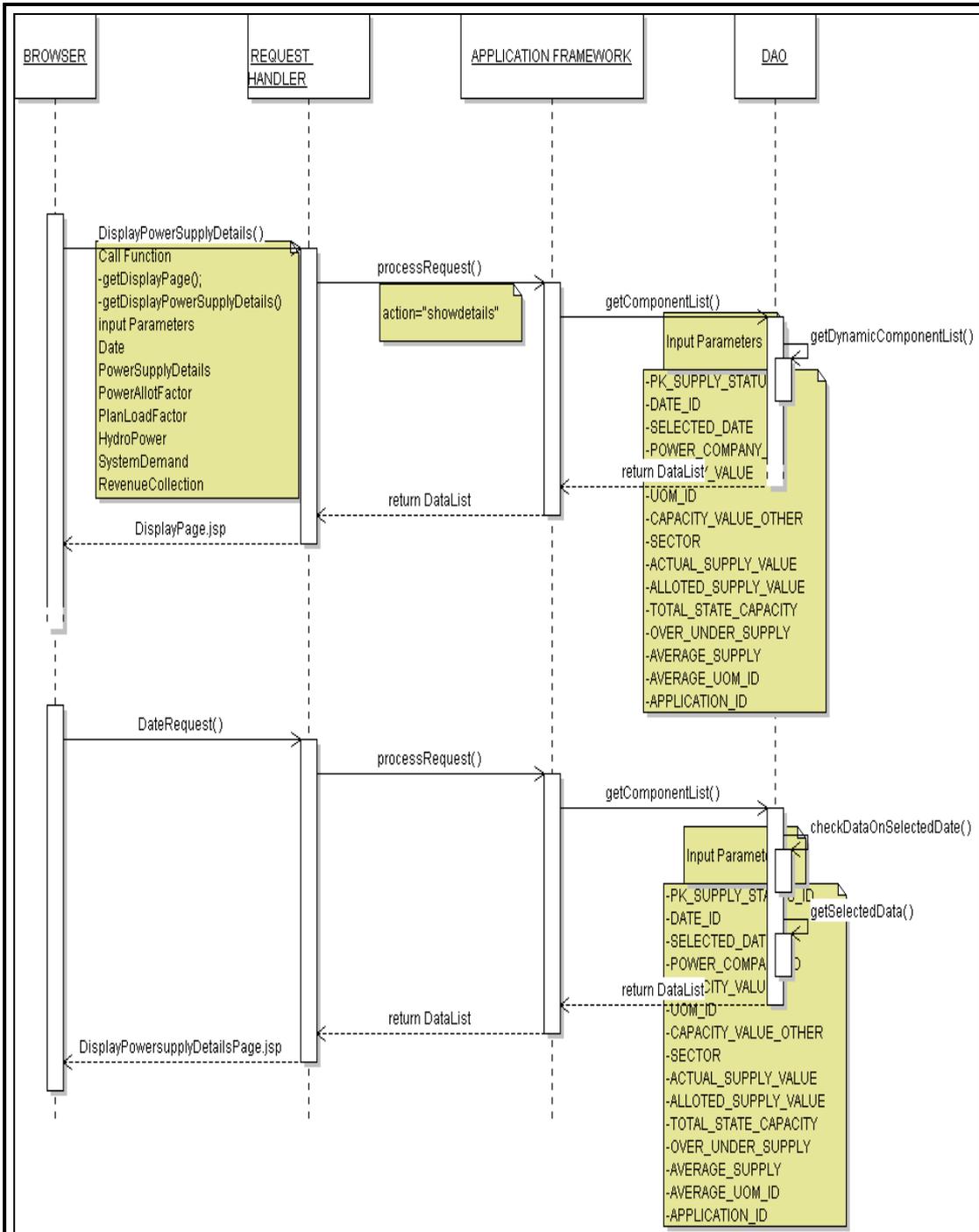


Fig 4.9.2.2 Level-1 DFD for Legislative Assembly Question

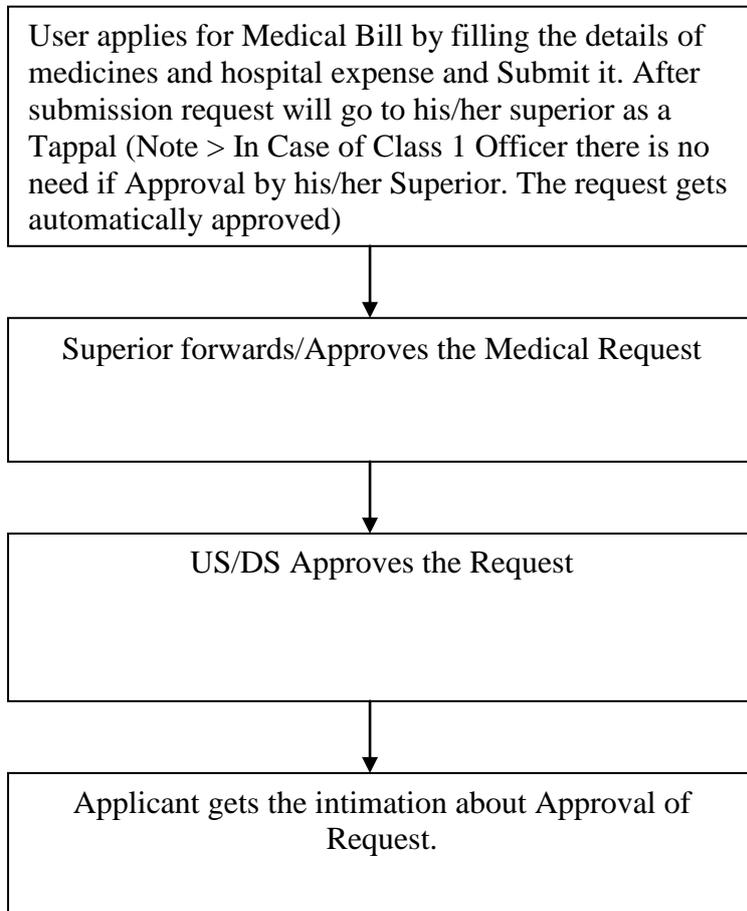
## Sequence Diagram



**4.10 Life Cycle of Tours and Medical Bill Application**

**1. Medical Request**

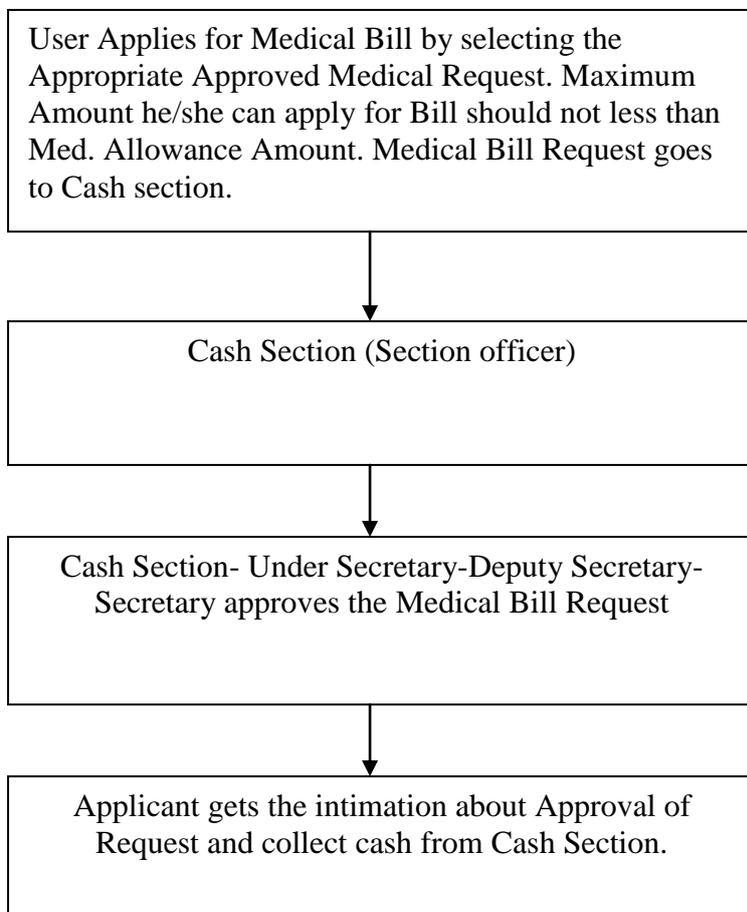
[Application Link: Home Page → Applications → Medical Bill Reimbursement ]



After Approval of Medical request, User can apply for Medical Bill and Medical Reimbursement

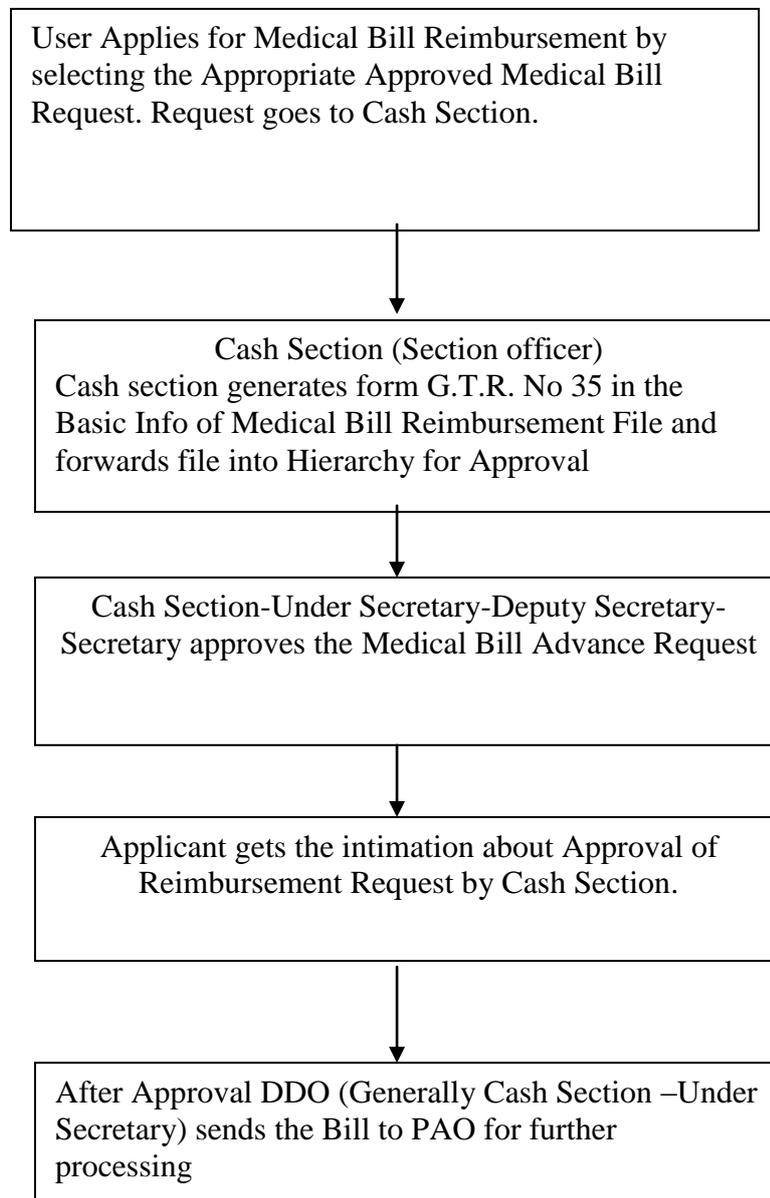
## 2. Medical Bill

[Application Link: Home Page → Applications → Medical Bill Reimbursement Request]



**3. Medical Bill Reimbursement**

[Application Link: Home Page → Applications → Office Procedures > Domestic Travel & Tour > Travel Reimbursement]



**Reports:-**

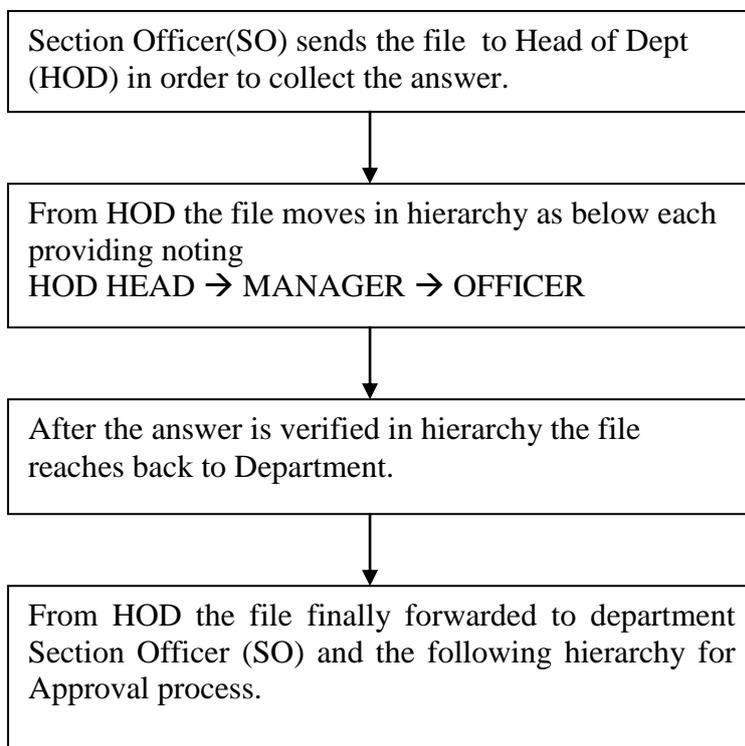
Users can see and track the status of their different request using following Link

[Report Link: Home Page → Applications → Track My Medical Bill Reimbursement Request]

#### 4.10 Life Cycle of Tours and Legislative Assembly Application

##### 1. Assembly Question Request

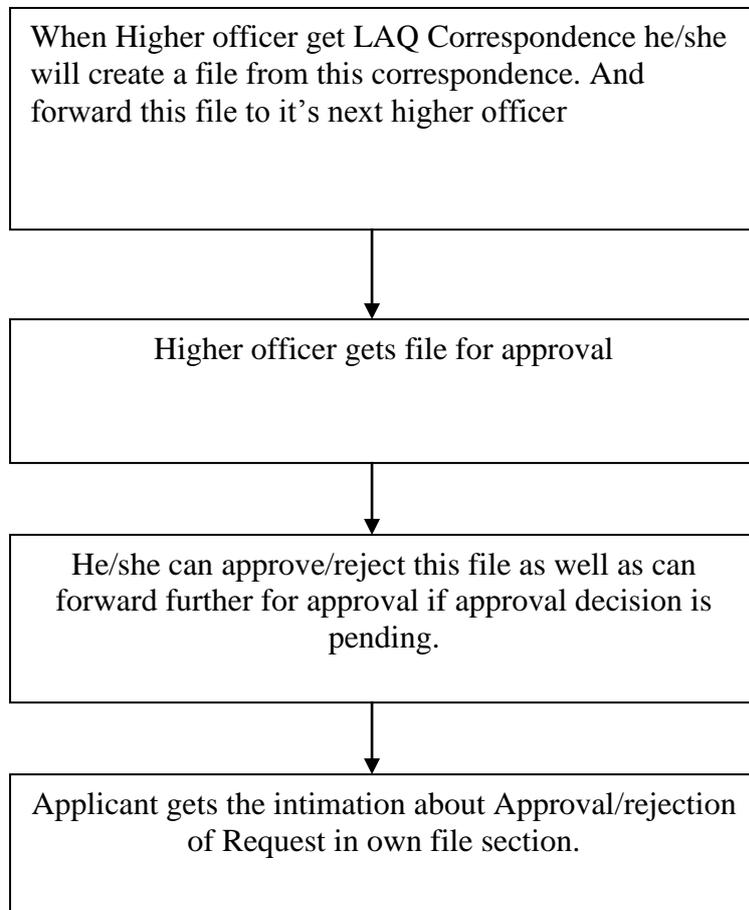
[[Application Link](#): Home Page → Applications → Legislative Assembly Questions]



After Approval of LAQ Correspondence , User can ask this question in assembly.

## 2. Medical Bill

[[Application Link](#): Home Page → Applications → Medical Bill Reimbursement Request]



### Reports:-

Users can see and track the status of their different request using following Link

[[Report Link](#): Home Page → Applications → Track My Legislative Assembly Question]

## Data Dictionary

<b>SGVA_MED_RBMT_DTLS</b>				
Name	Type	Null able	Default Value	Description
REQ_ID	VARCHAR2(20)	N		Request Id, For Unique Identification
LINE_ITEM_NO	NUMBER(5)	N		Item Number
EMP_ID	VARCHAR2(12)	N		Employee Id
PATIENT_ID	VARCHAR2(12)	Y		Patient Id
DISEASE_ID	VARCHAR2(12)	Y		Describe Deases Name
HOSPITAL_ID	VARCHAR2(12)	Y		Hospital Name
TRTMT_FROM_DT	DATE	Y		Date from which treatment started
TRTMT_TO_DT	DATE	Y		Date on which treatment ended
AMT_CLAIMED	NUMBER(12,2)	Y		Amount Claimed by User
AMT_SANCTIONED	NUMBER(12,2)	Y		Sanctioned Amount
ADV_AMT	NUMBER(12,2)	Y		Advance Amount
REIM_FLAG	CHAR(1)	Y		Reimbursement Flag
EMP_ATTR1	VARCHAR2(50)	Y		Employee Attribute
EMP_ATTR2	VARCHAR2(50)	Y		Employee Attribute
EMP_ATTR3	VARCHAR2(50)	Y		Employee Attribute
EMP_ATTR4	VARCHAR2(50)	Y		Employee Attribute
EMP_ATTR5	VARCHAR2(50)	Y		Employee Attribute
LANG_ID	VARCHAR2(5)	N		Language Id
LOC_ID	VARCHAR2(5)	N		Location Id
CRT_DT	DATE	N		Date of Request Submission
CRT_USR	VARCHAR2(200)	N		User Who Submitted The Request
LST_UPD_USR	VARCHAR2(200)	Y		Last User Who Edited The Request
LST_UPD_DT	DATE	Y		Date of Request Editing
MED_REQ_TYPE	VARCHAR2(200)	Y		Type of Medical Request
ACTIVE	CHAR(1)	N	'Y'	Status of Request Flag
APPROVE	CHAR(1)	N	'N'	Status of Approval Flag
BILL_DT	DATE	Y		Date of Bill
BILL_AMT	NUMBER(12,2)	Y		Amount of Bill
BILLS_APPROVE	CHAR(1)	Y	'N'	Bill Approval Flag
BILLS_AVAIL	CHAR(1)	Y	'N'	Bill Availability Flag
BILL_NO	VARCHAR2(20)	Y		Bill No
CHECKED	CHAR(1)	Y	'N'	Checked Flag

Name	Type	Null able	Default Value	Description
APPLYNG_DT	DATE	Y		Date of Applying Reimbursement
TRTMNT_TYPE_ID	VARCHAR2(20)	Y		Treatment Type
ORDER_NO	VARCHAR2(50)	Y		Order Number
ORDER_DT	DATE	Y		Date of Order
PAYMENT_MODE	VARCHAR2(1)	Y		Mode of Payment
ROOM_TYPE	VARCHAR2(1)	Y		Type of Room
MISC_AMT	NUMBER(12,2)	Y		Miscellaneous Amount
ROOM_CHARGE_AMT	NUMBER(12,2)	Y		Room Charge Amount
NON_ADMISSIBLE_AMT	NUMBER(12,2)	Y		Not Admissible Amount
MED_ALLOWANCE	NUMBER(12,2)	Y		Medical Allowance
RELATION_ID	NUMBER(5)	Y		Relationship between employee and family member
RELATIVE_NAME	VARCHAR2(100)	Y		Family member name
CHECK_FLAG	VARCHAR2(5)	Y		Checked Flag
REASON	VARCHAR2(1000)	Y		Reason
ADD_ALLOWANCE	NUMBER(12,2)	Y		Allowance
AGE	NUMBER(5)	Y		Age of Applicant
DISEASE	VARCHAR2(50)	Y		Disease Name
REMARK	VARCHAR2(2000)	Y		Remark
BILLAPPROVE	VARCHAR2(5)	Y		Bill Approve Flag
BANK_NAME	VARCHAR2(20)	Y		Bank Name

SGVA_MED_MST				
Name	Type	Null able	Default Value	Description
MED_ID	VARCHAR2(20)	N		Medicine Id
MED_TYPE	VARCHAR2(20)	N		Medicine Type
MED_NAME	VARCHAR2(100)	N		Medicine Name
LANG_ID	VARCHAR2(5)	N		Language Id
LOC_ID	VARCHAR2(5)	N		Location Id
CRT_DT	DATE	N		Date of Request Submission
CRT_USR	VARCHAR2(12)	N		User Who Submitted The Request
LST_UPD_DT	DATE	Y		Last User Who Edited The Request
LST_UPD_USR	VARCHAR2(12)	Y		Date of Request Editing
MED_ACTIVE	CHAR(1)	Y	'Y'	Active Flag
DOC_REQD	CHAR(1)	Y	'N'	Document Required

SGVA_MEDICINE_DTLS				
Name	Type	Null able	Default Value	Description
APPL_REQ_ID	VARCHAR2(20)	N		Application Request Id
MEDICINE_ID	VARCHAR2(20)	N		Medicine Id
MED_AMT	NUMBER(8,2)	N		Medicine Amount
LANG_ID	VARCHAR2(5)	N		Language id
LOC_ID	VARCHAR2(5)	N		Location Id
CRT_DT	DATE	N		Date of Request Submission
CRT_USR	VARCHAR2(12)	N		User Who Submitted The Request
LST_UPD_DT	DATE	Y		Last User Who Edited The Request
LST_UPD_USR	VARCHAR2(12)	Y		Date of Request Editing
MED_NAME	VARCHAR2(100)	Y		Medicine Name
MED_TYPE	VARCHAR2(100)	Y		Medicine Type

SGVA_MEDICINE_MST_SEQ			
Sequence	min value	max value	increment by
Sequence	1	1.00E+27	1

<b>SGVA_EMP_FAMILY_TEMP</b>				
<b>Name</b>	<b>Type</b>	<b>Null able</b>	<b>Default Value</b>	<b>Description</b>
EMP_ID	VARCHAR2(7)	Y		Employee Id
NAME	VARCHAR2(50)	Y		Employee Name
RELATION	VARCHAR2(50)	Y		Relation
AGE	NUMBER(3)	Y		Age
CRT_USR	VARCHAR2(200)	N		Date of Request Submission User Who Submitted The
CRT_DT	DATE	N		Request
LANG_ID	VARCHAR2(5)	N		Language Id
LOC_ID	VARCHAR2(5)	N		Location Id
LST_UPD_USR	VARCHAR2(200)	Y		Last User Who Edited The Request
LST_UPD_DT	DATE	Y		Date of Request Editing

<b>SGVA_MAPPING_KEY_TEMP</b>				
<b>Name</b>	<b>Type</b>	<b>Nullable</b>	<b>Default Value</b>	<b>Description</b>
APP_ID	VARCHAR2(5)	N		Application Id
SEQUENCE	NUMBER(5)	N		Sequence Number
PK_VAL	VARCHAR2(50)	N		Primary Key Value
FK_VAL	VARCHAR2(50)	Y		Foreign Key Value
ROW_NUM	NUMBER(3)	Y		Row Number
ROW_ID	VARCHAR2(50)	Y		Row Number
KEY	VARCHAR2(10)	Y		Mapping Key

SGVA_DISEASE_MST				
Name	Type	Null able	Default Value	Description
DISEASE_ID	VARCHAR2(12)	N		Disease Id
DSGN_ID	VARCHAR2(12)	N		Designation Id
DIS_DESC	NVARCHAR2(200)	N		Disease Description
MAX_AMT	NUMBER(12,2)	N		Maximum Amount to be sanctioned
DISC_ATTR1	NVARCHAR2(100)	Y		Description
DISC_ATTR2	NVARCHAR2(100)	Y		Description
DISC_ATTR3	NVARCHAR2(100)	Y		Description
DISC_ATTR4	NVARCHAR2(100)	Y		Description
DISC_ATTR5	NVARCHAR2(100)	Y		Description
LANG_ID	VARCHAR2(5)	N		Language Id
LOC_ID	VARCHAR2(5)	N		Location Id
CRT_DT	DATE	N		Date of Creation
CRT_USR	VARCHAR2(12)	N		Created User
LST_UPD_USR	VARCHAR2(12)	Y		Last User Who Edited Data
LST_UPD_DT	DATE	Y		Date of Editing
DISEASE_ACTIVE	CHAR(1)	Y	'Y'	Disease Flag
DOC_REQD	CHAR(1)	Y	'N'	Document Required Flag

SGVA_HSPTL_MST				
Name	Type	Null able	Default Value	Description
HSPTL_ID	VARCHAR2(12)	N		Hospital Id
HSPTL_NAME	NVARCHAR2(200)	N		Hospital Name
HSPTL_TYPE	VARCHAR2(12)	Y		Hospital Type
DOC_REQD	CHAR(1)	N	'N'	Document Required Flag
ADDR_LINE1	VARCHAR2(1000)	Y		Address of Hospital
ADDR_LINE2	VARCHAR2(1000)	Y		Address of Hospital
HSPTL_ACTIVE	CHAR(1)	N	'Y'	Hospital Active Flag
HSPTLMST_ATTR1	NVARCHAR2(100)	Y		Hospital Description
HSPTLMST_ATTR2	NVARCHAR2(100)	Y		Hospital Description
HSPTLMST_ATTR3	NVARCHAR2(100)	Y		Hospital Description
HSPTLMST_ATTR4	NVARCHAR2(100)	Y		Hospital Description
HSPTLMST_ATTR5	NVARCHAR2(100)	Y		Hospital Description
HSPTLMST_ATTR7	NVARCHAR2(100)	Y		Hospital Description
LANG_ID	VARCHAR2(5)	N		Language Id
LOC_ID	VARCHAR2(5)	N		Location Id
CRT_DT	DATE	N		Date of Creation
CRT_USR	VARCHAR2(12)	N		Created User
LST_UPD_USR	VARCHAR2(12)	Y		Last User Who Edited Data
LST_UPD_DT	DATE	Y		Date of Editing

SGVA_LAQ_DTLS				
Name	Type	Null able	Default Value	Description
LTTR_NUM	NVARCHAR2(100)	Y		Letter Number
LTTR_REC_DT	DATE	Y		Letter Received Date
SUB_ID	NVARCHAR2(4000)	Y		Subject
MEMBER_NAME	NVARCHAR2(1000)	Y		Question Raised By
QUEST_NUM	NUMBER(10)	N		Question Number
LAQ_TYPE	NVARCHAR2(200)	N		LAQ Type
RAISED_ON	DATE	Y		Question Raised On
DUE_DT	DATE	Y		Due Date of Sending Reply
DESCRIPTION	NVARCHAR2(4000)	Y		Description
HOD_INFO_FLAG	NVARCHAR2(200)	Y		HOD Information Required Flag
HOD_INFO	NVARCHAR2(4000)	Y		HOD Information
ANSWER	NVARCHAR2(4000)	Y		Answer
COPIES_ENG	NUMBER(4)	Y		Number of Copies To Be Sent
COPIES_REG	NUMBER(4)	Y		Number of Copies To Be Generated
REMARKS	NVARCHAR2(4000)	Y		Remarks
APPROVE	NVARCHAR2(50)	Y		Approve Flag
LANG_ID	VARCHAR2(5)	N		Language Id
LOC_ID	VARCHAR2(5)	N		Location Id
CRT_DT	DATE	N		Date of Creation
CRT_USR	NVARCHAR2(4000)	N		Created User
LST_UPD_USR	NVARCHAR2(4000)	Y		Last User Who Edited Data
LST_UPD_DT	DATE	Y		Date of Editing
LAQ_ID	VARCHAR2(12)	N		LAQ Id
ACTIVE	NVARCHAR2(50)	Y		Active Flag
SUPP_INFO	NVARCHAR2(4000)	Y		Supplimentary Info
DEPT_ID	VARCHAR2(12)	N		Department Id
HOD_ID	VARCHAR2(12)	Y		HOD Id
LAQ_SESSION	NVARCHAR2(200)	Y		Assembly Session Number
MLA_MP_ID	NVARCHAR2(100)	Y		To Be Replied By
CONSTITUENCY	VARCHAR2(3)	Y		Constituency of To Be Replied By
PREVIOUS_RELATED_NUM	NUMBER(10)	Y		Previous Related Question Number
SUPP_QUESTION_FLAG	NVARCHAR2(600)	Y		Supplimentary Info Flag
QUESTION	NVARCHAR2(4000)	N		Question

Name	Type	Null able	Default Value	Description
SEND_REPLY_DUE_DT	DATE	Y		Due Date of Sending Reply
DUE_REPLY_DATE_ASMLY	DATE	Y		Due Date of Replying in Assembly
PRIORITY_NUM	NUMBER(4)	Y		Priority Number
LAQ_STATUS	NVARCHAR2(400)	Y		LAQ Status
DISCUSSED_FLAG	NVARCHAR2(600)	Y		Discussed In Assembly Flag
REVISED_REPLY_DATE	DATE	Y		Revised Reply Date
REPLY_DATE	DATE	Y		Reply Date
REPLY_IN_ASSEMBLY	NVARCHAR2(4000)	Y		Reply In Assembly
REPLY_GIVEN_BY	NVARCHAR2(120)	Y		Reply Given By
LAQ_VSABHA	NVARCHAR2(400)	Y		Vidhansabha Number
CONSTITUENCYMEM	NVARCHAR2(6)	Y		Constituency of Question Raised By
ANSWER1	CLOB	Y		Answer CLOB
SUPPINFO	CLOB	Y		Supplimentary Information CLOB

Name	Type	Columns	Enabled	Referencing Table	Referring Column	On delete	Deferrable	Deferred
PK_SGVA_LAQ_DTLS	Primary	LAQ_ID	Y				N	N
FK_LAQD_TL_HODMST	Foreign	HOD_ID, LANG_ID	Y	IWAS_AD MIN.SGVA_HOD_MS T	HOD_ID, LANG_ID	No action	N	N
FK_LAQ_DEPT	Foreign	DEPT_ID, LANG_ID	Y	IWAS_AD MIN.SGVO_DEPT_MS T	DEPT_ID, LANG_ID	No action	N	N
FK_LAQ_LOC	Foreign	LOC_ID, LANG_ID	Y	IWAS_AD MIN.SGVC_LOC_MST	LOC_ID, LANG_ID	No action	N	N
FK_SGVA_LAQ_DTLS_L	Foreign	LANG_ID	Y	IWAS_AD MIN.SGVC_LANG_M ST	LANG_ID	No action	N	N

SGVA_LAQ_SUBITEM_DTLS				
Name	Type	Null able	Default Value	Description
LAQ_ID	VARCHAR2(12)	N		LAQ Id
SUB_ITEM_LAQ_ID	VARCHAR2(12)	N		Sub Item Id
SUB_ITEM_QUESTION	NVARCHAR2(4000)	N		Sub Question
SUB_ITEM_ANSWER	NVARCHAR2(4000)	Y		Sub Answer
LANG_ID	VARCHAR2(5)	N		Language Id
LOC_ID	VARCHAR2(5)	N		Location Id
CRT_DT	DATE	N		Date of Creation
CRT_USR	VARCHAR2(200)	N		Created User
LST_UPD_USR	VARCHAR2(200)	Y		Last User Who Edited Data
LST_UPD_DT	DATE	Y		Date of Editing
SUB_ITEM_ANSWER1	CLOB	Y		Sub Answer CLOB

Name	Type	Columns	Enabled	Referencing Table	Referring Column	On delete	Deferrable	Deferred
PK_SGVA_SUB_ITEM_DTLS	Primary	LAQ_ID,SUB_ITEM_LA_Q_ID	Y	IWAS_AD MIN.SGVA _LAQ_DTL	LAQ_ID	No action	N	N
FK_LAQD_TL_SUBIT EMDTLS	Foreign	LAQ_ID	Y	IWAS_AD MIN.SGVC _LANG_M ST	LAQ_ID	No action	N	N
FK_SGVA_SUBITEM_DTLS_L	Foreign	LANG_ID	Y	IWAS_AD MIN.SGVC _LOC_MST	LANG_ID	No action	N	N
FK_SUBIT EMDTLS_LOC	Foreign	LOC_ID,LANG_ID	Y	IWAS_AD MIN.SGVC _LOC_MST	LOC_ID,LANG_ID	No action	N	N

SGVA_HOD_MST				
Name	Type	Nullable	Default Value	Description
HOD_ID	VARCHAR2(12)	N		HOD Id
DEPT_ID	VARCHAR2(9)	N		Department Id
HOD_NAME	NVARCHAR2(2000)	N		HOD Name
HOD_TYPE	VARCHAR2(20)	Y		HOD Type
LANG_ID	VARCHAR2(5)	N		Language Id
LOC_ID	VARCHAR2(5)	N		LocationId
CRT_DT	DATE	N		Date of Creation
CRT_USR	VARCHAR2(200)	N		Created User
LST_UPD_USR	VARCHAR2(200)	Y		Last User Who Edited Data
LST_UPD_DT	DATE	Y		Date of Editing
APPLICATION_ID	VARCHAR2(10)	Y		Application Id

SGVO_DEPT_MST				
Name	Type	Null able	Default Value	Description
DEPT_ID	VARCHAR2(12)	N		Department Id
DEPT_NAME	NVARCHAR2(200)	N		Department Name
DEPT_SHRT_NAME	NVARCHAR2(60)	N		Department Short Name
LANG_ID	VARCHAR2(5)	N		Language id
CRT_DT	DATE	N		Date of Creation
CRT_USR	VARCHAR2(12)	N		Created User
LST_UPD_USR	VARCHAR2(12)	Y		Last User Who Edited Data
LST_UPD_DT	DATE	Y		Date of Editing
LOC_ID	VARCHAR2(5)	N		Location Id
DEPT_TYPE	VARCHAR2(30)	Y		Department Type
PARENT_DEPT_ID	VARCHAR2(12)	Y		Parent Department Id
IDENTIFIER	VARCHAR2(6)	N		Identifier

SGVC_LANG_MST				
Name	Type	Nullable	Default Value	Description
LANG_ID	VARCHAR2(5)	N		Language Id
LANG_NAME	NVARCHAR2(80)	N		Language Name
LANG_LOCALE	VARCHAR2(40)	N		Language Locale
CRT_DT	DATE	N		Date of Creation
CRT_USR	VARCHAR2(12)	N		Created User
LST_UPD_USR	VARCHAR2(12)	Y		Last User Who Edited Data
LST_UPD_DT	DATE	Y		Date of Editing

SGVC_LOC_MST				
Name	Type	Nullable	Default Value	Description
LOC_ID	VARCHAR2(5)	N		Location Id
LOC_NAME	NVARCHAR2(80)	N		Location Name
CRT_DT	DATE	N		Date of Creation
CRT_USR	VARCHAR2(12)	N		Created User
LST_UPD_USR	VARCHAR2(12)	Y		Last User Who Edited Data
LST_UPD_DT	DATE	Y		Date of Editing
LANG_ID	VARCHAR2(5)	N		Language Id

## **6. IMPLEMENTATION PLANNING AND DETAILS**



## 6. IMPLEMENTATION PLANNING AND DETAILS

The right strategy for implementation of a huge system like MBAQA is very critical to make it successful over a period of time. The strategy should cover the people, processes, and the technology with broad view of the current status on these aspects in mind.

### 6.1 IMPLEMENTATION ENVIRONMENT

#### 6.1.1 Key Implementation Objectives

The implementation objectives are as follows

- *The customized version with duly incorporated Acceptance testing comments is installed in Client.*
- *Ensure smooth functioning of the installed software at Client.*
- *Train the selected end-users in the operations of MBAQA application system as per plan.*

With our experience of implementation at various sites of similar systems, we found that the skill levels on computers, Client processes varies on a wide range at various levels and also at the same level among officers. Also, the drive and motivation of the officer heading the particular department would really boost the implementation and ensure that the activities are completed on time and MBAQA rollout exercise is faster.

Hence, TCS proposes the following methodology for implementation.

- *Implement the MBAQA in phases with set of departments in each phase.*
- *Rollout the applications in a phased manner in these sets of departments*
- *Ensure that all the Users are trained in time to start working on the MBAQA*
- *Infrastructure is in place before the MBAQA is rolled out in these set of departments in a phased manner*

### Critical Success Factors

Successful MBAQA Implementation based on the above methodology is critically dependent on certain prerequisites, which are considered as critical success factors. This section outlines such prerequisites.

Sr. No.	Factor
1	Infrastructure (Servers, Network Components, Desktops, Scanners, Printers, etc.)
2	Identification of implementation team from CLIENT
3	Training of DPOs (Departmental Trainers) for training the departmental users
4	Procurement of System Software licenses
5	Training of officers
6	Extraction of Data and entry into masters
7	Digitization of Acts, Rules, Statutes, G.O.'s, etc and their verification for correctness and completeness
8	Providing the inputs for Gap Analysis study to TCS
9	Availability of additional servers for maintenance activities for sometime

*Table 6.1.1 Prerequisites*

Each of these critical success factors is taken as inputs for identifying the requirements for implementation and is discussed in detail in the further sections of this document.

**6.1.2 Implementation Plan**

The phases/activities prior to and during implementation, like startup, site preparation, infrastructure procurement, installation of servers, installation of system software, Customization and Installation of MBAQA software are explained in the above sections.

<b>Phase/Activity</b>
Startup - Team Building
Startup - Site Preparation - Infrastructure Study and Gap Analysis for MBAQA Data Center
Gap Analysis Study - Core & Common Applications
Customization - Core Applications
Implementation – Preparation
Procurement
Installation
Implementation - Core Applications - Set I - 10 Modules
Implementation - Core Applications - Set II - 15 Modules
Customization - Common Applications
Implementation - Common Applications - Set I Modules
Implementation - Common Applications - Set II Modules
Study/Customization/Development - Departmental Applications
Implementation - Departmental Applications
Warranty Support
Post Implementation Support

*Table 6.1.2 Phase / Activity*

## 6.2 SECURITY FEATURES

Any infrastructure/application development for the web should adhere to the Security Policy detailed by the organization. It is assumed that Client has a detailed Security policy for protecting its resources and information. What follows is a “common” approach for protecting the resources and information when a web application is published in the web.

### 6.2.1 Security Layers

TCS proposes an MBAQA solution that has the capability to minimize security risks by deploying multiple layers of security controls

- ✓ Application Security
- ✓ Database Security
- ✓ Network - Data Transfer Security
- ✓ External Security: Firewall and Antivirus

#### 6.2.1.1 Application Security

Single sign-on provides users with a *single point of entry* to all authorized applications with a *single authentication* or login process. Application Server Security includes

**a) Identification:** System supports User identification with LDAP Server, which is a secure repository for Identification & authorization information. Each user of the system will be given a unique username / employee identification number.

**b) Authentication:** System supports strong user Authentication with LDAP Server. Server Password-based authentication will support Password-based schemes, to be secure, must facilitate change of passwords regularly, sufficient complexity and cannot be easily guessed. LDAP built-in robust password management enables administrators to enforce various password checks.

**Digital Certificate/ Signing-based Authentication (optional):**

System can be made secure further by certificate-based authentication using X.509 V3 digital certificates. A digital certificate is an electronic means of establishing user credentials when accessing system. It contains user name, a serial number, expiration dates, a copy of the certificate holder's public key (used for encrypting and decrypting messages and digital signatures), and the digital signature of the certificate-issuing authority so that a system can verify that the certificate is real.

**c) Authorization:** User Authorization in the system is implemented as access control. Access control deals with the concept of who has access to what information and what type of operations can be accessed. System provides a strong set of access control security mechanisms through privileges. Application enforces the *Principle of Least Privilege* - that is, granting only those privileges to a user that allows him to perform his job functions, but no more. This ensures that the users will only be able to access files and data that they are privileged to. The access control Module in system is defined for creation, opening and editing of objects/data and by route – users not in the route of a file will not be able to access the file.

**d) Data Confidentiality:** Encryption is the mechanism that is used to provide data confidentiality. Required data can be encrypted and sent through SSL (Secure Socket Layer). SSL can be enabled for accessing the applications through Internet.

**e) Data integrity:** System maintains the Data Integrity by detecting whether, either stored or being transmitted has been accidentally or maliciously altered. As an Option, the data on the form can be “digitally signed” using TCS PKI enabling tool called FormSigner™, which ensure data integrity and non-repudiation. This digital signature is in the PKCS#7 formats as defined in the IT Act, 2000 and is legally valid.

**f) Non-repudiation:** Non-repudiation is data integrity and entity authentication provable to the user. It is achieved by the system by associating the user identity with Audit of crucial operations performed. Further non-repudiation is achievable when digital certificate is used for digitally signing coupled with the appropriate policies and procedures. As an Option, the data on the form can be “digitally signed” using

TCS PKI enabling tool called FormSigner™, which ensure data integrity and non-repudiation. This digital signature is in the PKCS#7 formats as defined in the IT Act, 2000 and is legally valid.

**g) Audit:** A critical aspect of any system security policy is the monitoring and recording of activities within that system i.e., “auditing”. To address this requirement, System provides a number of features and functions to enable accountability of actions taken by users of the database. System does this by providing accounting and auditing features, which are designed to be as granular and flexible as possible to ensure that exactly what needs to be accounted and audited, as dictated by the application or system security policy, is recorded. This helps to ensure that the size of audit trail remains manageable and the important records are easily accessible. Application also provides capabilities to permit accounting and auditing plans to be quickly enabled to implement crisis plans.

#### **6.2.1.2 Database Security**

**Server-Enforced, Row Level Access Control** - The system will be the using RDBMS Databases. These databases will be deployed on the database server and database access checks will be defined at the system level. No direct access is granted to RDBMS Databases, all access to these databases is via applications and hence governed by Access controls.

**Comprehensive Auditing** - To spot and respond to security breaches, fine-grained, extensible auditing is an important aspect. For example, if a user abuses access privileges and performs abnormal actions such as repeatedly trying to login, an alert is automatically sent to the administrator.

**Audit Trail:** The audit trail will be maintained for the following:

- Date/Time stamp for all logins
- Date/Time stamp for all database access, new inserts, updates and deletions
- Date/Time stamp on access of important files, attempt on such accesses
- Audit trail for the data access

### 6.2.1.3 Network - Data Transfer Security

In view of the threat of cyber attacks TCS proposes the below options to implement the network security through the software installed on the firewall.

However, this is part of the Network architecture and out of scope of current proposal.

**Encryption of All Data in Transmission** - encrypts data traveling over the network everywhere.

- Browser to application server
- Application server to database
- Server to server

Selective database encryption feature, sensitive data becomes unreadable over the network.

The connection from browser to application server is protected through HTTPS's Secure Socket layer with data encryption and encapsulation. In addition to strong user authentication, SSL also provides network data confidentiality and data integrity for multiple types of connections: LDAP (Lightweight Directory Access Protocol), IIOP (Internet Intra-ORB Protocol), and Net (formerly known as Net8).

The data traffic can further be secured through the use of Internet Firewall and Proxy Servers. Intrusion detection software will be used for analyzing the network traffic and warning possible breach to the security of the system. Firewall will be implemented for preventing un-authorized users to logon through the Internet.

### 6.2.1.4 External Security

In order to have a comprehensive secure environment TCS recommends the use of Firewalls and anti virus kits in the data center. The detailed requirements for the same can be arrived in consultation with the technical team of CLIENT during "Site Preparation and Infrastructure Study" phase.

**Firewalls:** TCS proposes the use of a firewall that provides required protection for the Client from internet traffic. Its architecture and functionality should combine to secure organizations networks, delivering full-featured security and ensuing complete control of information entering and leaving the Client network.

**Anti-Virus Kits:** All the Application servers, database servers and the Web-servers should have the latest anti-virus kits to detect new viruses. These anti-virus kits will be updated with the latest versions frequently.

#### **6.2.1.5 Security Policy and Audit**

Client needs to define security policy for their IT solutions. Security audit needs to be conducted for conformance with the defined IT Security Policy. However defining the security policy for the Client or conducting audits is out of the scope of current proposal.

If the security policy is defined and available during system study, the same will be incorporated into the security design of the system. However, the overall MBAQA related security aspects are discussed in the previous sub-sections of this Section.

Note: - The above section describes the methodology of securing the application at various levels by deploying additional software / hardware components. The proposed application architecture of the system is based on the open standards and is capable to incorporate the above modes of security.

### 6.3 CODING STANDARDS

#### Objects

The below are the naming convention for the design element used in the form.

Control Type	Prefix	Example
Text Filed	txt	txt_ProjectName
Check Box	chk	chk_StudentProfessor
Radio Button	rad	rad_Gender
List Box	lst	lst_YesNo
Combo Box	cmb	cmb_Industry
Rich Text Field	rt	rt_Body
Number Field	num	num_TeamSize
Time	tm	tm_StartTime
Date	dt	dt_EndDate
Date & Time	dtm	dtm_Now
Authors	ats	ats_fileowner
Names	dms	nms_selectedperson
Readers	rds	rds_reviewers
Password	pwd	pwd_Useri
Formula	frl	frl_CurrentDate
Rich Text Lite	rtl	rtl_Nothings
Time Zone	tz	tz_India
Color	col	col_Fileinfo

All Hidden Fields should be place one after the other to reserve the space in the form. Description & purpose of each hidden field should be documented in the design spec of the appropriate components.

## Variables

<prefix>\_<meaningful name>

prefix : 2 character code.

First alphabet represents the scope of the variable

l - Local

g - Global

Second alphabet represents the type

b - Boolean

c - Currency

s - String

f - Float

i - Integer

l - Long

t - Time

a - Array

v - Variant

The body of the variable names and function names should use mixed case and should be as long as needed to describe their purpose. To keep the name length reasonable, abbreviations can be used for standard terms like Init for initialization, Tbl for table, Cnt for count, Grp for Group etc. Wherever abbreviations are used, try to use them consistently to improve readability.

Recommended Maximum Length for variable names is 32 characters.

Example:

For declaring a global string variable for Group name: gs\_GrpName.

When passing values to a subroutine/function, use the same variable names in the called routine as in the calling routine.

For Functions and Subroutines

<prefix>\_<meaningful name>

For Functions: prefix is fn

**Comments and description of functions, Script etc -**

All code -should be well commented (Date, Developer etc). All procedures and functions should begin with a comment to explain what the function/procedure performs. A brief synopsis is sufficient.

The below is the Comment template for procedure and function:

```

*****
‘Purpose      : This function performs so on operation.
‘Input       : Input if any
‘Output      : Output if any
‘Limitation:
‘Developer Name:
‘Date       :
*****

```

Ex:

```

*****
‘Purpose      : This function sends a mail with the doc link attached.
‘Input       : Input for this function is the person name to whom it has to be send
‘Output      : This function will return a true If the mail is sent else false
‘Limitation  : This function will not send a internet mail.
‘Developer Name: Mr. Joe
‘Date       : 16th Apr '2007
*****

```

If the some code is function is modified. Then that section of the code should be mark with comments indicating why the change was made, by whom, when. Format for Change history is:

```

*****
‘Change Requested
‘By whom:
‘When   :

```

'Why :

'Developer:

\*\*\*\*\*

Ex:

\*\*\*\*\*

'Change Requested

'By whom: Mr. Smith

'When : 20th Apr '2007

'Why : Instead of doc link, main document should be opened

'Developer: Mr. Joe

\*\*\*\*\*

**Class**

The name of the Class should start with a capital letter and must be a meaningful name that represents the functionality of the class. Header information is mandatory for all the java class. This information gives a detailed description about the change history and the creator of the class. Below format shows the structure of the class.

```

/*
 * PACKAGE      : <package name>
 * FILENAME     : <filename>. java
 * @VERSION    : 1.0
 * @AUTHOR     :
 * DATE        :
 *
 * REV. HISTORY :
 *-----
 *  DATE          AUTHOR          DESCRIPTION
 *
 *
 *-----
 */
    
```

Immediately following this header would be the package declaration with a comment as a header. The name of the package differs with respect to each class. For e.g.,

```
/* PACKAGE DECLARATION */  
package com.tcs;
```

The required module related class files that are imported, to be placed after packages have been declared. For e.g.,

```
/* IMPORTED <module name> CLASSES */  
import com.tcs. <module name>.ABC;
```

The required java package classes will follow after the module level class imports (if applicable). For e.g.,

```
/* IMPORTED JAVA CLASSES */  
import java.util.Calendar;  
import java.util.ArrayList;
```

The required javax package classes will follow after the java class imports (if applicable). For e.g.,

```
/* IMPORTED JAVAX CLASSES */  
import javax.xml.parsers.DocumentBuilder;
```

The required org package classes will follow after the javax class imports (if applicable). For e.g.,

```
/* IMPORTED ORG CLASSES */  
import org.w3c.dom.Document;
```

Then comes the description about the class and the comments written at various levels in the class.

```
/**
 * DESCRIPTION ABOUT THE CLASS
 */

public class Abc
{

    // Single line description about the variable
    public String strA = "";

    // Single line description about the table
    Hashtable abcList = null;
    /**
     * DESCRIPTION ABOUT THE METHOD.
     * @param <parameter name> <parameter description>
     * @return <description about what the method returns>
     * @exception <list of exceptions that the method throws (if any)>
     */
    public void method1(String abc)
    {

    } //end of method1

}
```

## JSP Format

Every JSP would start with a common header.

```
<!--  
/*  
 * FILENAME      : <filename>.jsp  
 * VERSION       : 1.0  
 * AUTHOR        :  
 * DATE          :  
 * REV. HISTORY :  
 *  
 * Description about the jsp  
 */  
-->
```

Next follows the various classes imported in the JSP. For e.g.,

```
<%-- IMPORTED JAVA CLASSES --%>  
<% @ page language="java" import="com.tcs.ABC,  
                                     java.util.ResourceBundle"%>
```

Next follows the various beans used in the JSP. For e.g.,

```
<%-- BEANS USED --%>  
<jsp:useBean id="abc" class="com.tcs.ABCD" scope=""/>
```

Other standards that need to be followed are specified below. This template shows the sequence in which the specific content resides in a JSP.

```
<html>  
<head>  
<title>Sample JSP</title>  
<LINK rel="STYLESHEET" type="text/css" href="/abc/sample.css">  
<META http-equiv="Content-Style-Type" content="text/css">
```

```
</head>
<script language="javascript">
function sample()
{
}
</script>
<body>
<form name="" method="post" action="">
<center>
<%
    VARIABLE DECLARATIONS

    request.getParameters() --> if applicable

    BUSINESS LOGIC

    AFTER EVERY 5 LINES OF CODING ADD AN EMPTY LINE FOR CLARITY
%>
<!-- HIDDEN VARIABLES -->
<input type="hidden" name="" value="">
<input type="hidden" name="" value="">
</center>
</form>
</body>
</html>
```

## 7. TESTING



## 7. TESTING

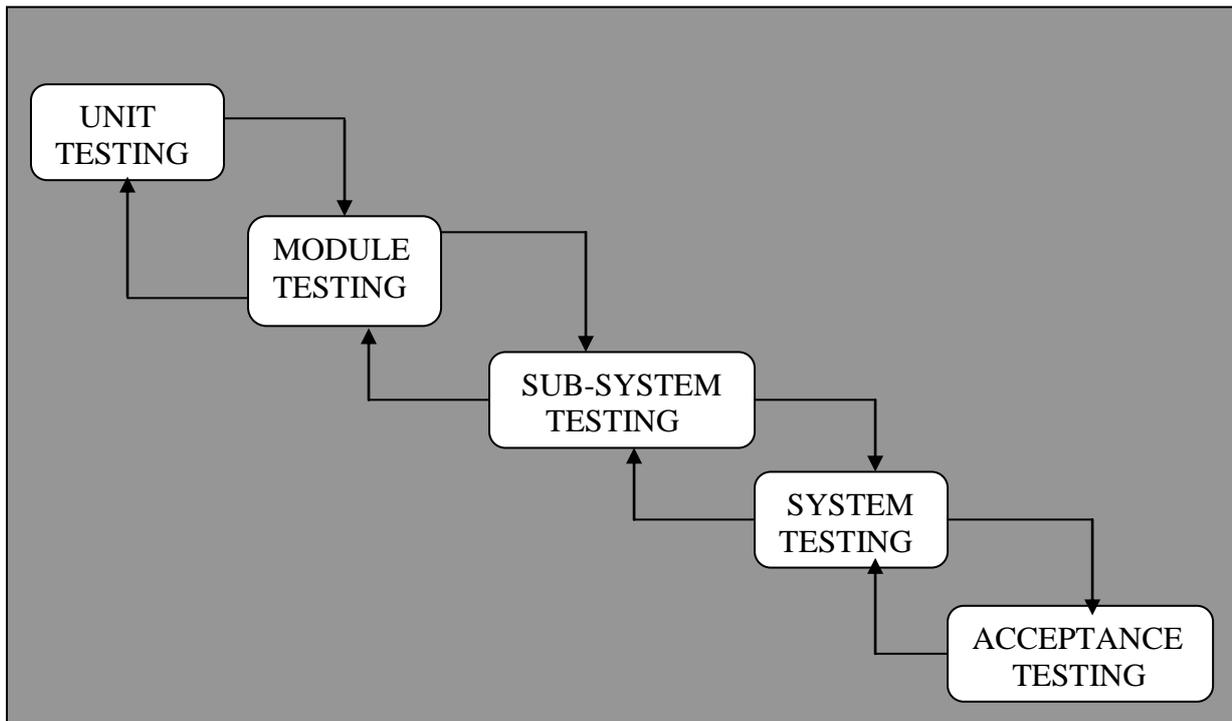
Testing is the process carried out on software to detect the differences between its behavior and the desired behavior as stipulated by the requirements specifications.

Testing is advantageous in several ways. Firstly, the defects found help in the process of making the software reliable. Secondly, even if the defects found are not corrected, testing gives an idea as to how reliable the software is. Thirdly, over time, the record of defects found reveals the most common kinds of defects, which can be used for developing appropriate preventive measures such as training, proper design and reviewing.

### 7.1 TESTING PLAN

The testing sub-process includes the following activities in a phase dependent manner:

- a) Create Test Plans.
- b) Create Test Specifications.
- c) Review Test Plans and Test Specifications.
- d) Conduct tests according to the Test Specifications, and log the defects.
- e) Fix defects, if any.
- f) When defects are fixed continue from activity.



**Fig : 7.1 Testing Sub-Process**

## 7.2 TESTING STRATEGY

The development process repeats this testing sub-process a number of times for the following phases.

- a) Unit Testing.
- b) Integration Testing

Unit Testing tests a unit of code (module or program) after coding of that unit is completed. Integration Testing tests whether the various programs that make up a system, interface with each other as desired, fit together and whether the interfaces between the programs are correct. System Testing ensures that the system meets its stated design specifications. Acceptance Testing is testing by the users to ascertain whether the system developed is a correct implementation of the Software Requirements Specification.

Testing is carried out in such a hierarchical manner to ensure that each component is correct and the assembly/combination of components is correct. Merely testing a whole system at

the end would most likely throw up errors in components that would be very costly to trace and fix.

We have performed both Unit Testing and System Testing on WIMS to detect and fix errors. A brief description of both is given below.

### **7.2.1 Unit Testing**

#### **Objective**

The objective of Unit Testing is to test a unit of code (program or set of programs) using the Unit Test Specifications, after coding is completed. Since the testing will depend on the completeness and correctness of test specifications, it is important to subject these to quality and verification reviews.

**Input:** Unit Test Specifications

#### **Testing Process**

- Checking for availability of Code Walk-thru reports which have documented the existence of and conformance to coding standards.
- Review of Unit Test Specifications

Verify the Unit Test Specifications conform to the program specifications.

Verify that all boundary and null data conditions are included.

## 7.3 TESTING METHODS

### Black-box and White-box Testing

In black-box testing a software item is viewed as a black box, without knowledge of its internal structure or behavior. Possible input conditions, based on the specifications (and possible sequences of input conditions), are presented as test cases.

In white-box testing knowledge of internal structure and logic is exploited. Test cases are presented such that possible paths of control flow through the software item are traced. Hence more defects than black-box testing are likely to be found.

The disadvantages are that exhaustive path testing is infeasible and the logic might not conform to specification. Instrumentation techniques can be used to determine the structural system coverage in white box testing. For this purpose tools or compilers that can insert test probes into the programs can be used.

### Code Coverage

The way to make sure that you have got all the control flow covered is to cover all the paths in the program during the testing (via white-box testing). This implies that both branches are exercised for an 'if' statement, all branches are exercised for a case statement, the loop is taken once or multiple times as well as ignored for a while statement, and all components of complicated logical expressions are exercised. This is called Path Testing. Branch Testing reports whether entire Boolean expression tested in control structures evaluated to both true and false.

Additionally it includes coverage of switch statement cases, exception handlers and interrupts handlers. Path testing includes branch testing as it considers all possible combination of individual branch conditions. A simpler version is Statement Testing which determines if each statement in the program has been executed at least once. The coverage via Path Testing includes the coverage via Statement Testing. Since Path Testing is extremely comprehensive it is costly, hence a viable minimum should be measuring Statement Testing coverage.

### 7.4 TEST CASES

Project Name	Medical Bill and Assembly Question Application		
Test Spec Id	SYS001	Version No.	1.0
Test Item	Application for Medical Bill		
Environment	Windows Vista Enterprise Edition		
Prepared By	Mr. Bijendra Singh	Prepared Date	08/04/2008
Spec Reviewed By	Darshan Karia Ketan Kotak	Review Date	13/04/2008
Spec Review Passed	Yes		

Medical Reimbursement Details			
Function	Test Condition	Expected Result	Pass/Fail
MBR	Employee Details	It should be non editable and it should be populated from its login details only	Pass
	Applying date	The user will have to choose a date from the calendar. This Field is Mandatory	Pass
	Dependent Name	The user will have to choose a name from combolist. This Field is Mandatory	Pass
	Relation	If Dependent not available in the list then user will have to choose from combolist. This Field is Mandatory	Pass
Medical Reimbursement Details	Name	If Dependent not available in the list then user will have to write his/her Name. This Field is Mandatory	Pass
	Dependent's Age	If Dependent not available in the list then user will have to write his/her age. This Field is Mandatory	Pass
	Name	Name should not contain numbers or special characters	Pass
	Dependent's Age	Age should not contain alphabaticals or special characters	Pass
	Treatment Type	The user will have to choose a Treatment Type from combolist. This Field is Mandatory	Pass
Medical Details	Ailment	The user will have to choose a Ailment Type from combolist. This Field is Mandatory	Pass
	Delivery	The user will have to choose mode	Pass

		of payment from radiobutton. This Field is Mandatory	
	Treatment Start Date	The user will have to choose a date from the calendar. This Field is Mandatory	Pass
	Treatment End Date	The user will have to choose a date from the calendar. This Field is Mandatory	Pass
	Hospital Type	The user will have to choose a name from combolist. This Field is Mandatory	Pass
	Hospital Name	The user will have to choose a name from combolist. This Field is Mandatory	Pass
Bill Details	Admissible Amount	The user will have to write Admissible Amount in numerical form. This Field is Mandatory	Pass
Medicine Details	Medicine Name	The user will have to write Medicine Name. This Field is Mandatory	Pass
	Medicine Type	The user will have to write Medicine Type. This Field is Mandatory	Pass
	Medicine Amounts in Rs.	The user will have to write Medicine Amount. This Field is Mandatory	Pass
	Medicine Amounts in Rs.	The user will have to write Medicine Amount in numerical form only. It should not contain alphabaticals or special characters	Pass
Submit Event Details	Calculate Button Formula	Admissible amt = miscellaneous amt + total medicine amount - not admissible amt - medical allowance. It should not be less than 0	
After Submission	on next login	Next Higher officer should not edit any field except Sanctioned Amt and Remarks	Pass

## 8. SCREEN SHOTS





## *MEDICAL BILL REIMBURSEMENT*



Office Procedures > Employee Pay / Medical > Medical Reimbursement

---

**Employee Details**

Login Name	: IASGUJ353	Name	: G C Murmu
Designation	: Secretary	Department	: Home Department
Section	: SECY	Basic Salary	: 20900.0
Contact Address	: <input type="text" value="Secretariat"/>	Med. Allowance (in Rs.)	: <input type="text"/>
Spouse Govt. Employee	: <input checked="" type="radio"/> Yes <input type="radio"/> No	Physically Handicapped	: <input type="radio"/> Yes <input checked="" type="radio"/> No

---

**Medical Reimbursement Details**

Applying date *	: <input type="text"/>	Advance Amts (in Rs.)	: <input type="text"/>
<input checked="" type="radio"/> Dependent Name *	: <input type="text" value="-----Select-----"/>	Dependent's Age	: <input type="text"/>
Dependent's Relation	:	Treatment Type *	: <input type="text" value="-----Select-----"/>
<input type="radio"/> <i>Dependent not available in the list</i>			
Relation*	: <input type="text" value="--Select--"/>	Name*	: <input type="text"/>
Dependent's Age*	: <input type="text"/>	Medical Bills	: <input type="text" value="Browse..."/>
Referral Letter	: <input type="text" value="Browse..."/>	Order Date	: <input type="text"/>
Order No.	: <input type="text"/>		

---

**Medical Details**

Ailment *	: <input type="text" value="-----Select-----"/>	Delivery *	: <input type="radio"/> Cash <input checked="" type="radio"/> Cheque
Additional allowance(in Rs.)	: <input type="text"/>	Treatment End Date *	: <input type="text"/>
Treatment Start Date *	: <input type="text"/>	Hospital Name *	: <input type="text" value="-----Select-----"/>
Hospital Type*	: <input type="text" value="-----Select-----"/>	Room Type	: <input type="radio"/> Special <input checked="" type="radio"/> General
Reason	: <input type="text"/>		

---

**Agreement Details**

I/My dependent had taken medical treatment in Ayurvedic Hospital during the period given in the form.  
 I Agree  I Disagree

I hereby declare that the statements in the application are true to the best of my knowledge and belief and that the person for whom medical expenses were incurred is wholly dependent upon me.  
 I Agree  I Disagree

I have given an option to accept Medical Allowance.  
 I Agree  I Disagree

I/My dependent had taken medical treatment in Hospital during the period given in the form.  
 I Agree  I Disagree

Medical Reimbursement Details			
Applying date *	: <input type="text"/>	Advance Amts (in Rs.)	: <input type="text"/>
<input checked="" type="radio"/> Dependent Name *	: <input type="text" value="-----Select-----"/>	Dependent's Age	: <input type="text"/>
Dependent's Relation	:	Treatment Type *	: <input type="text" value="-----Select-----"/>
<input type="radio"/> <i>Dependent not available in the list</i>			
Relation*	: <input type="text" value="--Select--"/>	Name*	: <input type="text"/>
Dependent's Age*	: <input type="text"/>	Medical Bills	: <input type="text" value="Browse..."/>
Referral Letter	: <input type="text" value="Browse..."/>	Order Date	: <input type="text"/>
Order No.	: <input type="text"/>		
Medical Details			
Ailment *	: <input type="text" value="-----Select-----"/>	Delivery *	: <input type="radio"/> Cash <input checked="" type="radio"/> Cheque
Additional allowance(in Rs.)	: <input type="text"/>	Treatment End Date *	: <input type="text"/>
Treatment Start Date *	: <input type="text"/>	Hospital Name *	: <input type="text" value="-----Select-----"/>
Hospital Type*	: <input type="text" value="-----Select-----"/>	Room Type	: <input type="radio"/> Special <input checked="" type="radio"/> General
Reason	: <input type="text"/>		
Agreement Details			
I/My dependent had taken medical treatment in Ayurvedic Hospital during the period given in the form.			
<input type="radio"/> I Agree <input checked="" type="radio"/> I Disagree			
I hereby declare that the statements in the application are true to the best of my knowledge and belief and that the person for whom medical expenses were incurred is wholly dependent upon me.			
<input type="radio"/> I Agree <input checked="" type="radio"/> I Disagree			
I have given an option to accept Medical Allowance.			
<input type="radio"/> I Agree <input checked="" type="radio"/> I Disagree			
I/My dependent had taken medical treatment in Hospital during the period given in the form.			
<input type="radio"/> I Agree <input checked="" type="radio"/> I Disagree			
Bill Details			
Miscellaneous Amt.	: <input type="text"/>	Room Charges	: <input type="text"/>
Not Admissible Amt.	: <input type="text"/>	Admissible Amt. (in Rs.) *	: <input type="text"/>
<b>Medicine Total: 0.0</b>			
Bank Name	: <input type="text"/>		
Show Medicine Details		Calculate Admissible Amt.	: <input type="button" value="Calculate"/>
<input type="button" value="Sign &amp; Submit"/> <input type="button" value="Close"/>			

The screenshot shows a web browser window with the URL `http://localhost:8988/IWAS/FrontServlet?requestType=MedicineDetails&flag=showMedicineTrPage&Sub`. The page title is "Office Procedures > Employee Pay / Medical > Medical Reimbursement > Medicine Details".

Form fields:

- Medicine Name \* : Paracetamol
- Medicine Type \* : Analgesic
- Medicine Amounts in Rs. \* : 20

Buttons: Add, Edit, Delete, Save

S.No	Medicine Name	Medicine Type	Medicine Amounts in Rs.
<i>Medicine Total:-</i>			0.0

Buttons: Submit, Close

The screenshot shows a web browser window with the URL `http://localhost:8988/IWAS/FrontServlet?requestType=MedicineDetails&flag=MedicineTransaction&mo`. The page title is "Office Procedures > Employee Pay / Medical > Medical Reimbursement > Medicine Details".

There are three input fields with asterisks indicating they are required:

- Medicine Name \* :
- Medicine Type \* :
- Medicine Amounts in Rs. \* :

Below the input fields are four buttons: Add, Edit, Delete, and Save.

S.No	Medicine Name	Medicine Type	Medicine Amounts in Rs.
<input type="checkbox"/>	1	Paracetamol	Analgesic
<b>Medicine Total:-</b>			<b>20.0</b>

At the bottom of the table area are two buttons: Submit and Close.

<input checked="" type="radio"/> Dependent Name *	: Ramesh Patel	Dependent's Age	: 34
Dependent's Relation	: Self	Treatment Type *	: Indoor
<input type="radio"/> <i>Dependent not available in the list</i>			
Relation*	: --Select--	Name*	:
Dependent's Age*	:	Medical Bills	: Browse...
Referral Letter	: Browse...	Order Date	:
Order No.	:		
Medical Details			
Ailment *	: HeartDisease	Delivery *	: <input checked="" type="radio"/> Cash <input type="radio"/> Cheque
Additional allowance(in Rs.)	: 100		
Treatment Start Date *	: 21/03/2008	Treatment End Date *	: 26/03/2008
Hospital Type*	: Private	Hospital Name *	: -----Select-----
Reason	: Reason	Room Type	: <input checked="" type="radio"/> Special <input type="radio"/> General
Agreement Details			
I/My dependent had taken medical treatment in Ayurvedic Hospital during the period given in the form.			
<input type="radio"/> I Agree <input checked="" type="radio"/> I Disagree			
I hereby declare that the statements in the application are true to the best of my knowledge and belief and that the person for whom medical expenses were incurred is wholly dependent upon me.			
<input checked="" type="radio"/> I Agree <input type="radio"/> I Disagree			
I have given an option to accept Medical Allowance.			
<input type="radio"/> I Agree <input checked="" type="radio"/> I Disagree			
I/My dependent had taken medical treatment in Hospital during the period given in the form.			
<input checked="" type="radio"/> I Agree <input type="radio"/> I Disagree			
Bill Details			
Miscellaneous Amt.	: 400	Room Charges	: 123
Not Admissible Amt.	: 100	Admissible Amt. (in Rs.) *	: 220
<b>Medicine Total: 0.0</b>			
Bank Name	: ICICI		
<a href="#">Show Medicine Details</a>		Calculate Admissible Amt.	: <a href="#">Calculate</a>
<a href="#">Sign &amp; Submit</a>		<a href="#">Close</a>	

Office Procedures > Employee Pay / Medical > Medical Reimbursement

---

**Employee Details**

Login Name	: TCS_S01	Name	: TCS User4
Designation	: Section Officer	Department	: TCS Test Department
Section	: A	Basic Salary	: 8000.0
Contact Address	: Secretariat	Med. Allowance (in Rs.)	: 100
Spouse Govt. Employee	: <input checked="" type="radio"/> Yes <input type="radio"/> No	Physically Handicapped	: <input checked="" type="radio"/> Yes <input type="radio"/> No

---

**Medical Reimbursement Details**

Applying date *	: 20/03/2008	Advance Amt (in Rs.)	: 123
<input type="radio"/> Dependent Name *	: -----Select-----	Dependent's Age	:
Dependent's Relation	:	Treatment Type *	: Indoor
<input checked="" type="radio"/> <b>Dependent not available in the list</b>			
Relation*	: Son	Name*	: ABC
Dependent's Age*	: 16	Medical Bills	: Browse...
Referral Letter	: Browse...	Order Date	:
Order No.	: 1		

---

**Medical Details**

Ailment *	: HeartDisease	Delivery *	: <input checked="" type="radio"/> Cash <input type="radio"/> Cheque
Additional allowance(in Rs.)	: 100		
Treatment Start Date *	: 21/03/2008	Treatment End Date *	: 26/03/2008
Hospital Type*	: Private	Hospital Name *	: -----Select-----
Reason	: Reason	Room Type	: <input checked="" type="radio"/> Special <input type="radio"/> General

---

**Agreement Details**

I/My dependent had taken medical treatment in Ayurvedic Hospital during the period given in the form.  
 I Agree  I Disagree

I hereby declare that the statements in the application are true to the best of my knowledge and belief and that the person for whom medical expenses were incurred is wholly dependent upon me.  
 I Agree  I Disagree

I have given an option to accept Medical Allowance.  
 I Agree  I Disagree

I/My dependent had taken medical treatment in Hospital during the period given in the form.  
 I Agree  I Disagree

Your Medical Reimbursement Details request with file number  
2008/21368/A has been sent to TCS User5 for approval

OK

WorkList > Files Missed Due Date List ● Reminder ●

1-25 of 270 Search:  in File Number

Description	Subject	File Number	Doc Type	From	Rcvd Date	Dept	Priority
<input type="checkbox"/> Medical Reimbursement	Medical Reimbursement	<a href="#">2008/21368/A</a>	File	TCS User4, SO	20/03/2008	TCS	Routine
<input type="checkbox"/> Medical Reimbursement	Medical Reimbursement	<a href="#">2008/21358/A</a>	File	TCS User4, SO	19/03/2008	TCS	Routine
<input type="checkbox"/> Medical Reimbursement	Medical Reimbursement	<a href="#">2008/21354/A</a>	File	TCS User4, SO	18/03/2008	TCS	Routine
<input type="checkbox"/> A new file CSH/10/2008/21310/A has come in your Seen (Approved/Not Approved) Files	Travel Reimbursement	<a href="#">CSH/10/2008/21310/A</a>	Intimation	TCS User7, DS	14/03/2008	TCS	Routine
<input type="checkbox"/> A new file CSH/10/2008/21307/B has come in your Seen (Approved/Not Approved) Files	Travel Reimbursement	<a href="#">CSH/10/2008/21307/B</a>	Intimation	TCS User6, US	14/03/2008	TCS	Routine
<input type="checkbox"/> A new file CSH/10/2008/21308/US has come in your Seen (Approved/Not Approved) Files	Travel Reimbursement	<a href="#">CSH/10/2008/21308/US</a>	Intimation	TCS User7, DS	14/03/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21274/A has come in your Seen (Approved/Not Approved) Files	Medical Reimbursement	<a href="#">2008/21274/A</a>	Intimation	TCS User7, DS	08/03/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21276/A has come in your Seen (Approved/Not Approved) Files	Medical Reimbursement	<a href="#">2008/21276/A</a>	Intimation	TCS User7, DS	08/03/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21275/A has come in your Seen (Approved/Not Approved) Files	Medical Reimbursement	<a href="#">2008/21275/A</a>	Intimation	TCS User7, DS	08/03/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21233/A has come in your Seen (Approved/Not Approved) Files	Payment of Bill - Telephone Bill	<a href="#">2008/21233/A</a>	Intimation	TCS User7, DS	29/02/2008	TCS	Routine
<input type="checkbox"/> Medical Reimbursement	Medical Reimbursement	<a href="#">2008/21192/US</a>	File	TCS User6, US	25/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21136/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21136/A</a>	Intimation	TCS User7, DS	14/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21135/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21135/A</a>	Intimation	TCS User7, DS	14/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21134/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21134/A</a>	Intimation	TCS User7, DS	14/02/2008	TCS	Routine
<input type="checkbox"/> Audit Para/PAC Reply File of Para No.	Audit Paras - Reply	<a href="#">21107/CH/TCS/2008</a>	File	TCS User5, SO	11/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21095/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21095/A</a>	Intimation	TCS User7, DS	11/02/2008	TCS	Routine
<input type="checkbox"/> Telephone Bill	Payment of Bill - Telephone Bill	<a href="#">2008/21076/A</a>	File	TCS User4, SO	09/02/2008	TCS	Routine
<input type="checkbox"/> Miscellaneous Bill	Miscellaneous Bill	<a href="#">2008/21075/A</a>	File	TCS User4, SO	09/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21068/A has come in your Seen (Approved/Not Approved) Files	Payment of Bill - Telephone Bill	<a href="#">2008/21068/A</a>	Intimation	SYS Admin, Secy	09/02/2008	TCS	Routine
<input type="checkbox"/> A new file CSH/10/2008/21066/A has come in your Seen (Approved/Not Approved) Files	Travel Reimbursement	<a href="#">CSH/10/2008/21066/A</a>	Intimation	TCS User7, DS	09/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21070/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21070/A</a>	Intimation	TCS User7, DS	09/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21073/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21073/A</a>	Intimation	TCS User7, DS	09/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21071/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21071/A</a>	Intimation	SYS Admin, Secy	09/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21072/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21072/A</a>	Intimation	TCS User7, DS	09/02/2008	TCS	Routine
<input type="checkbox"/> A new file 2008/21069/A has come in your Seen (Approved/Not Approved) Files	Miscellaneous Bill	<a href="#">2008/21069/A</a>	Intimation	TCS User7, DS	09/02/2008	TCS	Routine

1-25 of 270

Legends : ■ New File ■ Physical File ■ Other Files ■ Previously Seen Files

Office Procedures > Employee Pay / Medical > Medical Reimbursement

**Verify**

---

**Employee Details**

Login Name	: TCS_S01	Name	: TCS User4
Designation	: Section Officer	Department	: TCS Test Department
Section	: A	Basic Salary	: 8000.0
Contact Address	: <input type="text" value="Secretariat"/>	Med. Allowance (in Rs.)	: 100
Spouse Govt. Employee	: No	Physically Handicapped	: No

---

**Medical Reimbursement Details**

Applying date *	: 20/03/2008	Advance Amts (in Rs.)	: 123
Dependent Name *	: ABC	Dependent's Age*	: 16
Dependent's Relation*	: SON	Treatment Type *	: Indoor
Referral Letter	:	Medical Bills	:
Order No.	: 1	Order Date	: 19/03/2008

---

**Medical Details**

Ailment *	: HeartDisease	Delivery *	: Cash
Additional allowance(in Rs.)	: 100.0	Treatment End Date	: 26/03/2008
Treatment Start Date *	: 21/03/2008	Hospital Name *	: Sal Hospital
Hospital Type	: Private	Room Type	: Special
Reason	: <input type="text" value="Reason"/>		

---

**Agreement Details**

I/My dependent had taken medical treatment in Ayurvedic Hospital during the period given in the form.  
 I Agree  I Disagree

I hereby declare that the statements in the application are true to the best of my knowledge and belief and that the person for whom medical expenses were incurred is wholly dependent upon me.  
 I Agree  I Disagree

I have given an option to accept Medical Allowance.  
 I Agree  I Disagree

I/My dependent had taken medical treatment in Hospital during the period given in the form.  
 I Agree  I Disagree

---

**Bill Details**

Miscellaneous Amt.	: 400	Room Charges	: 123
Not Admissible Amt.	: 100	Admissible Amt. (in Rs.)	: 220
Bank Name	: ICICI		
<b>Medicine Total: 0.0</b>			

**Show Medicine Details** Sanctioned Amt (in Rs.) \* :

**History of MR Requests** Remarks :

Office Procedures > Employee Pay / Medical > Medical Reimbursement

[Verify](#)

---

**Employee Details**

Login Name	: TCS_S01	Name	: TCS User4
Designation	: Section Officer	Department	: TCS Test Department
Section	: A	Basic Salary	: 8000.0
Contact Address	: <input type="text" value="Secretariat"/>	Med. Allowance (in Rs.)	: 100
Spouse Govt. Employee	: No	Physically Handicapped	: No

---

**Medical Reimbursement Details**

Applying date *	: 20/03/2008	Advance Amts (in Rs.)	: 123
Dependent Name *	: ABC	Dependent's Age*	: 16
Dependent's Relation*	: SON	Treatment Type *	: Indoor
Referral Letter	:	Medical Bills	:
Order No.	: 1	Order Date	: 19/03/2008

---

**Medical Details**

Ailment *	: HeartDisease	Delivery *	: Cash
Additional allowance(in Rs.)	: 100.0	Treatment End Date	: 26/03/2008
Treatment Start Date *	: 21/03/2008	Hospital Name *	: Sal Hospital
Hospital Type	: Private	Room Type	: Special
Reason	: <input type="text" value="Reason"/>		

---

**Agreement Details**

I/My dependent had taken medical treatment in Ayurvedic Hospital during the period given in the form.

I Agree  I Disagree

I hereby declare that the statements in the application are true to the best of my knowledge and belief and that the person for whom medical expenses were incurred is wholly dependent upon me.

I Agree  I Disagree

I have given an option to accept Medical Allowance.

I Agree  I Disagree

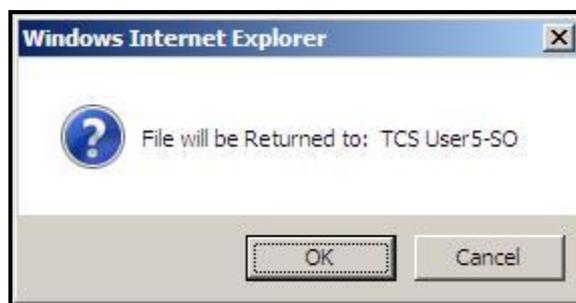
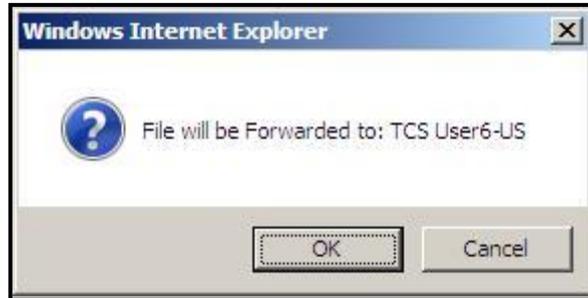
I/My dependent had taken medical treatment in Hospital during the period given in the form.

I Agree  I Disagree

---

**Bill Details**

Miscellaneous Amt.	: 400	Room Charges	: 123
Not Admissible Amt.	: 100	Admissible Amt. (in Rs.)	: 220
Bank Name	: ICICI		
<b>Medicine Total: 0.0</b>			



File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES

Save Send To File Actions Pendency File Sent List Close Move To Folder

Forward  
Return  
Noting side Tapp: Approve Not Approved Dispose

Hide Correspondence Show FileInfo

Reference Docs Check List Basic Info

All Notings Drafts

Notings by TCS User4,Section Officer

Notings by TCS User5 ,Section Officer

Notings by TCS User6 ,Under Secretary

Notings by

Para 4 on Thu 20/03/2008 02:55:29 PM

[Select Standard Notings]

B I U

Browse...

Next All Notings

Office Procedures > Employee Pay / Medical > Medical Reimbursement

Verify

**Employee Details**

Login Name	: TCS_SO1	Name	: TCS User4
Designation	: Section Officer	Department	: TCS Test Department
Section	: A	Basic Salary	: 8000.0
Contact Address	: Secretariat	Med. Allowance (in Rs.)	: 100
Spouse Govt. Employee	: No	Physically Handicapped	: No

**Medical Reimbursement Details**

Applying date *	: 20/03/2008	Advance Amts (in Rs.)	: 123
Dependent Name *	: ABC	Dependent's Age *	: 16
Dependent's Relation *	: SON	Treatment Type *	: Indoor
Referral Letter	:	Medical Bills	:
Order No.	: 1	Order Date	: 19/03/2008

**Medical Details**

Ailment *	: HeartDisease	Delivery *	: Cash
Additional allowance(in Rs.)	: 100.0	Treatment End Date	: 26/03/2008
Treatment Start Date *	: 21/03/2008	Hospital Name *	: Sal Hospital
Hospital Type	: Private	Room Type	: Special
Reason	: Reason		

**Agreement Details**

I/My dependent had taken medical treatment in Ayurvedic Hospital during the period given in the form.  
 I Agree  I Disagree

I hereby declare that the statements in the application are true to the best of my knowledge and belief and that the person for whom medical expenses were incurred is wholly dependent upon me.  
 I Agree  I Disagree

I have given an option to accept Medical Allowance.  
 I Agree  I Disagree

I/My dependent had taken medical treatment in Hospital during the period given in the form.  
 I Agree  I Disagree

**Bill Details**

Miscellaneous Amt.	: 400	Room Charges	: 123
Not Admissible Amt.	: 100	Admissible Amt. (in Rs.)	: 220
Bank Name	: ICICI		
<b>Medicine Total:</b>	<b>0.0</b>		

Worklist > Intimation

1-25 of 786 Search :  in Doc Number

Description	From	Date	Doc Number	Category
<input type="checkbox"/> File 2008/21368/A is Approved	TCS User7, DS	20/03/2008	<a href="#">2008/21368/A</a>	File
<input type="checkbox"/> inf/10/2007/18339/A has been pulled By : TCS User4 From : TCS User2 On 19/03/2008 11:39:53 AM	TCS User4, SO	19/03/2008	<a href="#">inf/10/2007/18339/A</a>	File
<input type="checkbox"/> NKM/10/2008/21182/DS has been pulled By : TCS User4 From : TCS User3 On 19/03/2008 11:38:36 AM	TCS User4, SO	19/03/2008	<a href="#">NKM/10/2008/21182/DS</a>	File
<input type="checkbox"/> NKM/10/2007/18998/US has been pulled By : TCS User4 From : TCS User3 On 19/03/2008 11:07:55 AM	TCS User4, SO	19/03/2008	<a href="#">NKM/10/2007/18998/US</a>	File
<input type="checkbox"/> File 2008/21348/A is Approved	TCS User7, DS	18/03/2008	<a href="#">2008/21348/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	18/03/2008	<a href="#">ABC//2008/21254/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	18/03/2008	<a href="#">AHM//2008/21253/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	18/03/2008	<a href="#">DPR//2008/21247/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	18/03/2008	<a href="#">dsf//2008/21248/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	18/03/2008	<a href="#">SSSSSSSSSS//2008/21255/A</a>	File
<input type="checkbox"/> 2007/6550/A has been pulled By : SYS Admin From : TCS User6 On 18/03/2008 03:38:51 PM	SYS Admin, Secy	18/03/2008	<a href="#">2007/6550/A</a>	File
<input type="checkbox"/> 2007/5598/A has been pulled By : SYS Admin From : TCS User6 On 18/03/2008 03:14:06 PM	SYS Admin, Secy	18/03/2008	<a href="#">2007/5598/A</a>	File
<input type="checkbox"/> 2007/18669/A has been pulled By : SYS Admin From : TCS User6 On 18/03/2008 03:06:56 PM	SYS Admin, Secy	18/03/2008	<a href="#">2007/18669/A</a>	File
<input type="checkbox"/> 2007/11170/2007 has been pulled By : SYS Admin From : TCS User6 On 18/03/2008 02:55:32 PM	SYS Admin, Secy	18/03/2008	<a href="#">2007/11170/2007</a>	File
<input type="checkbox"/> 2007/11164/2007 has been pulled By : SYS Admin From : TCS User6 On 18/03/2008 02:36:46 PM	SYS Admin, Secy	18/03/2008	<a href="#">2007/11164/2007</a>	File
<input type="checkbox"/> 2007/10992/A has been pulled By : SYS Admin From : TCS User6 On 18/03/2008 02:36:34 PM	SYS Admin, Secy	18/03/2008	<a href="#">2007/10992/A</a>	File
<input type="checkbox"/> Your Leave Cancellation has been approved	TCS User6, US	18/03/2008	<a href="#">21338/TCS/2008</a>	File
<input type="checkbox"/> Your Leave Cancellation has been approved	TCS User6, US	18/03/2008	<a href="#">21335/TCS/2008</a>	File
<input type="checkbox"/> 2007/10979/A has been pulled By : SYS Admin From : TCS User4 On 17/03/2008 04:43:53 PM	SYS Admin, Secy	17/03/2008	<a href="#">2007/10979/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	17/03/2008	<a href="#">NEW//2008/21240/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	17/03/2008	<a href="#">NEW//2008/21241/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	17/03/2008	<a href="#">DPR//2008/21234/A</a>	File
<input type="checkbox"/> File will become Pending in 3 days	TCS User4, SO	17/03/2008	<a href="#">APR//2008/21236/A</a>	File
<input type="checkbox"/> 2007/10837/A has been pulled By : SYS Admin From : TCS User6 On 17/03/2008 04:20:58 PM	SYS Admin, Secy	17/03/2008	<a href="#">2007/10837/A</a>	File
<input type="checkbox"/> MIS/10/2007/10820/A has been pulled By : SYS Admin From : TCS User6 On 17/03/2008 03:12:24 PM	SYS Admin, Secy	17/03/2008	<a href="#">MIS/10/2007/10820/A</a>	File

1-25 of 786

Office Procedures > Employee Pay / Medical > Medical Reimbursement Verify

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**Employee Details**

Login Name	: TCS_501	Name	: TCS User4
Designation	: Section Officer	Department	: TCS Test Department
Section	: A	Basic Salary	: 8000.0
Contact Address	: <input type="text" value="Secretariat"/>	Med. Allowance (in Rs.)	: 100
Spouse Govt. Employee	: No	Physically Handicapped	: No

---

**Medical Reimbursement Details**

Applying date *	: 20/03/2008	Advance Amts (in Rs.)	: 123
Dependent Name *	: ABC	Dependent's Age*	: 16
Dependent's Relation*	: SON	Treatment Type *	: Indoor
Referral Letter	:	Medical Bills	:
Order No.	: 1	Order Date	: 19/03/2008

---

**Medical Details**

Ailment *	: HeartDisease	Delivery *	: Cash
Additional allowance(in Rs.)	: 100.0	Treatment End Date	: 26/03/2008
Treatment Start Date *	: 21/03/2008	Hospital Name *	: Sal Hospital
Hospital Type	: Private	Room Type	: Special
Reason	: <input type="text" value="Reason"/>		

---

**Agreement Details**

I/My dependent had taken medical treatment in Ayurvedic Hospital during the period given in the form.

I Agree  I Disagree

I hereby declare that the statements in the application are true to the best of my knowledge and belief and that the person for whom medical expenses were incurred is wholly dependent upon me.

I Agree  I Disagree

I have given an option to accept Medical Allowance.

I Agree  I Disagree

I/My dependent had taken medical treatment in Hospital during the period given in the form.

I Agree  I Disagree

---

**Bill Details**

Miscellaneous Amt.	: 400	Room Charges	: 123
Not Admissible Amt.	: 100	Admissible Amt. (in Rs.)	: 220
Bank Name	: ICICI		
<b>Medicine Total: 0.0</b>			
<b>Show Medicine Details</b>		Sanctioned Amt (in Rs.) *	: 123
<b>History of MR Requests</b>		Remarks	: None

Pendency Details - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES

**Pendency**

**File No.:** 2008/21368/A  
**Subject:** Medical Reimbursement

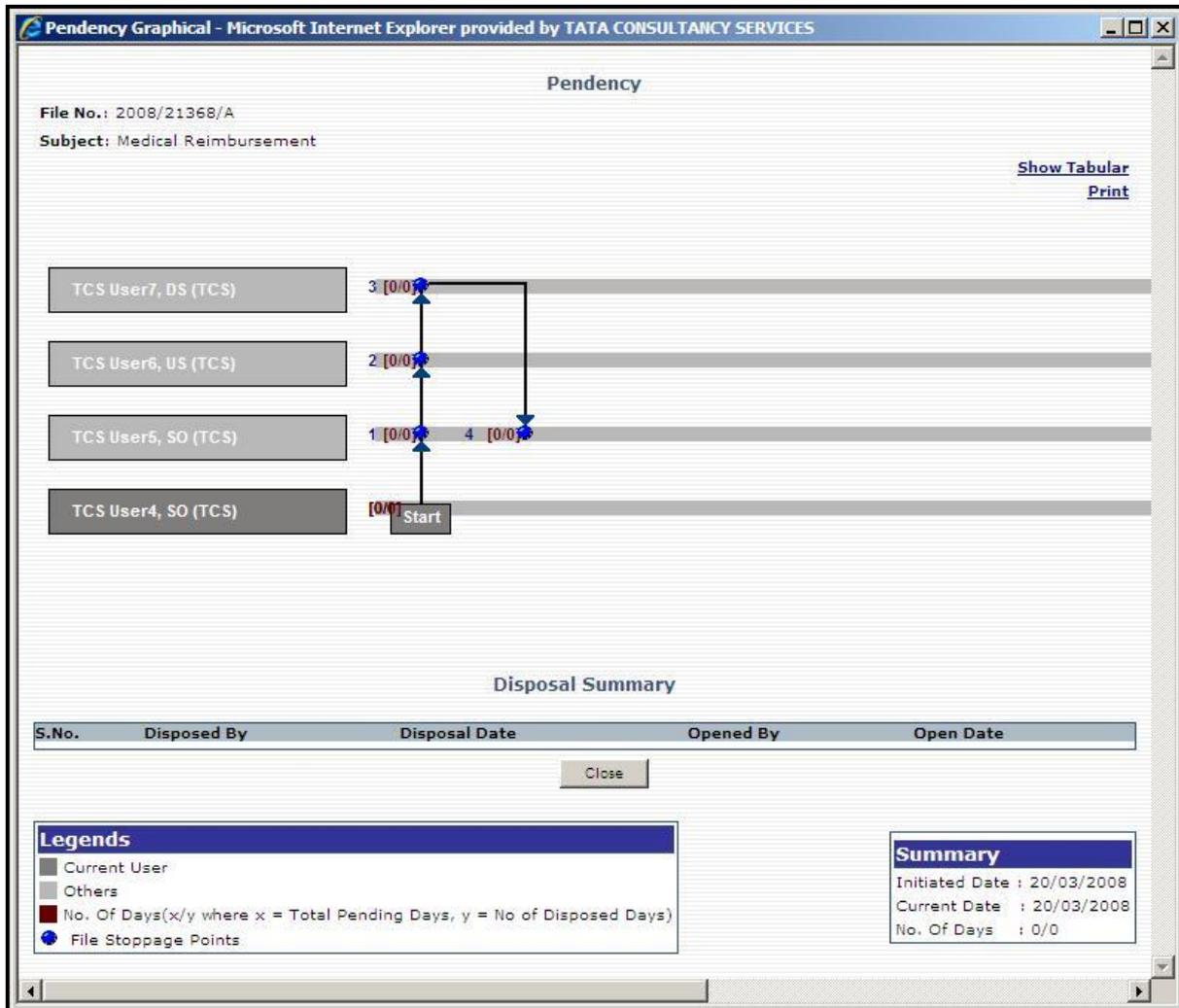
[Show Graph](#)  
[Print](#)

S.No.	Officer Name	Department	Received Date	Sent Date	Pending Since
1	TCS User4 (SO)	TCS	20/03/2008	20/03/2008	0/0 Day(s)
2	TCS User5 (SO)	TCS	20/03/2008	20/03/2008	0/0 Day(s)
3	TCS User6 (US)	TCS	20/03/2008	20/03/2008	0/0 Day(s)
4	TCS User7 (DS)	TCS	20/03/2008	20/03/2008	0/0 Day(s)
5	TCS User5 (SO)	TCS	20/03/2008	20/03/2008	0/0 Day(s)

**Disposal Summary**

S.No.	Disposed By	Disposal Date	Opened By	Open Date
-------	-------------	---------------	-----------	-----------

**Note:** - x/y where x = Total Pending Days, y = No of Disposed Days





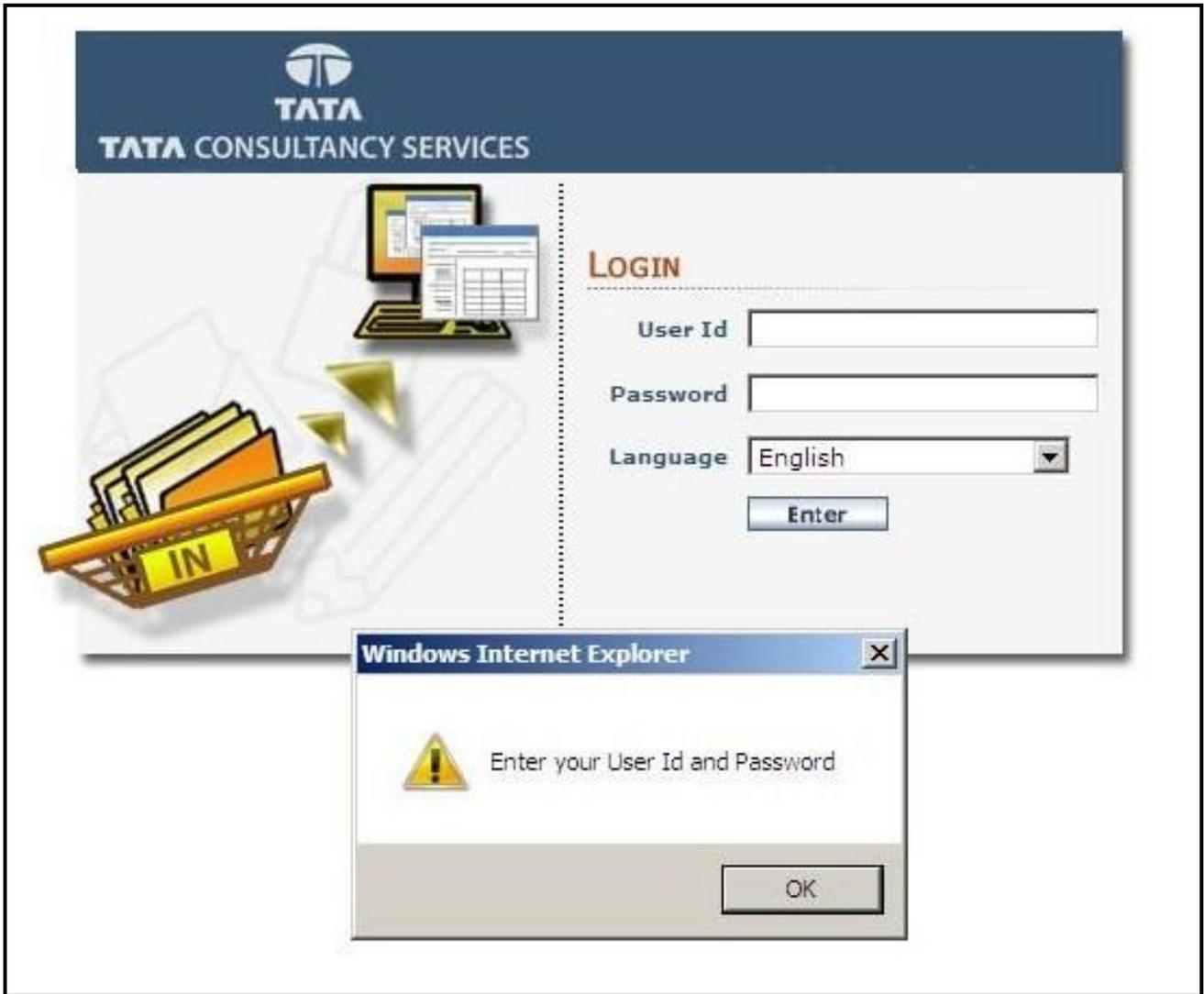
**LEGISLATIVE ASSEMBLY QUESTIONS**



# Main Login Screen



# Login Screen Validations



# Home Page

Today's Quote: but being ashamed of it is

Downloads Search ChangePassword Help LogOut

Welcome TCS User4,  
Section Officer, TCS  
Tue 29 Apr 2008



**Worklist** [To Do List] [Reminder]  
(Files : 65) (Seen/Approved/Not Approved) Files : 102) (Corrs : 15)  
(Intimation : 863) ( Comng : New-149, Comng ; Re-1) 

**Files Room**

**Reference Docs** [Others]  
(GRs : 4) (Circulars : 3) 

**Dashboard**

**Reports**

**Applications**

**Training Manual**

**Online Exam**

**Holiday List**

**News Articles**

**Notice Board**

**Appointment Scheduler**

**Contact Details**

**Opinion Poll**

**Leave Application**

**LAQ**

**HOME LAQ**

**Budget**

**Support Request**

**From TCS Desk**

**Maintenance Phase Notice**

Integrated Workflow Document Management System (IWDM) enables total automation of the daily departmental tasks. IWDM is a combination of many robust applications, each catering to the various tasks within various departments of an Organization.

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Contact Us 

# LAQ Correspondence

The screenshot displays the 'Legislative Assembly Question' web application. At the top, there is a header with the TATA logo and 'TATA CONSULTANCY SERVICES' on the left, and the Indian national emblem in the center. Below the header, a navigation bar includes a 'Today's Quote' (No man succeeds without a good woman behind him. Wife or mother, if it is both, he is twi), a 'Downloads' icon, a search bar, and links for 'ChangePassword', 'Help', and 'LogOut'. The main content area is titled 'Legislative Assembly Question' and 'Question Details'. It contains a form with the following fields: 'LAQ Type' (a dropdown menu set to 'Starred'), 'Date on which to be asked \*' (a date picker), and 'Question \*' (a large text area). Below this is a table with columns 'Sr.No.' and 'Sub Question', featuring 'Add' and 'Delete' buttons. Underneath the table is the 'Addressed to' section, which includes 'Asked for (Department Name)' and 'Answer to be given by' (both dropdown menus), and 'Send', 'Close', and 'Reset' buttons. On the right side, a sidebar shows a user welcome message: 'Welcome TCS User4, Section Officer, TCS Wed 30 Apr 2008'. Below this is a vertical menu of application features, each with an icon: Training Manual, Online Exam, Holiday List, News Articles, Notice Board, Appointment Scheduler, Contact Details, Opinion Poll, Leave Application, LAQ, HOME LAQ, Budget, Support Request, From TCS Desk, and Maintenance Phase Notice.

# Date Validation

The screenshot displays a web application interface for submitting Legislative Assembly Questions. At the top, there is a header with the TATA logo and 'TATA CONSULTANCY SERVICES' on the left, and a quote 'Poverty is not a shame but' in the center. On the right, there are navigation links for Downloads, Search, ChangePassword, Help, and LogOut. Below the header, the main content area is titled 'Legislative Assembly Question' and 'Question Details'. It contains a form with the following fields: 'LAQ Type' (a dropdown menu set to 'Starred'), 'Date on which to be asked \*' (a date input field), and 'Question \*' (a text area). Below the form is a table with a header 'Sr.No.' and buttons for 'Add' and 'Delete'. Underneath the table is the 'Addressed to' section, which includes 'Asked for (Department Name)' (a dropdown menu) and 'Answer to be given by' (a dropdown menu). At the bottom of the form are 'Send', 'Close', and 'Reset' buttons. A 'Windows Internet Explorer' error dialog box is overlaid on the form, displaying a warning icon and the message 'Question Date is mandatory' with an 'OK' button. On the right side of the page, there is a sidebar with a welcome message 'Welcome TCS User4, Section Officer, TCS' and the date 'Tue 29 Apr 2008'. Below the message is a list of navigation links: Training Manual, Online Exam, Holiday List, News Articles, Notice Board, Appointment Scheduler, Contact Details, Opinion Poll, Leave Application, LAQ, HOME LAQ, Budget, Support Request, From TCS Desk, and Maintenance Phase Notice.

# Date Validation

The screenshot shows a web application interface for submitting Legislative Assembly Questions. The page header includes the Tata Consultancy Services logo and the Indian national emblem. A navigation bar contains links for Downloads, Search, ChangePassword, Help, and LogOut. The main content area is titled "Legislative Assembly Question" and "Question Details". It features a form with fields for "LAQ Type" (set to "Starred"), "Date on which to be asked \*" (set to "09/04/2008"), and a "Question \*" text area. Below the form is a table with columns for "Sr.No." and "Address". A "Windows Internet Explorer" error dialog box is overlaid on the form, displaying a warning icon and the message "Date should not be less than Current Date". The right sidebar contains a list of navigation links including Training Manual, Online Exam, Holiday List, News Articles, Notice Board, Appointment Scheduler, Contact Details, Opinion Poll, Leave Application, LAQ, HOME LAQ, Budget, Support Request, From TCS Desk, and Maintenance Phase Notice. The top right corner of the sidebar shows a welcome message for "TCS User4, Section Officer, TCS" dated "Tue 29 Apr 2008".

# Starred Question - Date Validation

The screenshot displays a web application interface for submitting Legislative Assembly Questions. The main content area is titled "Legislative Assembly Question" and "Question Details". It contains a form with the following fields:

- LAQ Type: Starred (dropdown menu)
- Date on which to be asked\*: 29/04/2008 (calendar icon)
- Question\*: (text area)
- Sr.No.: (input field with "Add" button)
- Address: (input field)
- Asked for (Department Name): -- Select -- (dropdown menu)
- Answer to be given by: -- Select -- (dropdown menu)

A "Windows Internet Explorer" error dialog box is overlaid on the form, showing a warning icon and the message: "Starred question should be asked before 21 days". The dialog has an "OK" button.

The interface includes a header with the TATA logo and "TATA CONSULTANCY SERVICES". A navigation menu on the right lists various services: Training Manual, Online Exam, Holiday List, News Articles, Notice Board, Appointment Scheduler, Contact Details, Opinion Poll, Leave Application, LAQ, HOME LAQ, Budget, Support Request, From TCS Desk, and Maintenance Phase Notice. The footer shows "Welcome TCS User4, Section Officer, TCS Tue 29 Apr 2008".

# Question Validation

The screenshot displays the 'Legislative Assembly Question' application interface. At the top, the TATA logo and 'TATA CONSULTANCY SERVICES' are visible on the left, and the Indian national emblem is centered. A quote by Mahatma Gandhi, 'Poverty is not a shame but being ashamed of it is', is displayed. The main content area is titled 'Question Details' and contains the following form elements:

- LAQ Type: Starred (dropdown menu)
- Date on which to be asked\*: 21/05/2008 (calendar icon)
- Question\*: (empty text area)
- Sr.No. table with 'Add' and 'Delete' buttons
- Addressed to section with 'Asked for (Department Name)' and 'Answer to be given by' dropdown menus
- 'Send', 'Close', and 'Reset' buttons at the bottom

A 'Windows Internet Explorer' error dialog box is overlaid on the form, displaying a yellow warning triangle and the message 'Question must be entered'. The right sidebar contains a navigation menu with the following items:

- Training Manual
- Online Exam
- Holiday List
- News Articles
- Notice Board
- Appointment Scheduler
- Contact Details
- Opinion Poll
- Leave Application
- LAQ
- HOME LAQ
- Budget
- Support Request
- From TCS Desk
- Maintenance Phase Notice

The top right corner of the page shows a user greeting: 'Welcome TCS User4, Section Officer, TCS' and the date 'Tue 29 Apr 2008'. The browser's address bar and navigation buttons (Downloads, Search, ChangePassword, Help, LogOut) are also visible.

# Sub Question Validation

The screenshot displays the 'Legislative Assembly Question' application interface. At the top, there is a header with the Tata Consultancy Services logo and the text 'TATA CONSULTANCY SERVICES'. Below the header, a quote is displayed: 'Poverty is not a shame but being ashamed of it is'. The main content area is divided into two sections: 'Question Details' and 'Addressed to'. The 'Question Details' section contains a form with the following fields: 'LAQ Type' (set to 'Starred'), 'Date on which to be asked\*' (set to '21/05/2008'), and 'Question\*' (containing 'Sample Question'). Below this is a table with columns 'Sr.No.' and 'Sub Question'. The first row contains the number '1' and is highlighted. A validation error message 'SubItem should not be null' is displayed over the first row. The 'Addressed to' section contains a form with 'Asked for (Department Name)' and 'Answer to be given by' dropdown menus, and 'Send', 'Close', and 'Reset' buttons. On the right side, there is a navigation menu with various options: Training Manual, Online Exam, Holiday List, News Articles, Notice Board, Appointment Scheduler, Contact Details, Opinion Poll, Leave Application, LAQ, HOME LAQ, Budget, Support Request, From TCS Desk, and Maintenance Phase Notice. The user is identified as 'TCS User4, Section Officer, TCS' and the date is 'Tue 29 Apr 2008'.

# Sub Question Validation

**Legislative Assembly Question**  
Question Details

LAQ Type : Starred

Date on which to be asked \* : 21/05/2008

Question \* : Sample Question

Sr.No.	
<input type="checkbox"/> 1	
<input type="checkbox"/> 2	
<input type="checkbox"/> 3	

Add Delete

Addressed to

Asked for (Department Name) : -- Select --

Answer to be given by : -- Select --

Send Close Reset

Windows Internet Explorer  
Select atleast one checkbox to delete Sub Item  
OK

Welcome TCS User4,  
Section Officer, TCS  
Tue 29 Apr 2008

- Training Manual
- Online Exam
- Holiday List
- News Articles
- Notice Board
- Appointment Scheduler
- Contact Details
- Opinion Poll
- Leave Application
- LAQ
- HOME LAQ
- Budget
- Support Request
- From TCS Desk
- Maintenance Phase Notice

# Department Validation

The screenshot displays the 'Legislative Assembly Question' application interface. At the top, there is a header with the TATA logo and 'TATA CONSULTANCY SERVICES' on the left, and the Indian national emblem in the center. Below the header, a navigation bar includes links for Downloads, Search, ChangePassword, Help, and LogOut. The main content area is titled 'Question Details' and contains the following fields:

- LAQ Type: Starred (dropdown)
- Date on which to be asked\*: 21/05/2008 (calendar icon)
- Question\*: Sample Question (text area)

Below these fields is a table with the following structure:

Sr.No.	Sub Item Question
1	

A modal dialog box titled 'Windows Internet Explorer' is overlaid on the table, displaying a warning icon and the message 'Please Select the Department' with an 'OK' button.

At the bottom of the form, there is an 'Addressed to' section with two dropdown menus: 'Asked for (Department Name)' and 'Answer to be given by'. Below these are 'Send', 'Close', and 'Reset' buttons.

The right sidebar contains a list of navigation options:

- Training Manual
- Online Exam
- Holiday List
- News Articles
- Notice Board
- Appointment Scheduler
- Contact Details
- Opinion Poll
- Leave Application
- LAQ
- HOME LAQ
- Budget
- Support Request
- From TCS Desk
- Maintenance Phase Notice

At the top right of the sidebar, it says 'Welcome TCS User4, Section Officer, TCS' and 'Tue 29 Apr 2008'.

# Correspondence Send

The screenshot shows a web application interface for submitting a Legislative Assembly Question. At the top, there is a header with the TATA logo and the text 'TATA CONSULTANCY SERVICES'. Below this is a navigation bar with a quote: 'Poverty is not a shame but being ashamed c', and links for Downloads, Search, ChangePassword, Help, and LogOut. The main content area is titled 'Legislative Assembly Question' and contains a 'Question Details' form. This form includes fields for 'LAQ Type' (set to 'Starred'), 'Date on which to be asked\*' (set to '21/05/2008'), and a text area for the 'Question \*' containing 'Sample Question'. Below this is a table for 'Sub Question' with one entry: 'Sample Sub Question'. At the bottom of the form are 'Add' and 'Delete' buttons. The 'Addressed to' section includes a dropdown for 'Asked for (Department Name)' set to 'TCS Test Department' and another dropdown for 'Answer to be given by' set to '-- Select --'. 'Send', 'Close', and 'Reset' buttons are located at the bottom of this section. On the right side, there is a sidebar with a list of links: Training Manual, Online Exam, Holiday List, News Articles, Notice Board, Appointment Scheduler, Contact Details, Opinion Poll, Leave Application, LAQ, HOME LAQ, Budget, Support Request, From TCS Desk, and Maintenance Phase Notice. The sidebar also displays the user's name 'Welcome TCS User4, Section Officer, TCS' and the date 'Tue 29 Apr 2008'.

# Correspondence Sent Intimation

The screenshot displays the TATA CONSULTANCY SERVICES web portal. At the top left, the TATA logo and 'TATA CONSULTANCY SERVICES' are visible. The top center features the Indian national emblem and the motto 'Satyameva Jayate'. A navigation bar includes links for 'Downloads', 'Search', 'ChangePassword', 'Help', and 'LogOut'. A 'Today's Quote' section displays the text: 'Poverty is not a shame but being ashamed of it is'. On the right side, a user greeting reads: 'Welcome TCS User4, Section Officer, TCS Tue 29 Apr 2008'. The main content area shows a confirmation message: 'Your 'LAQ' request with tappal number 21660/TCS/2008 has been sent to TCS User6 for approval', with an 'OK' button below it. A vertical sidebar on the right contains various application links: Training Manual, Online Exam, Holiday List, News Articles, Notice Board, Appointment Scheduler, Contact Details, Opinion Poll, Leave Application, LAQ, HOME LAQ, Budget, Support Request, From TCS Desk, and Maintenance Phase Notice.

# Next officer Home pages screen

**TATA CONSULTANCY SERVICES**

Today's Quote: Poverty is not a shame but being ashamed of it is

Welcome TCS User6, Under Secretary, TCS  
Tue 29 Apr 2008

**Worklist** [To Do List] [Reminder]  
(Files : 134) (Seen/Approved/Not Approved) Files : 156) (Corrs : 120)  
(Intimation : 1787) ( Comng : New-864, Comng : Re-1) NEW

**Files Room**

**Reference Docs (Others)**  
(GRs : 4) (Circulars : 3) NEW

**Dashboard**

**Reports**

**Applications**

Integrated Workflow Document Management System (IWDMS) enables total automation of the daily departmental tasks. IWDMS is a combination of many robust applications, each catering to the various tasks within various departments of an Organization.

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Contact Us TATA

- Training Manual
- Online Exam
- Holiday List
- News Articles (2) NEW
- Notice Board (2) NEW
- Appointment Scheduler
- Investment Monitoring System
- Contact Details
- Opinion Poll
- Leave Application
- LAQ
- HOME LAQ
- Budget
- Support Request
- From TCS Desk
- Maintenance Phase Notice

# Correspondence Received at Higher Officer



**TATA**  
TATA CONSULTANCY SERVICES



सत्यमेव जयते

Welcome TCS User6, Under Secretary, TCS  
Tue 29 Apr 2008

Worklist
Files Room
Reference Docs
Dashboard
Reports
Applications

Search
Home
Help
LogOut

Initiate
Create File
Preferred List
Recorded Tappal
Assign To
Actions
Send To
Forward
Add To File
Acknowledgement
Mov

Refresh Worklist

- Worklist
- Files
- Tappals
- Intimation
- Seen(Approved/Not)
- All Document(s)
- Sent Files
- Sent Tappal(s)
- Communique Monit
- Iconic View
- Action Items
- Budget Folder

**Please Note**

You can create

- Court Case File
- Audit para File
- PAC File
- LAQ File
- LA Bills File

Using Create File menu & selecting any of the above as Subject

Worklist > Tappals

1-25 of 232 Search :  in Tappal No.

Description	Subject	Category	Tappal No.	Dept	From	Rcvd Date	Initiator	Status	Priority
<input type="checkbox"/> LAQ from TCS User4	Processing Of PAQs		<a href="#">21662/TCS/2008</a>	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> LAQ from TCS User4	Processing Of PAQs		<a href="#">21661/TCS/2008</a>	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		<a href="#">21650/TCS/2008</a>	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> LAQ from TCS User4	Processing Of PAQs		<a href="#">21660/TCS/2008</a>	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4 for Half Pay Leave From 30/09/2008 To 30/09/2008	Leave Request		<a href="#">21649/TCS/2008</a>	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Probation Request	Probation		<a href="#">21648/TCS/2008</a>	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		<a href="#">21646/TCS/2008</a>	TCS	TCS User4, SO	28/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Half Pay Leave From 05/08/2008 To 05/08/2008	Leave Request		<a href="#">21629/TCS/2008</a>	TCS	TCS User4, SO	25/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		<a href="#">21627/TCS/2008</a>	TCS	TCS User4, SO	25/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Half Pay Leave From 10/04/2008 To 10/04/2008	Leave Request		<a href="#">21626/TCS/2008</a>	TCS	TCS User4, SO	25/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		<a href="#">21612/TCS/2008</a>	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		<a href="#">21611/TCS/2008</a>	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		<a href="#">21610/TCS/2008</a>	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Earned Leave From 24/04/2008 To 24/04/2008	Leave Request		<a href="#">21608/TCS/2008</a>	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Casual Leave From 25/04/2008 To 25/04/2008	Leave Request		<a href="#">21605/TCS/2008</a>	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		<a href="#">21603/TCS/2008</a>	TCS	TCS User4, SO	22/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4 for Restricted Holiday Leave From 26/12/2007 To 26/12/2007	Leave Request		<a href="#">21586/TCS/2008</a>	TCS	TCS User4, SO	21/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Half Pay Leave From 30/04/2009 To 30/04/2009	Leave Request		<a href="#">21557/TCS/2008</a>	TCS	TCS User4, SO	11/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4 for Earned Leave From 21/04/2011 To 21/04/2011	Leave Request		<a href="#">21543/TCS/2008</a>	TCS	TCS User4, SO	10/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Asset Request	Asset Request		<a href="#">21492/TCS/2008</a>	TCS	TCS User4, SO	04/04/2008	TCS User4	Received	Routine

Non-Editable for Officer

**File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES** [Minimize] [Maximize] [Close]

**Save** **Send To Section** **Close**

---

**Legislative Assembly Question**

**Question Details**

Question Raised By : Nitinkumar Patel

Constituency : Kadi

LAQ Type : Starred

Date on which to be asked \* : 21/05/2008

Question \* : Sample Question

Sr.No.	Sub Question
Sub Question 1	: Sample Sub Question

---

**Addressed to**

Asked for (Department Name) : TCS Test Department

Answer to be given by : TCS Test Department

---

**My Remarks**

## Edited Remarks

The screenshot displays a web application window titled "File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES". The interface includes a menu bar with "Save", "Send To Section", and "Close" options. The main content area is divided into several sections:

- Legislative Assembly Question**
  - Question Details**
    - Question Raised By : Nitinkumar Patel
    - Constituency : Kadi
    - LAQ Type : Starred
    - Date on which to be asked \* : 21/05/2008
    - Question \* : Sample Question
  - Sr.No. Sub Question**
    - Sub Question 1 : Sample Sub Question
  - Asked for (Department Name)
  - Answer to be given by
- My Remarks**
  - Sample Remarks

A "Windows Internet Explorer" dialog box is overlaid on the interface, containing a question mark icon and the text "Do you want to save the correspondence?". It features "OK" and "Cancel" buttons.

# Creation of File



Welcome TCS User6, Under Secretary, TCS  
Tue 29 Apr 2008

TATA CONSULTANCY SERVICES
Search Home Help LogOut

Worklist
Files Room
Reference Docs
Dashboard
Reports
Applications

Refresh Worklist

- Files
- Tappals
- Intimation
- Seen(Approved/Not)
- All Document(s)
- Sent Files
- Sent Tappal(s)
- Communique Monit
- Iconic View
- Action Items
- Budget Folder

**Please Note**

You can create

- Court Case File
- Audit para File
- PAC File
- LAQ File
- LA Bills File

Using Create File menu & selecting any of the above as Subject

Initiate
Create File
Preferred List
Recorded Tappal
Assign To
Actions
Send To
Forward
Add To File
Acknowledgement
Mov

Regular File

Common File

1-25 of 2 Create Common File for the Tappal in Tappal No.

Description	Subject	Category	Tappal No.	Dept	From	Rcvd Date	Initiator	Status	Priority
<input type="checkbox"/> Probation Request	Probation		21654/TCS/2008	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		21653/TCS/2008	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input checked="" type="checkbox"/> LAQ from TCS User4	Processing Of PAQs		21662/TCS/2008	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> LAQ from TCS User4	Processing Of PAQs		21661/TCS/2008	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		21650/TCS/2008	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> LAQ from TCS User4	Processing Of PAQs		21660/TCS/2008	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4 for Half Pay Leave From 30/09/2008 To 30/09/2008	Leave Request		21649/TCS/2008	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Probation Request	Probation		21648/TCS/2008	TCS	TCS User4, SO	29/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		21646/TCS/2008	TCS	TCS User4, SO	28/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Half Pay Leave From 05/08/2008 To 05/08/2008	Leave Request		21629/TCS/2008	TCS	TCS User4, SO	25/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		21627/TCS/2008	TCS	TCS User4, SO	25/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Half Pay Leave From 10/04/2008 To 10/04/2008	Leave Request		21626/TCS/2008	TCS	TCS User4, SO	25/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		21612/TCS/2008	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		21611/TCS/2008	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		21610/TCS/2008	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Earned Leave From 24/04/2008 To 24/04/2008	Leave Request		21608/TCS/2008	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Casual Leave From 25/04/2008 To 25/04/2008	Leave Request		21605/TCS/2008	TCS	TCS User4, SO	23/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4	Leave Request		21603/TCS/2008	TCS	TCS User4, SO	22/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4 for Restricted Holiday Leave From 26/12/2007 To 26/12/2007	Leave Request		21586/TCS/2008	TCS	TCS User4, SO	21/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Modification of TCS User4 for Half Pay Leave From 30/04/2009 To 30/04/2009	Leave Request		21557/TCS/2008	TCS	TCS User4, SO	11/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Leave Request of TCS User4 for Earned Leave From 21/04/2011 To 21/04/2011	Leave Request		21543/TCS/2008	TCS	TCS User4, SO	10/04/2008	TCS User4	Received	Routine
<input type="checkbox"/> Asset Request	Asset Request		21492/TCS/2008	TCS	TCS User4, SO	04/04/2008	TCS User4	Received	Routine

# File Creation Screen

**Create File**

Unit \* : TCS\_US1  
Section \* : -----Select-----  
Subject \* : Processing Of PAQs  
Tri Letter No \* :  
Sub Code \* : --Select--  
Description : LAQ from TCS User4

**File Marking**

Department : TCS Test Department  
HOD : -- Select --  
Section : -- Select --  
Designation : -- Select --  
Name : Contains [ ] Go

**Employees** [ ] **New Sub Path** [ ]

>  
<  
>>  
<<

Create Cancel Reset

# List of Officers

**Create File**

Unit \* : TCS\_US1  
Section \* : Section A  
Subject \* : Processing Of PAQs  
Tri Letter No \* : LAQ  
Sub Code \* : 13  
Description : LAQ from TCS User4

**File Marking**

Department : TCS Test Department  
HOD : -- Select --  
Section : -- Select --  
Designation : -- Select --  
Name : Contains [ ] Go

**Employees**

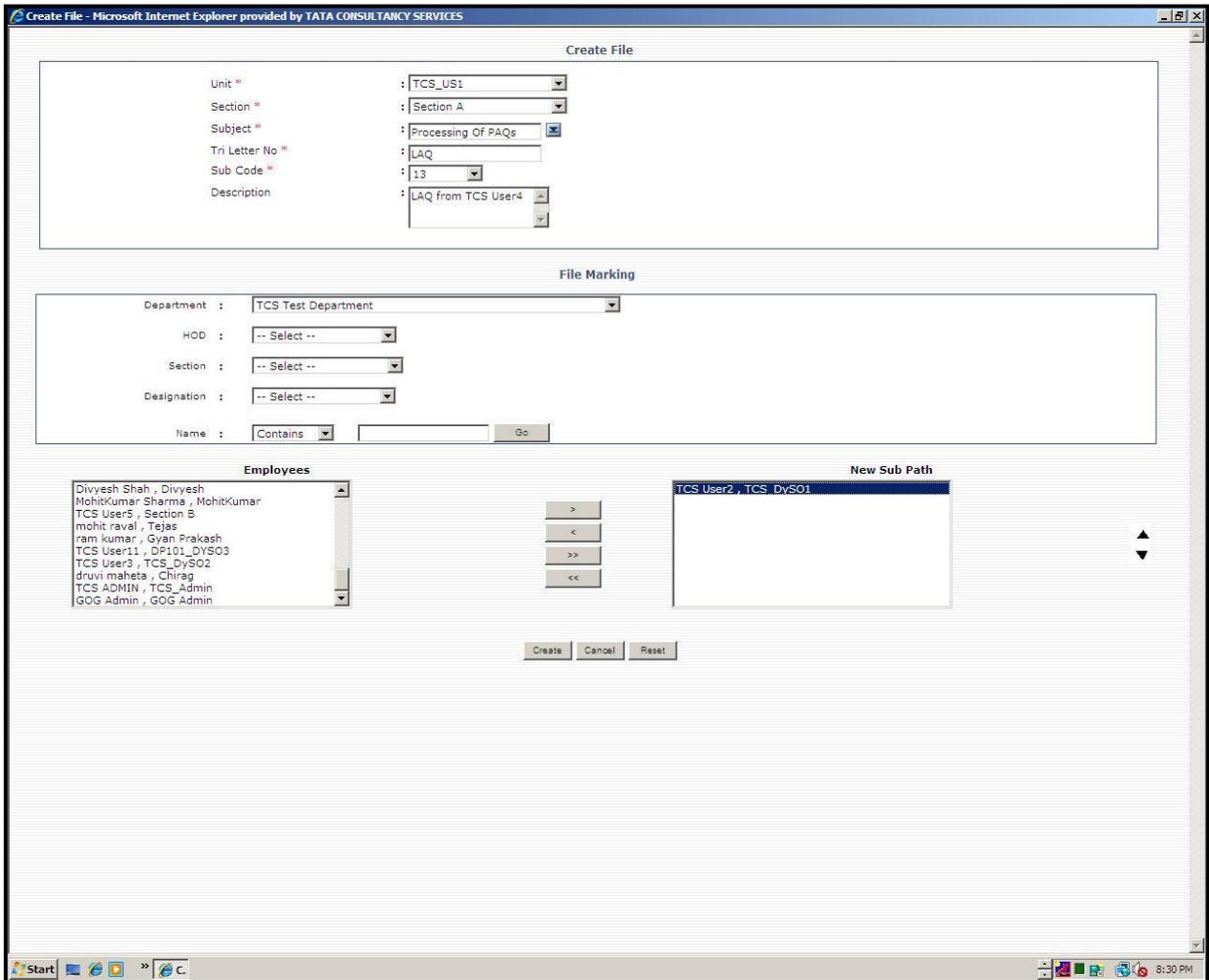
- Viral Shah , Vivek
- Ritesh Parikh , Rajeev
- Amol Trivedi , Asutosh
- Pinkal Patel , TCS\_SO
- TCS User9 , DP101\_Minister
- M M Gandhi , Dharma
- SYS Admin , TCS\_Secy
- Upen Patel , Shekhar
- V J Rupera , FA Branch
- abc def , Gunjan

**New Sub Path**

>  
<  
>>  
<<

Create Cancel Reset

# List of Officers





# Validation of Mandatory fields

The screenshot shows a web browser window titled "File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES". The main content area displays a form for "Legislative Assembly Question Details".

**Legislative Assembly Question Details:**

- Letter No. \*: [Empty field]
- Subject \*: [Empty dropdown]
- Question Raised By \*: Shri Nitinkumar Patel
- LAQ Type \*: Starred
- Session: 1
- To be Replied By: [Select dropdown]
- HOD Info Required:  Yes  No
- Letter Dated \*: 29/04/2008
- Department: TCS
- Constituency: Kadi
- Vidhan Sabha: 12
- Constituency: [Select dropdown]

**Question and Answer Details:**

- Question No. \*: 543
- Supplementary Question \*:  Yes  No
- Question \*: Sample Question
- Brief Answer: [Empty text area]
- Assurance: [Empty text area]
- Attachment: [Browse... button]

**Sub Item Details:**

Sub Item Question	Sub Item Answer	Sub Item Attachment
<input type="checkbox"/> Sample Sub Question	[Empty text area]	[Browse... button]

**Status Details:**

- Due Date of Sending Replies \*: [Empty field]
- Priority No.: [Empty field]
- LAQ Status: Open
- Revised Date in Assembly: [Empty field]
- Reply Date in Assembly: 21/05/2008
- No. Of Copies: 4
- Discussed in Assembly:  Yes  No

A validation error message is shown in a small dialog box: "Letter No. is Mandatory".

## Filed Data in File

File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES

Save Send To File Actions Pendency File Sent List Close Move To Folder

---

### Legislative Assembly Question Details

Letter No. \* : 220 Letter Dated \* : 29/04/2008  
 Subject \* : Sample Subject Department : TCS  
 Question Raised By \* : Shri Nitinkumar Patel Constituency : Kadi  
 LAQ Type \* : Starred  
 Session : 1 Vidhan Sabha : 12  
 To be Replied By : .....Select..... Constituency : .....Select.....  
 HOD Info Required :  Yes  No

---

### Question and Answer Details

Question No. \* : 543 Previous Related Question No. :  
 Supplementary Question \* :  Yes  No  
 Question \* : Sample Question  
 Brief Answer : Sample Answer  
 Assurance : Sample Assurance  
 Attachment : C:\Users\Pu Browse...

---

### Sub Item Details

	Sub Item Question	Sub Item Answer	Sub Item Attachment
<input type="checkbox"/>	Sample Sub Question	Sample Sub Answer	C:\Users\Pu Browse...

Add Delete

---

### Status Details

Due Date of Sending Replies \* : 29/04/2008 Reply Date in Assembly : 21/05/2008 Clear  
 Priority No. : No. Of Copies : 4  
 LAQ Status : Open Discussed in Assembly :  Yes  No  
 Revised Date in Assembly : Search

# Save the File

File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES

Save Send To File Actions Pendency File Sent List Close Move To Folder

### Legislative Assembly Question Details

Letter No. *	: 220	Letter Dated *	: 29/04/2008
Subject *	: Sample Subject	Department	: TCS
Question Raised By *	: Shri Nitinkumar Patel	Constituency	: Kadi
LAQ Type *	: Starred	Vidhan Sabha	: 12
Session	: 1	Constituency	: .....Select.....
To be Replied By	: .....Select.....		
HOD Info Required	: <input type="radio"/> Yes <input checked="" type="radio"/> No		

### Question and Answer Details

Question No. *	: 543	Previous Related Question No.	:
Supplementary Question *	: <input type="radio"/> Yes <input checked="" type="radio"/> No		
Question *	: Sample Question		
Brief Answer	: Sample Answer		
Assurance	: Sample Assurance		
Attachment	: C:\Users\Pu Browse...		

### Sub Item Details

	Sub Item Question	Sub Item Answer	Sub Item Attachment
<input type="checkbox"/>	Sample Sub Question	Sample Sub Answer	C:\Users\Pu Browse...

### Status Details

Due Date of Sending Replies *	: 29/04/2008	Reply Date in Assembly	: 21/05/2008 <input type="button" value="Clear"/>
Priority No.	:	No. Of Copies	: 4
LAQ Status	: Open	Discussed in Assembly	: <input type="radio"/> Yes <input checked="" type="radio"/> No
Revised Date in Assembly	:	<input type="button" value="Search"/>	

Windows Internet Explorer

Do you want to save the file?

# File sent Within Hierarchy

File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES

Save Send To File Actions Pendency File Sent List Close Move To Folder

Within Hierarchy Parallel Files (One/Many) Hide Correspondence Show FileInfo

Notin AnyOne / MultipleFiles nt Cases Drafts Reference Docs Check List Linked Files Basic Info

### Legislative Assembly Question Details

Letter No. * : 220	Letter Dated * : 29/04/2008	
Subject * : Sample Subject	Department : TCS	
Question Raised By * : Shri Nitinkumar Patel	Constituency : Kadi	
LAQ Type * : Starred	Vidhan Sabha : 12	
Session : 1	Constituency : Select	
To be Replied By : Select		
HOD Info Required : <input type="radio"/> Yes <input checked="" type="radio"/> No		

---

### Question and Answer Details

Question No. * : 543	Previous Related Question No. :
Supplementary Question * : <input type="radio"/> Yes <input checked="" type="radio"/> No	
Question * : Sample Question	
Brief Answer : Sample Answer	
Assurance : Sample Assurance	
Attachment : <input type="text"/> <input type="button" value="Browse..."/>	

---

### Sub Item Details

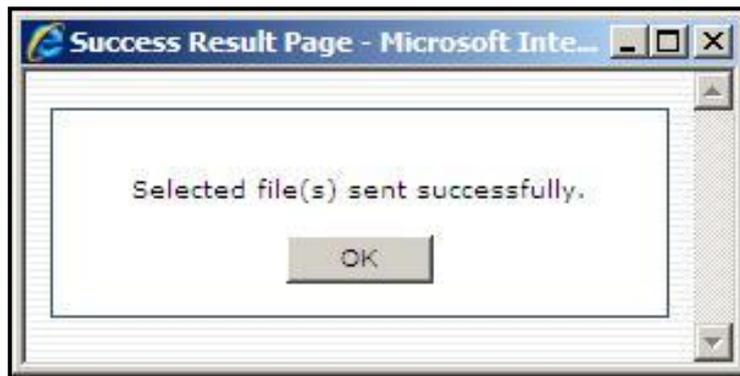
	Sub Item Question	Sub Item Answer	Sub Item Attachment
<input type="checkbox"/>	Sample Sub Question	Sample Sub Answer	<input type="text"/> <input type="button" value="Browse..."/>

---

### Status Details

Due Date of Sending Replies * : 29/04/2008	Reply Date in Assembly : 21/05/2008 <input type="button" value="Clear"/>
Priority No. :	No. Of Copies : 4
LAQ Status : Open	Discussed in Assembly : <input type="radio"/> Yes <input checked="" type="radio"/> No
Revised Date in Assembly :	

# Successfully Sent Intimation



# Next Higher Officer Screen



**TATA**  
TATA CONSULTANCY SERVICES



सत्यमेव जयते

Welcome TCS User2, Deputy Section Officer, TCS  
Tue 29 Apr 2008

Worklist Files Room Reference Docs Dashboard Reports Applications

Search Home Help LogOut

Refresh Worklist

- Worklist
- Files
- Tappals
- Intimation
- Seen(Approved/Not)
- All Document(s)
- Sent Files
- Sent Tappal(s)
- Communique Monit
- Iconic View
- Action Items
- Budget Folder

**Please Note**

You can create

- Court Case File
- Audit para File
- PAC File
- LAQ File
- LA Bills File

Using Create File menu & selecting any of the above as Subject

Preview Create File My Notings Preferred List To Do List File Actions Send To PA/PS Delete Intimation Move To Folder

Missed Due Date List Reminder

WorkList > Files

1-25 of 28 Search: in File Number

Description	Subject	File Number	Doc Type	From	Rcvd Date	Dept	Priority
<input type="checkbox"/> LAQ from TCS User4	Processing Of PAQs	<a href="#">LAQ/13/2008/21662/A</a>	File	TCS User6, US	29/04/2008	TCS	Routine
<input type="checkbox"/> fhghf	Ad-Hoc Appointment (HFW)	<a href="#">sdf/10/2007/18608/2007</a>	File	TCS User4, SO	23/10/2007	TCS	Routine
<input type="checkbox"/> test	TCS Test Subject 1	<a href="#">pop/10/2007/18146/2007</a>	File	TCS User7, DS	25/09/2007	TCS	Routine
<input type="checkbox"/> A new file tri/13/2007/18550/2007 has come in your Seen(Approved/Not Approved) Files	TCS Test Subject 1	<a href="#">tri/13/2007/18550/2007</a>	Intimation	TCS User4, SO	24/09/2007	TCS	Routine
<input type="checkbox"/> A new file ADR/16/2007/18552/2007 has come in your Seen(Approved/Not Approved) Files	Monitoring of Civil Court Cases - J Branch	<a href="#">ADR/16/2007/18552/2007</a>	Intimation	TCS User6, US	24/09/2007	TCS	Routine
<input type="checkbox"/> des	Court Cases	<a href="#">www/10/2007/15620/2007</a>	File	TCS User2, DySO	14/08/2007	TCS	Routine
<input type="checkbox"/> des	Processing Of PAQs	<a href="#">vvv/10/2007/11310/2007</a>	File	TCS User2, DySO	13/08/2007	TCS	Routine
<input type="checkbox"/> Implementation of IWDMS in LC office	Monitoring of Civil Court Cases - C Branch	<a href="#">www/10/2007/9594/2007</a>	File	TCS User2, DySO	10/08/2007	TCS	Routine
<input type="checkbox"/> desc	Court Cases	<a href="#">mmm/10/2007/11122/2007</a>	File	TCS User2, DySO	07/08/2007	TCS	Routine
<input type="checkbox"/> regulation of SEZ	Permission to sell land for Non-Agricultural purposes for Tribal	<a href="#">trv/10/2007/10614/A</a>	File	TCS User2, DySO	01/08/2007	TCS	Routine
<input type="checkbox"/> A new file tst/10/2007/10665/A has come in your Seen(Approved/Not Approved) Files	TCS Test Subject 1	<a href="#">tst/10/2007/10665/A</a>	Intimation	SYS Admin, Secy	01/08/2007	TCS	Routine
<input type="checkbox"/> rrr	Monitoring of Civil Court Cases - C Branch	<a href="#">trv/12/2007/10198/A</a>	File	TCS User2, DySO	24/07/2007	TCS	Routine
<input type="checkbox"/> A new file xyz/11/2007/9367/A has come in your Seen(Approved/Not Approved) Files	IMS	<a href="#">xyz/11/2007/9367/A</a>	Intimation	TCS User7, DS	19/07/2007	TCS	Routine
<input type="checkbox"/> A new file pqr/10/2007/9902/A has come in your Seen(Approved/Not Approved) Files	Grant Release Order(Plan)	<a href="#">pqr/10/2007/9902/A</a>	Intimation	SYS Admin, Secy	19/07/2007	TCS	Routine
<input type="checkbox"/> A new file wq/10/2007/9904/A has come in your Seen(Approved/Not Approved) Files	Grant Release Order(NonPlan)	<a href="#">wq/10/2007/9904/A</a>	Intimation	SYS Admin, Secy	19/07/2007	TCS	Routine
<input type="checkbox"/> des	Jan Sampark Grievance	<a href="#">trv/15/2007/9549/JS6</a>	File	TCS User2, DySO	10/07/2007	TCS	Routine
<input type="checkbox"/> des	Court Cases	<a href="#">rrr/14/2007/9543/A</a>	File	TCS User2, DySO	10/07/2007	TCS	Routine
<input type="checkbox"/> For Letter	Jan Sampark Grievance	<a href="#">mmm/15/2007/9479/JS6</a>	File	TCS User2, DySO	09/07/2007	TCS	Routine
<input type="checkbox"/> qqq	Court Cases	<a href="#">rhv/13/2007/9450/A</a>	File	TCS User2, DySO	07/07/2007	TCS	Routine
<input type="checkbox"/> des	Jan Sampark Grievance	<a href="#">rtv/14/2007/9449/JS6</a>	File	TCS User2, DySO	07/07/2007	TCS	Routine
<input type="checkbox"/> desc	Processing Of PAQs	<a href="#">trv/10/2007/9446/A</a>	File	TCS User2, DySO	07/07/2007	TCS	Routine
<input type="checkbox"/> desc	Monitoring of Civil Court Cases - C Branch	<a href="#">trv/10/2007/9415/A</a>	File	TCS User2, DySO	06/07/2007	TCS	Routine
<input type="checkbox"/> Desssss	Jan Sampark Grievance	<a href="#">trv/15/2007/9414/JS6</a>	File	TCS User2, DySO	06/07/2007	TCS	Routine

File in Non-Editable form

File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES

Save Send To File Actions Pendency File Sent List Close Move To Folder

Hide Noting Hide Correspondence Show FileInfo

Noting side Tappal Side Precedent Cases Drafts Reference Docs Check List Linked Files Basic Info

Print Print Priority Cancel

**Legislative Assembly Question Details**

Letter No. : 220 Letter Dated : 29/04/2008  
 Subject : Sample Subject Department : TCS  
 Question Raised By : Shri Nitinkumar Patel Constituency : Kadi  
 LAQ Type : Starred  
 Session : 1 Vidhan Sabha : 12  
 To be Replied By : Constituency :  
 HOD Info Required : No

**Question and Answer Details**

Question No. : 543 Previous Related Question No. :  
 Supplementary Question : No  
 Question : Sample Question  
 Brief Answer : Sample Answer  
 Assurance : Sample Assurance  
 Attachment :

**Sub Item Details**

Sr.No.	Sub Item Question	Sub Item Answer	Sub Item Attachment
1	Sample Sub Question	Sample Sub Answer	

**Status Details**

Due Date of Sending Replies : 29/04/2008 Reply Date in Assembly : 21/05/2008  
 Priority No. : No. Of Copies : 4  
 LAQ Status : OPEN Discussed in Assembly : No  
 Revised Date in Assembly :

Print Option

Report - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES



### Gujarat Vidhan Sabha

Starred Question No. :543  
Reply Date in Assembly: 21/05/2008

---

Sample Question

---

 543  
**Shri Nitinkumar Patel(Kadi)**

**Hon. Chief Minister (TCS Test Department), request you to let us know:**

No.	Question	No.	Answer
(1)	Sample Sub Question	(1)	Sample Sub Answer

**File No.:** LAQ/13/2008/21662/A  
TCS Test Department, Government of Gujarat,  
Secretariat, Gandhinagar.  
Date: 29/04/2008

To  
Respected Secretary

Gujarat Vidhan Sabha Secretariat, letter dated 29/04/2008 with no. 220 sending 3 extra copies  
( )  
Deputy Secretary  
TCS Test Department  
Government of Gujarat

Copies to be send:

- Branch, TCS Test Department, Secretariat, Gandhinagar.
- Gujarat Udhogvikas Nigam, Udhog Bhavan, sec-11, Gandhinagar.
- Udhog Commissioner kacheri, Udhog Bhavan, Gandhinagar.
- Branch Select File

File in Non-editable form

File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES

Save Send To File Actions Pendency File Sent List Close Move To Folder

Forward  
Return  
Hide Correspondence Show FileInfo

Noting side Tapp Dispose nt Cases Drafts Reference Docs Check List Linked Files Basic Info

Print Print Priority Cancel

**Legislative Assembly Question Details**

Letter No. : 220 Letter Dated : 29/04/2008  
 Subject : Sample Subject Department : TCS  
 Question Raised By : Shri Nitinkumar Patel Constituency : Kadi  
 LAQ Type : Starred  
 Session : 1 Vidhan Sabha : 12  
 To be Replied By : Constituency :  
 HOD Info Required : No

**Question and Answer Details**

Question No. : 543 Previous Related Question No. :  
 Supplementary Question : No  
 Question : Sample Question  
 Brief Answer : Sample Answer  
 Assurance : Sample Assurance  
 Attachment :

**Sub Item Details**

Sr.No.	Sub Item Question	Sub Item Answer	Sub Item Attachment
1	Sample Sub Question	Sample Sub Answer	

**Status Details**

Due Date of Sending Replies : 29/04/2008 Reply Date in Assembly : 21/05/2008  
 Priority No. : No. Of Copies : 4  
 LAQ Status : OPEN Discussed in Assembly : No  
 Revised Date in Assembly :

# File Send Options

**File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES**

Save Send To File Actions Pendency File Sent List Close Move To Folder

Within Hierarchy Parallel Files (One/Many) Hide Correspondence Show FileInfo

Not limit AnyOne / MultipleFiles Drafts Reference Docs Check List Linked Files Basic Info

---

Print Print Priority Cancel

**Legislative Assembly Question Details**

Letter No. : 220 Letter Dated : 29/04/2008  
 Subject : Sample Subject Department : TCS  
 Question Raised By : Shri Nitinkumar Patel Constituency : Kadi  
 LAQ Type : Starred  
 Session : 1 Vidhan Sabha : 12  
 To be Replied By : Constituency :  
 HOD Info Required : No

**Question and Answer Details**

Question No. : 543 Previous Related Question No. :  
 Supplementary Question : No  
 Question :   
 Brief Answer :   
 Assurance :   
 Attachment :

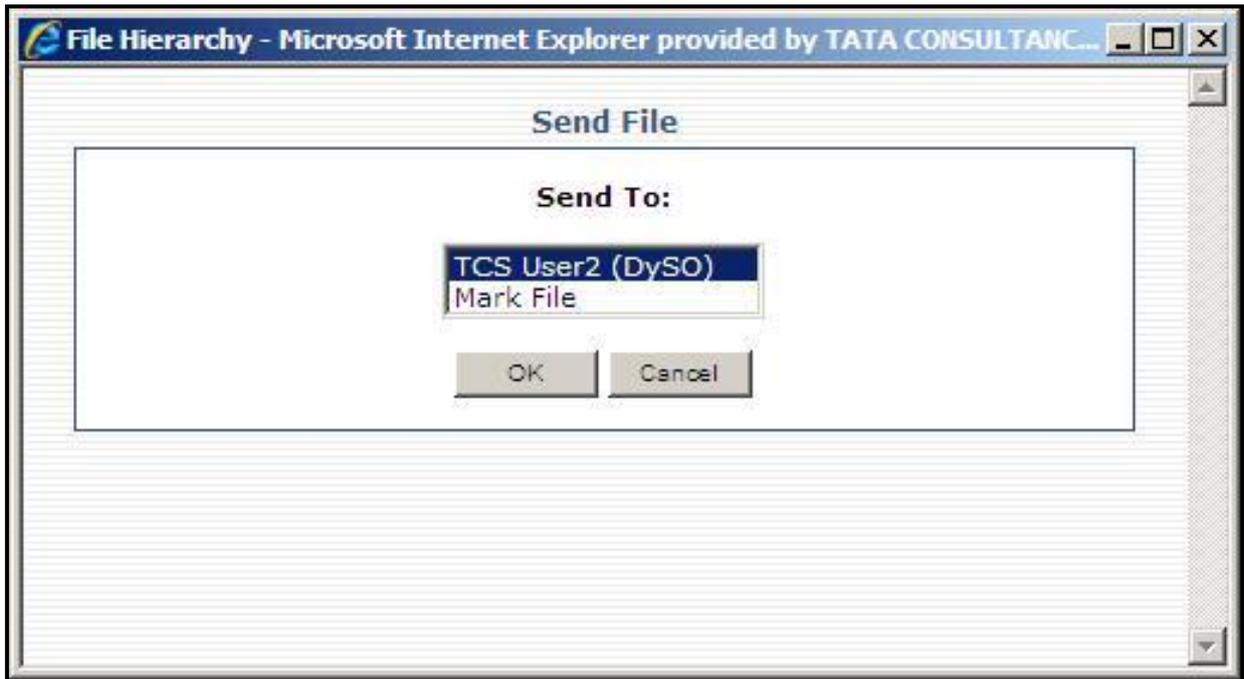
**Sub Item Details**

Sr.No.	Sub Item Question	Sub Item Answer	Sub Item Attachment
1	<input type="text" value="Sample Sub Question"/>	<input type="text" value="Sample Sub Answer"/>	<input type="text"/>

**Status Details**

Due Date of Sending Replies : 29/04/2008 Reply Date in Assembly : 21/05/2008  
 Priority No. : No. Of Copies : 4  
 LAQ Status : OPEN Discussed in Assembly : No  
 Revised Date in Assembly :

# Send Within Hierarchy



File can be sent to Anyone in Any Department

File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES

Save Send To File Actions Pendingy File Sent List Close Move To Folder

Within Hierarchy Parallel Files (One/Many) Hide Correspondence Show FileInfo

Noting AnyOne / MultipleFiles nt Cases Drafts Reference Docs Check List Linked Files Basic Info

Print Print Priority Cancel

**Legislative Assembly Question Details**

Letter No. : 220 Letter Dated : 29/04/2008  
 Subject : Sample Subject Department : TCS  
 Question Raised By : Shri Nitinkumar Patel Constituency : Kadi  
 LAQ Type : Starred  
 Session : 1 Vidhan Sabha : 12  
 To be Replied By : Constituency :  
 HOD Info Required : No

**Question and Answer Details**

Question No. : 543 Previous Related Question No. :  
 Supplementary Question : No  
 Question : Sample Question  
 Brief Answer : Sample Answer  
 Assurance : Sample Assurance  
 Attachment :

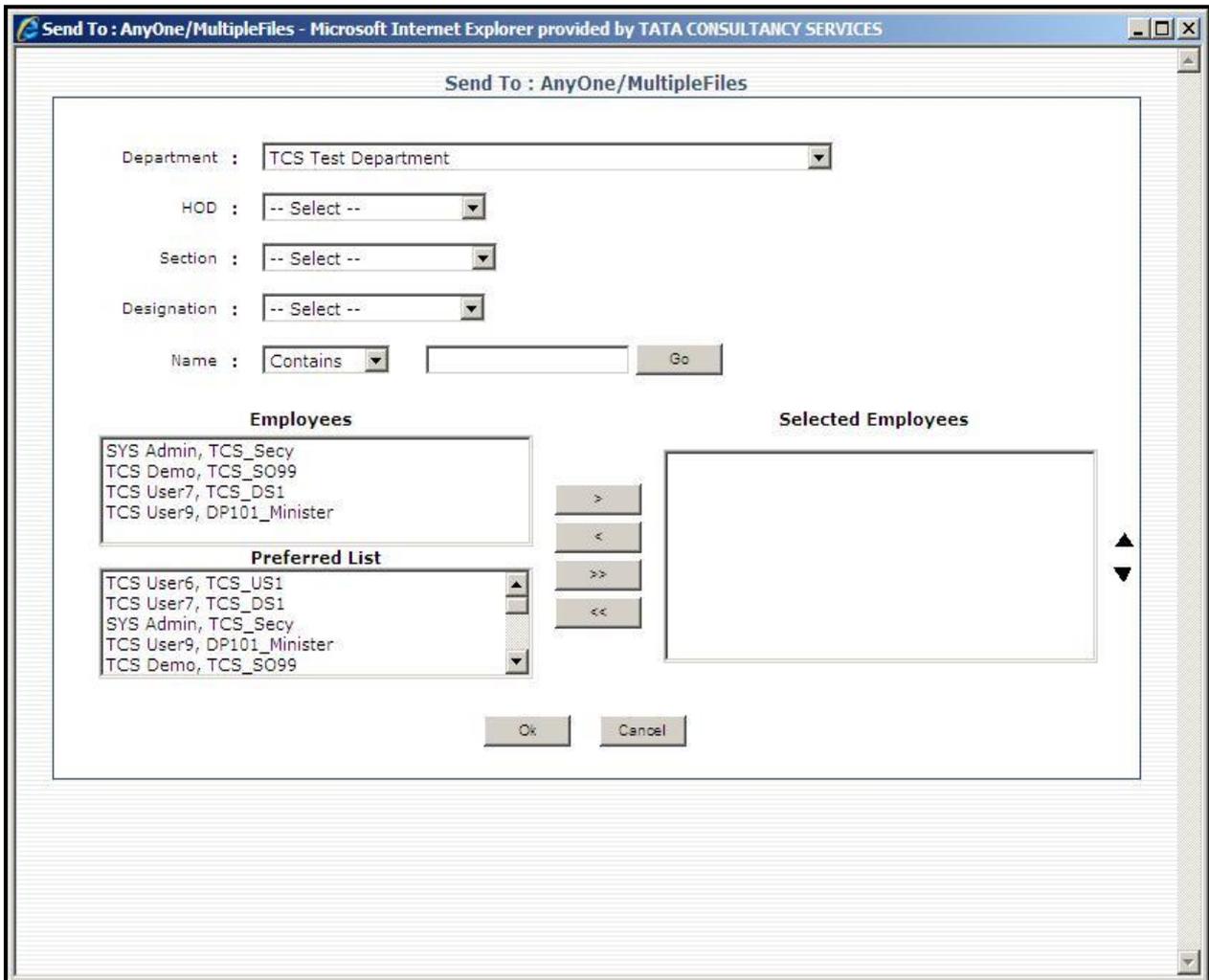
**Sub Item Details**

Sr.No.	Sub Item Question	Sub Item Answer	Sub Item Attachment
1	Sample Sub Question	Sample Sub Answer	

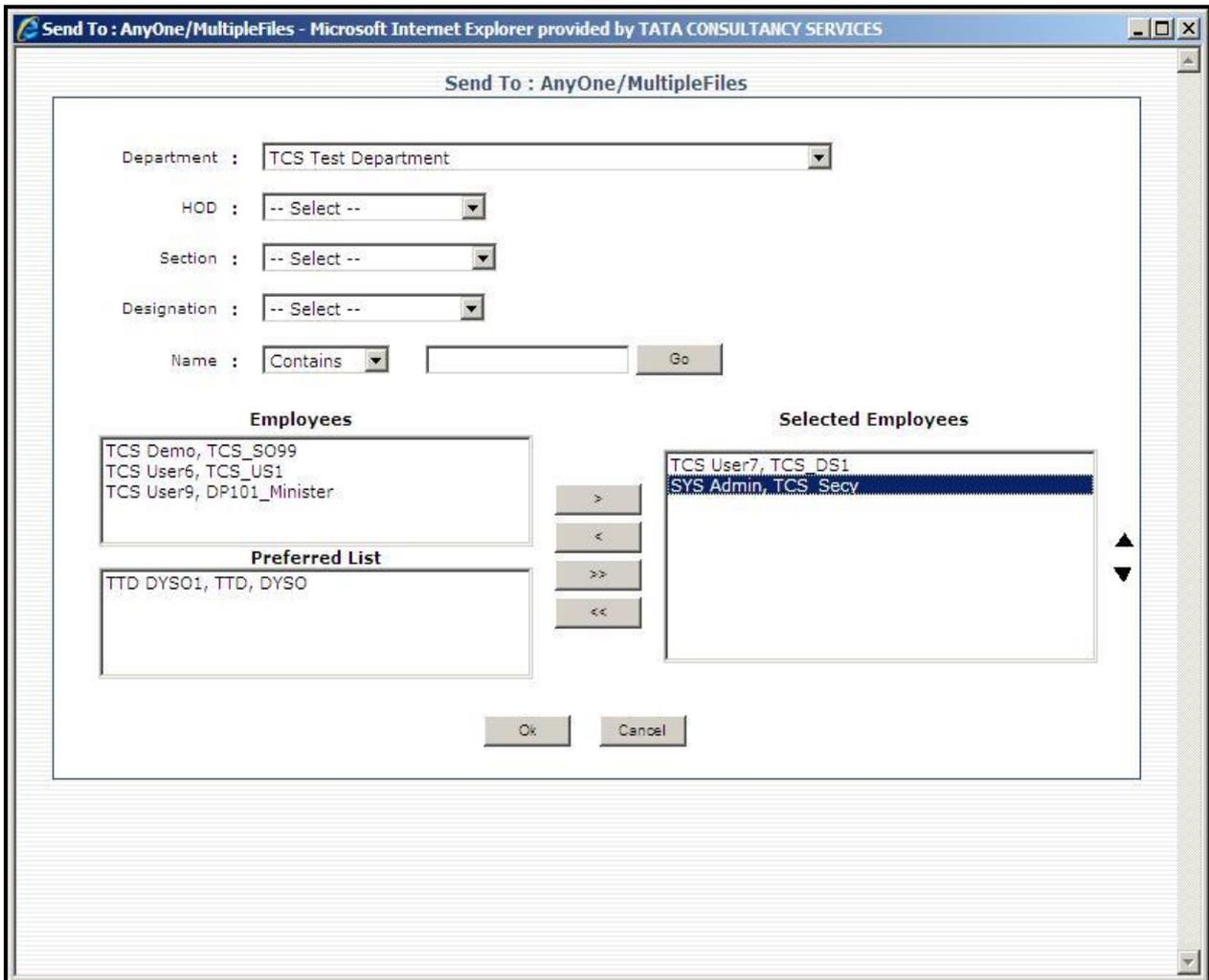
**Status Details**

Due Date of Sending Replies : 29/04/2008 Reply Date in Assembly : 21/05/2008  
 Priority No. : No. Of Copies : 4  
 LAQ Status : OPEN Discussed in Assembly : No  
 Revised Date in Assembly :

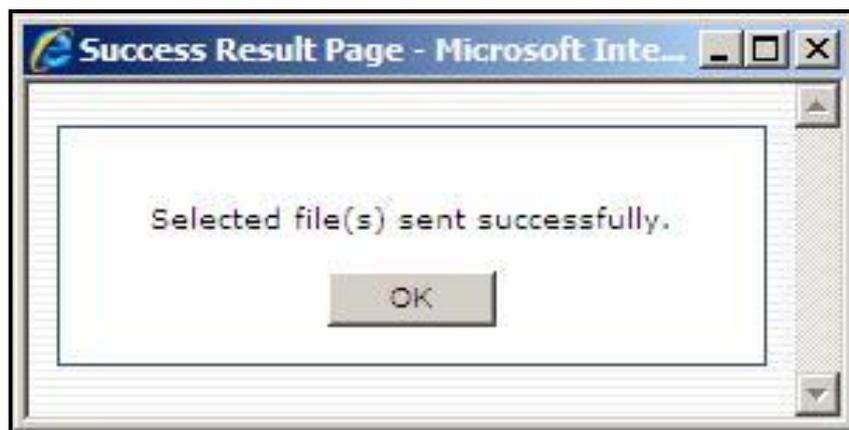
# Send to Anyone Option



# User can set Hierarchy



File sent Successfully Intimation



File on Next Higher Officer Screen

**TATA CONSULTANCY SERVICES**

Welcome TCS User2, Deputy Section Officer, TCS  
Tue 29 Apr 2008

Worklist Files Room Reference Docs Dashboard Reports Applications

Search Home Help LogOut

Worklist > Files

1-25 of 28 Search: in File Number

Description	Subject	File Number	Doc Type	From	Rcvd Date	Dept	Priority
LAQ from TCS User4	Processing Of PAQs	LAQ/13/2008/21662/A	File	TCS User6, US	29/04/2008	TCS	Routine
fghfh	Ad-Hoc Appointment (HFW)	adfi/10/2007/18608/2007	File	TCS User4, SO	23/10/2007	TCS	Routine
test	TCS Test Subject 1	ppp/10/2007/18146/2007	File	TCS User7, DS	25/09/2007	TCS	Routine
A new file tri/13/2007/18550/2007 has come in your Seen(Approved/Not Approved) Files	TCS Test Subject 1	tri/13/2007/18550/2007	Intimation	TCS User4, SO	24/09/2007	TCS	Routine
A new file ADR/16/2007/18552/2007 has come in your Seen(Approved/Not Approved) Files	Monitoring of Civil Court Cases - J Branch	ADR/16/2007/18552/2007	Intimation	TCS User6, US	24/09/2007	TCS	Routine
des	Court Cases	www/10/2007/15620/2007	File	TCS User2, DySO	14/08/2007	TCS	Routine
des	Processing Of PAQs	www/10/2007/11310/2007	File	TCS User2, DySO	13/08/2007	TCS	Routine
Implementation of IWDMS in LC office	Monitoring of Civil Court Cases - C Branch	www/10/2007/9594/2007	File	TCS User2, DySO	10/08/2007	TCS	Routine
desc	Court Cases	mmm/10/2007/11122/2007	File	TCS User2, DySO	07/08/2007	TCS	Routine
regulation of SEZ	Permission to sell land for Non-Agricultural purposes for Tribal	trv/10/2007/10614/A	File	TCS User2, DySO	01/08/2007	TCS	Routine
A new file tst/10/2007/10665/A has come in your Seen(Approved/Not Approved) Files	TCS Test Subject 1	tst/10/2007/10665/A	Intimation	SYS Admin, Secy	01/08/2007	TCS	Routine
rrr	Monitoring of Civil Court Cases - C Branch	trv/12/2007/10198/A	File	TCS User2, DySO	24/07/2007	TCS	Routine
A new file xyz/11/2007/9367/A has come in your Seen(Approved/Not Approved) Files	IMS	xyz/11/2007/9367/A	Intimation	TCS User7, DS	19/07/2007	TCS	Routine
A new file pqr/10/2007/9902/A has come in your Seen(Approved/Not Approved) Files	Grant Release Order(Plan)	pqr/10/2007/9902/A	Intimation	SYS Admin, Secy	19/07/2007	TCS	Routine
A new file wq/10/2007/9904/w has come in your Seen(Approved/Not Approved) Files	Grant Release Order(NonPlan)	wq/10/2007/9904/w	Intimation	SYS Admin, Secy	19/07/2007	TCS	Routine
des	Jan Sampark Grievance	trv/15/2007/9549/JSG	File	TCS User2, DySO	10/07/2007	TCS	Routine
des	Court Cases	rrr/14/2007/9543/A	File	TCS User2, DySO	10/07/2007	TCS	Routine
For Letter	Jan Sampark Grievance	mmm/15/2007/9479/JSG	File	TCS User2, DySO	09/07/2007	TCS	Routine
qqq	Court Cases	trh/13/2007/9450/A	File	TCS User2, DySO	07/07/2007	TCS	Routine
des	Jan Sampark Grievance	trv/14/2007/9449/JSG	File	TCS User2, DySO	07/07/2007	TCS	Routine
desc	Processing Of PAQs	trv/10/2007/9446/A	File	TCS User2, DySO	07/07/2007	TCS	Routine
desc	Monitoring of Civil Court Cases - C Branch	trv/10/2007/9415/A	File	TCS User2, DySO	06/07/2007	TCS	Routine
Desssss	Jan Sampark Grievance	trv/15/2007/9414/JSG	File	TCS User2, DySO	06/07/2007	TCS	Routine

Please Note  
You can create  
-Court Case File  
-Audit para File  
-PAC File  
-LAQ File  
-LA Bills File

Using Create File menu & selecting any of the above as Subject

## Higher Officer can Approve the File

**Legislative Assembly Question Details**

Letter No.	: 220	Letter Dated	: 29/04/2008
Subject	: Sample Subject	Department	: TCS
Question Raised By	: Shri Nitinkumar Patel	Constituency	: Kadi
LAQ Type	: Starred		
Session	: 1	Vidhan Sabha	: 12
To be Replied By	:	Constituency	:
HOD Info Required	: No		

**Question and Answer Details**

Question No.	: 543	Previous Related Question No.	:
Supplementary Question	: No		
Question	: Sample Question		
Brief Answer	: Sample Answer		
Assurance	: Sample Assurance		
Attachment	:		

**Sub Item Details**

Sr.No.	Sub Item Question	Sub Item Answer	Sub Item Attachment
1	Sample Sub Question	Sample Sub Answer	

**Status Details**

Due Date of Sending Replies	: 29/04/2008	Reply Date in Assembly	: 21/05/2008
Priority No.	:	No. Of Copies	: 4
LAQ Status	: OPEN	Discussed in Assembly	: No
Revised Date in Assembly	:		

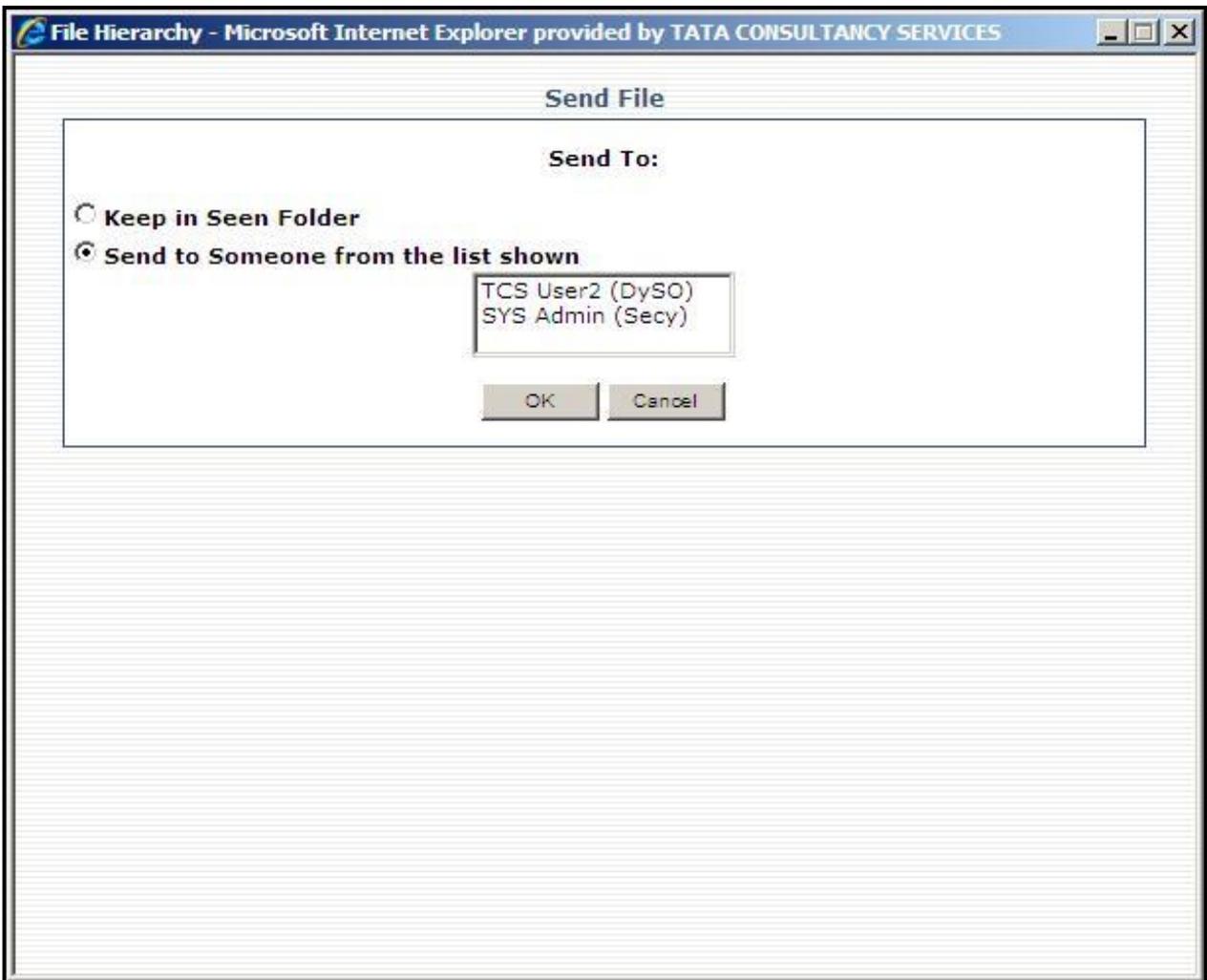
# Prompt for Approval

The screenshot displays a web application window titled 'File Management System - Microsoft Internet Explorer provided by TATA CONSULTANCY SERVICES'. The interface includes a top navigation bar with buttons like 'Save', 'Send To', 'File Actions', 'Pendency', 'File Sent List', 'Close', and 'Move To Folder'. Below this is a secondary bar with 'Noting side', 'Tapp', 'Approve', 'nt Cases', 'Drafts', 'Reference Docs', 'Check List', 'Linked Files', and 'Basic Info'. The main content area is divided into several sections:

- Legislative Assembly Question Details:** A form with fields for Letter No. (220), Letter Dated (29/04/2008), Subject (Sample Subject), Department (TCS), Question Raised By (Shri Nitinkumar Patel), Constituency (Kadi), LAQ Type (Starred), Session (1), Vidhan Sabha (12), To be Replied By, and HOD Info Required (No).
- Question and Answer Details:** A form with fields for Question No. (543), Previous Related Question No., Supplementary Question (No), Question (Sample Question), Brief Answer (Sample Answer), Assurance (Sample Assurance), and Attachment.
- Sub Item Details:** A table with columns for Sr.No., Sub Item Question, Sub Item Answer, and Sub Item Attachment. It contains one row with '1', 'Sample Sub Question', 'Sample Sub Answer', and an attachment icon.
- Status Details:** A form with fields for Due Date of Sending Replies (29/04/2008), Reply Date in Assembly (21/05/2008), Priority No., No. Of Copies (4), LAQ Status (OPEN), Discussed in Assembly (No), and Revised Date in Assembly.

A 'Windows Internet Explorer' dialog box is overlaid on the 'Question and Answer Details' section, displaying a question mark icon and the text 'Do you want to approve this file?' with 'OK' and 'Cancel' buttons.

## Whom to send Approval Intimation



## File Sent Intimation



# Approval Intimation in User's Screen

Preview ▾
My Notings
Move To Folder
Preferred List
Re-submit
Send To ▾
Seen
Move To WorkList

Refresh Worklist

- Worklist
- Files
- Tappals
- Intimation
- Seen(Approved/Not)
- All Document(s)
- Sent Files
- Sent Tappal(s)
- Communique Monit
- Iconic View
- Action Items
- Budget Folder

**Please Note**

You can create

- Court Case File
- Audit para File
- PAC File
- LAQ File
- LA Bills File

Using Create File menu & selecting any of the above as Subject

Worklist > Seen(Approved/Not Approved) Files

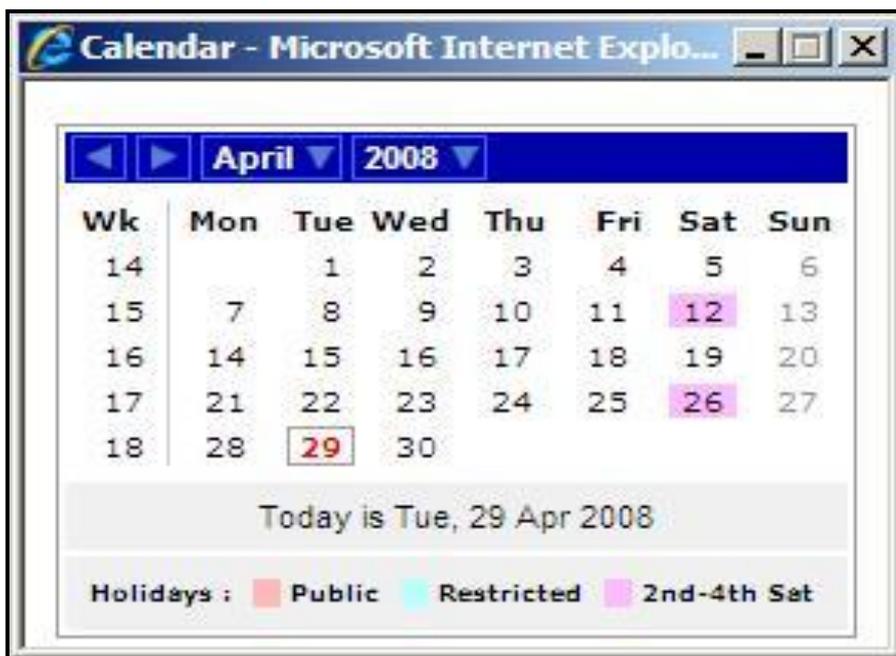
« 1-9 of 9 » Search :  in File Number

Description	Priority	From	Rcvd Date	File No.	Dept	Subject	Stage
<input type="checkbox"/> LAQ from TCS User4	Routine	TCS User7, DS	29/04/2008	<a href="#">LAQ/13/2008/21662/A</a>	TCS	Processing Of PAQs	Approved
<input type="checkbox"/> abcde	Routine	TCS User4, SO	25/09/2007	<a href="#">tri/13/2007/18550/2007</a>	TCS	TCS Test Subject 1	Approved
<input type="checkbox"/> First case....	Routine	TCS User6, US	24/09/2007	<a href="#">ADR/16/2007/18552/2007</a>	TCS	Monitoring of Civil Court Cases - J Branch	Approved
<input type="checkbox"/> Testing for Incoming	Routine	SYS Admin, Secy	01/08/2007	<a href="#">test/10/2007/10665/A</a>	TCS	TCS Test Subject 1	Approved
<input type="checkbox"/> please do fast	Routine	TCS User7, DS	19/07/2007	<a href="#">xyz/11/2007/9367/A</a>	TCS	IMS	Approved
<input type="checkbox"/> ગ્રાંટ રીલીઝ ઓર્ડર	Routine	SYS Admin, Secy	19/07/2007	<a href="#">xyz/10/2007/9904/A</a>	TCS	Grant Release Order(NonPlan)	Approved
<input type="checkbox"/> created by xxxxxxx	Routine	SYS Admin, Secy	19/07/2007	<a href="#">par/10/2007/9902/A</a>	TCS	Grant Release Order(Plan)	Approved
<input type="checkbox"/> test	Routine	TCS User4, SO	18/07/2007	<a href="#">tri/10/2007/8999/A</a>	TCS	TCS Test Subject 1	Approved
<input type="checkbox"/> test	Routine	TCS User4, SO	19/06/2007	<a href="#">test/11/2007/8830/35G</a>	TCS	Jan Sampark Grievance	Approved

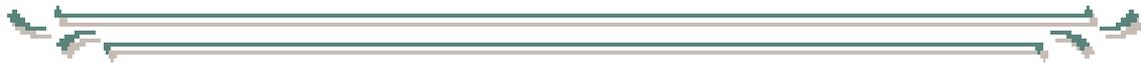
« 1-9 of 9 »

Legends : ■ New File ■ Physical File ■ Other Files

# Java Script Calendar



## **9. LIMITATION AND FUTURE ENHANCEMENT**



## 9. LIMITATION AND FUTURE ENHANCEMENT

### LIMITATIONS

The part of the system can be implemented using the current technology although some modifications had to be done at various places. To generate graph a software Jeffery would be used, apart from this at various places some alterations with the prototypes and functionalities would be done in order to work out the cost constraints and to cope with the scheduling constraints.

In the Parameterized report limitations like selecting at most up to eight fields, etc would be implemented. This is done to get optimum balance between the requirements and cost factors. Similarly in Generation of Graphs, selection of one type of graph would in turn disable the other types of graphs generation only one type of graphs at one request.

Moreover, in Query based Parameterized Report the conditional field would be configured and it would be limited to only one query, however long it may be with any number of conjunctions could be evaluated.

#### ➤ Enhancement

The following activities would be undertaken, as appropriate, as part of the application maintenance and would focus on elimination of production errors if any:

- Understand and analyze any enhancement requests
- Propose a solution and estimate to develop the enhancement request
- Construction and testing of the enhancement

#### Helpdesk

TCS would setup a Helpdesk facility at the Client Side to help users at different locations within the client. The help-desk will deal with the problems faced by end-users in the areas of:

- Operation of the System
- Database Administration
- Application software
- Difficulties in understanding navigation flow and general functionality of the Application system.

The setup allows TCS to solve problems by providing solution to the users either over a telephone or by simulating the problem, logging it, marking it as a defect. The problem reported could be a defect in the system due to non-satisfaction of requirements or a change in requirements leading to enhancements. The following are the methods, which will be used to facilitate the help desk.

- *Telephone call support, Fax – the user can call to specified office numbers to get their queries solved. This facility will be operational during the normal working hours.*
- *E-mail support – the user can send their queries through e-mails.*
- *FAQs – the support will also be offered through Frequently Asked Questions (FAQs). This is a list that will be compiled from the most frequently encountered doubts and questions and will be provided to all users at a central location and updated periodically.*

Based on its experience, TCS proposes to extend this helpdesk as a centralized helpdesk for all Client officers/users so that all calls either related to MBAQA or Hardware, Network, Anti-Virus are received here first and later diverted to relevant vendors working on these profiles. In this case, the centralized helpdesk need to be made up with personnel from all the vendors working on the above areas at Gujarat Client. This helpdesk would be the single point of contact for all the help that users require at Client.

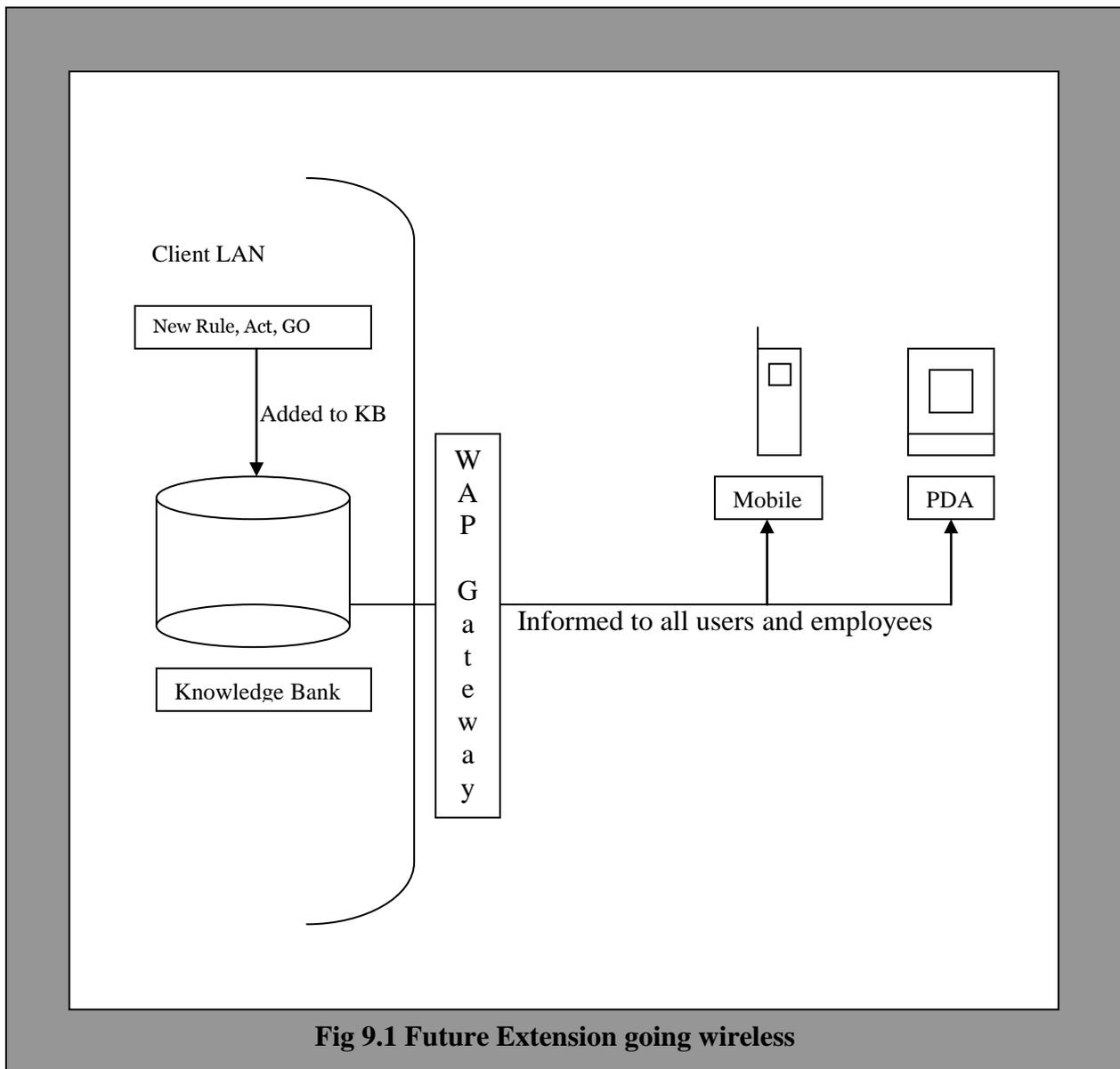
### **Usage of Libraries:**

Configuration control would be implemented through the use of Software libraries. These libraries provide the means of identifying, labeling and capturing software items and tracking changes to them. Libraries to be used in would be identified depending on their usage.

*Improvements possible*

The future of the e-Governance is in going wireless. PDAs, Laptops with Wi-Fi, Mobiles all wireless devices can be used in e-Governance and can play an important role for effective administration.

Any new update in Knowledge Bank can be delivered to employees on their wireless devices. Employees can subscribe to such facilities to get themselves updated at any time, even when they are not at their desk.



**Fig 9.1 Future Extension going wireless**

We can connect all the district administrative offices to Client.

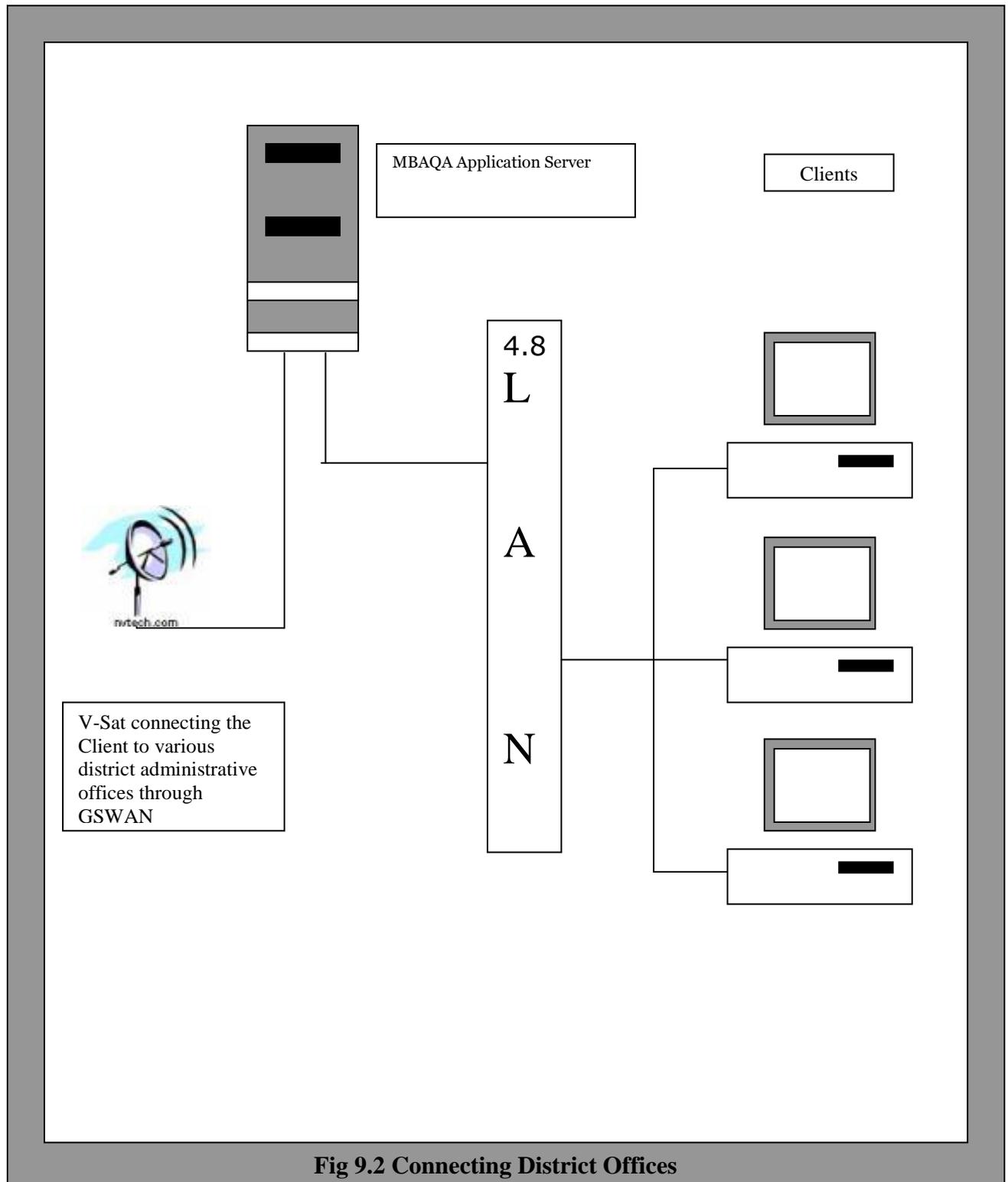


Fig 9.2 Connecting District Offices

## 10. CONCLUSION AND DISCUSSION



## 10. CONCLUSION AND DISCUSSION

The MBAQA Project (Medical Bill and Assembly Question Application) is intended to address all these requirements and aspects discussed earlier such as Security, Network Management, Filing System and Desktop Applications that will enable users to perform their work.

This Application provides Document management, Workflow, Collaboration environment and Knowledge Management in an integrated fashion and delivers as Electronic Workplace that will result in productivity improvement in an Organization.

### SUMMARY OF PROJECT WORK

Through out the process, I enjoyed working with the organization and it was a great learning experience. I had the privilege of going through entire Software Development Life Cycle right from the requirement gathering phase.

Working with a globally renowned CMM level-5 company, was a great learning experience to learn their standards and application areas. This company has widened my horizons of knowledge to a very large extent. Till now I was exposed only to the theoretical side of learning. With this project I have attained a lot of understanding from the practical point of view.

This immeasurable knowledge gaining experience for me has already sown its seeds into my career and I hope to carry it with me throughout my professional life.

This firm has not only helped me develop as a programmer but as an individual by letting me realize my potential and believing in my capabilities and hence boosting my confidence.

This project will always remain an integral part of my resume and I hope my wonderful experience here would provide a boost in my career as well.

**Appendix A – J-Developer**

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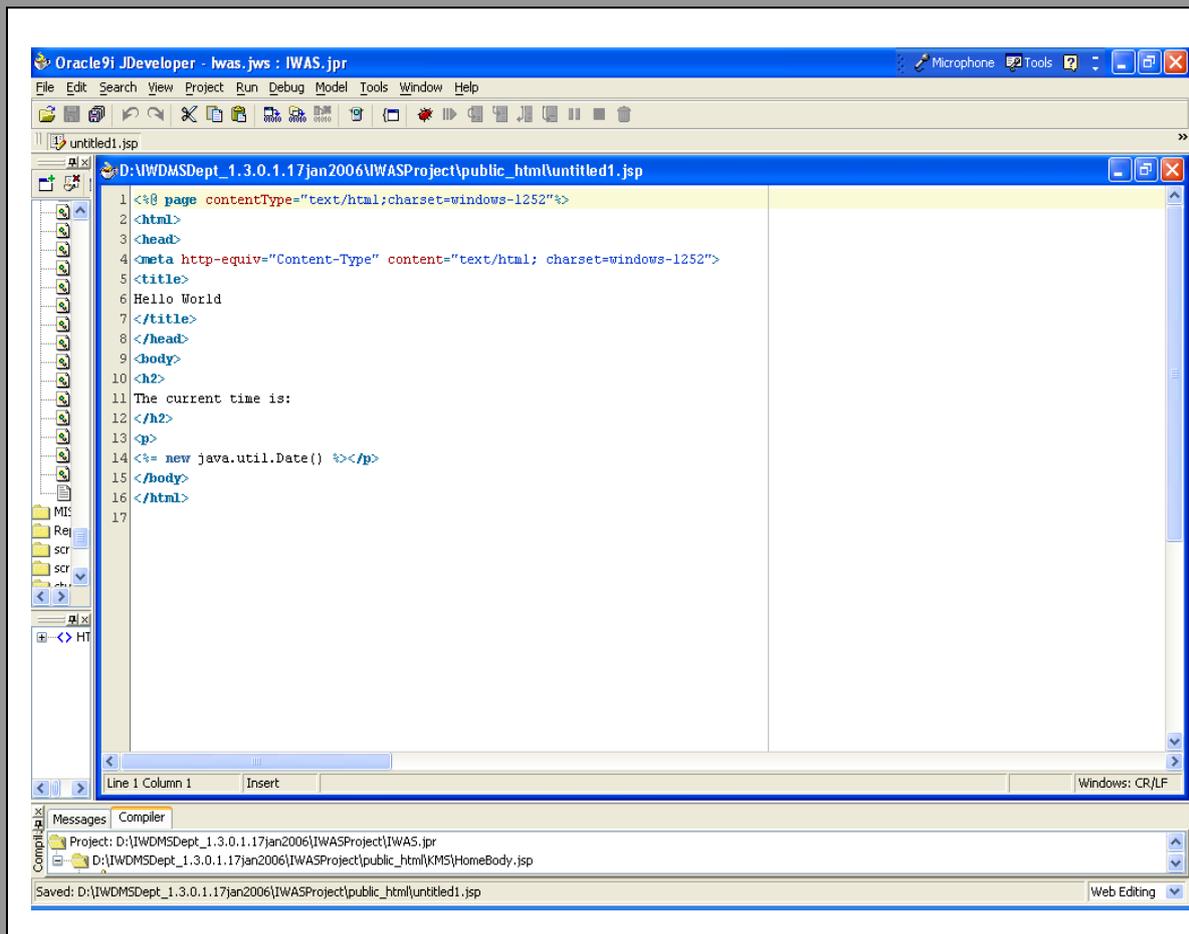
## Appendix A – J-Developer

Oracle9i JDeveloper is a J2EE™ (J2EE 1.3) development environment with end-to-end support for developing, debugging, and deploying e-business applications and web services.

Details about J-Developer 9.0.4 is given in Appendix B

Features of JDeveloper include:

- IDE
- J2EE 1.3
- Web Services
- UML Modeling
- Database Integration
- Team Development
- BC4J
- BC4J JSP
- UIX
- JClient

**Figure: JDeveloper**

## IDE

- Apache Ant Integration
  - Create Ant buildfiles from your existing JDeveloper project.
  - Use Ant as the IDE's internal build system.
  - Compile Ant projects using an Ant adapter for the Oracle Java Compiler.
- JUnit Integration
  - Use wizards for creating test cases, test suites, and test fixtures.
  - Generate automatic test cases for BC4J applications.
  - Test Fixture wizards for JDBC and BC4J connections.
  - Support for running test suites within JDeveloper.

- Enhanced Project Importing
  - Import source from a selected list of directories and subdirectories.
  - Apply Request filters and directory filters.
  - Import WAR (.war) files.
  - Import EAR (.ear) files.
  - Optionally copy the imported source to the default project directory.
- Extension Manager
  - Enable or disable installed Extensions.
  - Tracks dependencies between Extensions. Enabling an Extension will also enable any prerequisite Extensions.
  - Download and install new Extensions directly from OTN.
  - Download and install updated Extensions directly from OTN.
- External Tools
  - Provide quick access to your favorite external editors or tools.
  - Use macros to determine the "Run In" location.
  - Pass arguments to the external tools.
  - Invoke tools from the Main menu, Navigator context menu, Editor Context menu, and toolbar.
  - Configure conditions to control when the tool is enabled.
- Enhanced IDE
  - Set dockable windows to auto-hide.
  - Associate Request types by extension with node types in JDeveloper.
  - Locate objects easier in the New Gallery, which has been reorganized along the lines of J2EE development tasks.
  - Maintain libraries at User, Project, or System levels.
- Improved Project Configurations
  - Set dependencies between projects for better control when compiling and deploying applications composed of multiple projects.

- Base a project on the contents of its source path so that files added or removed to and from the source path will automatically be reflected in the project.
  - Set the compiler target of projects to J2SE 1.4.
- Enhanced Refactoring Support
  - Extract Method - Replaces one or more executable statements with a method call containing those statements.
  - Show Dependencies - For a given class, find out what other classes in your project use it, as well as what classes it uses.
- Code Editor Enhancements
  - Create and navigate to bookmarks.
  - Improve productivity using enhanced Code Insight, brace style options, syntax highlighting, and Javadoc comment assistance.
  - Organize Imports.
  - Record and playback macros.
  - Comment or uncomment a selected block of text.
- UI Debugger
  - Debug user interface components of Swing and AWT applications.
  - Examine the component hierarchy of applications.
  - Display component details in the Watches window.
  - Trace events generated by components.
- Profiler Enhancements
  - Profile with improved control using the new Restart, Stop, and Take Snapshot buttons.
  - Multi-select and sum events in the Event profiler.
  - Select events with ease using the enhanced user interface in the Event profiler.
- Create and edit any XML Request with speed, ease, and control.
  - Reduce keystrokes by leveraging code insight for attribute value data types.
  - Improve readability of your XML documents by instantly auto-indenting.

- Instantly synchronize location in code editor with the element in the structure pane.
- Verify XML syntax compliance and schema validity instantly.
- Create user-defined elements with Schema-driven component palette.
- Improved UI and Menu Editors
  - Quickly insert menus, menu items, subitems, separators, checkable items using the Menu Editor Toolbar.
  - Use the productive UI Editor Toolbar to improve design efficiency.
  - Design with heavy weight objects using automatic proxy mapping.
  - Design tabbed panels more efficiently using improved tab selection.

### **J2EE 1.3**

#### **1. JSP/Servlet**

##### ***Servlet 2.3***

- Runtime support of Servlet 2.3 and JSP 1.2
- Generate servlet filters using the Servlet Filter Wizard
- Generate servlet listeners using the Servlet ListenerWizard
- Enhanced Web Application Deployment Descriptor (Web.xml) Editor to support Servlet 2.3 and JSP 1.2

##### ***JSP 1.2***

- Support for JSP Document (XML version of JSP)
  - Generate JSP Documents using the JSP Document Wizard.
  - Code JSP Documents easier with Code Insight.
- Develop JSP 1.2 tag libraries using the JSP Tag Library.
- Place JSP 1.2 tag libraries for easy access on the Component Palette.

##### ***Integrated Struts Support***

- Embedded Struts 1.1 Runtime.

- Enable a project to use the Struts framework for JSP/Servlet applications using the Struts Starter Wizard.
- Generate Struts actions using the Struts Action Class Wizard.
- Create a Struts form bean using the Struts Form bean Wizard.
- Visually configure Struts configuration files using the Struts Console Editor.
- Use the Struts Tag Libraries from the Component Palette.

### *Web Development*

- Drop in Common HTML tags from the Component Palette using the HTML Toolbar.
- Using dialogs customize the component palette to generate HTML elements: table, forms, etc.
- Enhanced WebStart Wizard.
- Improved JSP page rendering with the JSP Previewer.
- Improved Component Palette management.
- Improved tag library management.

## **2. EJB 2.0**

- Create Session, Entity and Message Driven Beans for EJB 2.0 using wizards.
- Reverse Engineer database tables as EJB 2.0 CMP Entity Beans.
- Reverse Engineer Foreign Key relationships in the database as Container Managed Relationships.
- Use the EJB Module Editor to edit all the EJBs in the ejb-jar.xml deployment descriptor.
- Employ the EJB Verifier to validate ejb-jar.xml against Document Type Definition (DTD) and to verify EJB classes for inconsistencies.
- Develop EJB visually in a UML Class Diagram with synchronization between UML, code and deployment descriptor.

## **3. Deployment**

- Assemble standard J2EE archives such as EJB.jar / WAR / EAR.

- Deploy to Oracle9iAS and Weblogic 7.x with a single-click.
- Pass command-line options in deployment profiles.
- Add and assemble deployment descriptors - application-client.xml, orion-applicaiton-client.xml, data-sources.xml, application.xml, orion-applicaiton.xml, orion-web.xml and jboss.xml.
- Use the new Deployment Descriptor Editor for orion-web.xml and application-client.xml.
- Import existing EARs as Workspaces in JDeveloper using EAR Import Wizard J2EE 1.3 Certified Embedded OC4J Server.

### Web Services

- Build, publish, and discover - broader support for builders and users of web services including:
  - Publish PL/SQL procedures as web services
  - Access JMS Destinations as web services
  - Consume Document style web services (wrapped & literal)
  - Use complex parameter-types
  - Connect to and search UDDI registries for web services and generate client stubs to invoke them using the integrated UDDI browser
- Test and debug
  - Run web services locally in the embedded OC4J application server
  - Perform local and remote debugging of web services
  - Debug SOAP Message using the integrated TCP Packet Monitor
- Model - develop web services visually in a UML Class Diagram
  - Publish, run and access web services directly from a class diagram
  - Visualize dependencies between modeled web services and classes
- Interoperate with Microsoft .NET web services and web service clients

## UML Modeling

- Develop Enterprise Java Beans and web services visually in a UML Class Diagram.
  - Visualize session, entity and message beans, and the classes and interfaces implementing them; enables end-to-end development from database to client, driven from a UML Class Diagram.
  - Maintain synchronization between EJB model, java code and deployment descriptor.
  - Visualize web services and generate the WSDL and java classes implementing them; enables publishing, running and accessing web services directly from a UML Class Diagram.

## Database Integration

- Register Third-party JDBC Drivers.
  - Automatically create a library to be added to projects where the driver is used.
  - Maintain registered drivers from a central location.
  - No longer need to edit jdev.conf and restart JDeveloper to use third-party JDBC Type IV drivers.
- Debug PL/SQL and Java Stored Procedures.
  - Debug PL/SQL with Oracle8i, Oracle9i, or Oracle9i Release 2.
  - Debug Java stored procedures with Oracle9i Release 2.
  - Control program execution (Step Into, Step Over, Step Out, Run to Cursor, Pause, Resume, Terminate).
  - See and modify variable values (implicit, local, package body and package variables) during debugging.
  - Configure breakpoint conditions.
  - Remotely debug PL/SQL.
- Improved PL/SQL development
  - PL/SQL Code Insight for procedures and function names.
  - Run and debug procedures, functions, and packages with or without arguments.
  - View DBMS\_OUTPUT messages in the Log Window.
  - View Procedure, function, and package details in the Structure window.
  - See common syntax errors displayed in the Structure window at edit time.

- Improved Database Development
  - View SQL Worksheet statement history.
  - Leverage Tools to assist with creating tables (including columns and constraints), views, and triggers.
  - Optimized for very large schemas.

### **Team Development**

- Clear Case version 5 and 4.x support
- Enhanced CVS Support
  - Log in/out of CVS.
  - Use the CVS Connection wizard to create connections.
  - Authenticate using Secure Shell/CVSNT.
  - Use wizards to Import, Export & Check out of Module.
  - Use Navigator Overlay icons to represent additional states.
  - Set Common and Global options.
  - Use Edit/Watch and Tag-based operations.
  - Download a Revision by Name/Number.

### **Business Components for Java (BC4J) J2EE Framework**

- Create business components mapped to EJB 2.0 local entity beans. This enables entity bean programmers to take advantage of BC4J's validation and client binding capabilities.
- Implement application-level security easily using support for J2EE security standards (JAAS).
- Use new audit history attribute types, which BC4J automatically updates with the current date or the authenticated username.
- Tune queries proactively with interactive "Explain Plan" for View Objects and View Links.
- Save SQL generation scripts while forward engineering database tables.
- Edit pooling and scalability configuration settings more easily using the pooling and scalability configuration tool.
- Customize validation exceptions using resource bundles.

- Automatically passivate and activate dynamic View Objects and Attributes.
- Refresh rows back to last-posted or original state.
- Create and initialize default values for row in a single call.
- Further eliminate network round trips with batch metadata fetching.
- Declarative support for stateless service beans.
- Run and debug BC4J EJB Session Beans in the embedded OC4J container.

### **BC4J JSP**

- Use Client Data Model Support, which is now similar to JClient's model support.
- Generate a set of starter BC4J JSP development pages using the BC4J Starter Page(s) Wizard.
- Project Dependency Support - BC4J JSP clients now use a new dependency feature
- Enhanced BC4J Data Tag Library:
  - BC4J.CSS added to local project
  - Datasroller Tag improved with a drop down list
  - BC4J Intermedia tags added to Component Palette
- Struts support For BC4J JSP Applications:
  - Generate complete Struts enabled BC4J JSP applications using wizards.
  - Create BC4J JSP Struts with an action mapping using the Databound Struts Page Wizard.
- Employ the BC4J Data binding UI to improve the way you add BC4J data tags to JSP pages.
  - Browse BC4J Objects and select appropriate Data Tags.
  - Drag and drop tags directly into JSP pages.

### **UIX**

- Create highly interactive and responsive web pages with (patent-pending) Partial Page Rendering technology available through UIX's Table, Hide/Show and List-of-Values components.
- Integrate uiXML pages with Apache Struts applications seamlessly.

- Launch Struts events from uiXML pages.
- Render uiXML pages as a result of a Struts event.
- Create complete web apps with very little Java coding using UIX and BC4J.
  - Include BC4J InterMedia data without writing any extra Java code.
  - Leverage BC4J client data Request (.CPX) from within a uiXML page.
  - Iterate over rows of a BC4J view object from any UIX component.
  - Fine-tune data-bindings by attaching a single UIX component to different attributes of a BC4J row.
- Develop uiXML pages interactively and visually by observing results of code changes in the UIX Preview window.
- Lookup context-sensitive reference on uiXML tags directly using the F1 key.
- Make your UIX application accessible from mobile clients through native support for browsers running in PocketPC 2000 and 2002.
- Use UIX components directly from JavaServer Pages as custom tags.
- Fine-tune UIX configuration without writing any Java code using uix-config.xml.

### **JClient**

- Lazy loading of JClient controls allows you to specify that controls are only bound to their data source when they are realized. This prevents the creation of all data binding whether they are used or not.
- Drag and Drop panels from the component panel. Now you can easily create a library of re-usable panels, and drag and drop them directly from the component panel.
- Define a number of JClient preferences using the Tool preferences option on the IDE menu. You can now define a number of JClient preferences, allowing you to change aspects of the code generation for JClient.
- Support for JUArrayComboBox - Define a control which can be bound to a BC4J attribute that has been mapped as type Oracle.jbo.domain.array.
- Run JClient panels to test standalone. This option is provided as a convenience to test your JClient panels individually without the use of a frame containing the JClient bootstrap.

## **Appendix B – PL/SQL Developer**

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## Appendix B - PL/SQL Developer

### Overview

PL/SQL Developer is an Integrated Development Environment that is specifically targeted at the development of stored program units for Oracle Databases. Over time we have seen more and more business logic and application logic move into the Oracle Server, so that PL/SQL programming has become a significant part of the total development process. PL/SQL Developer focuses on ease of use, code quality and productivity, key advantages during Oracle application development.

### PL/SQL Developer's IDE

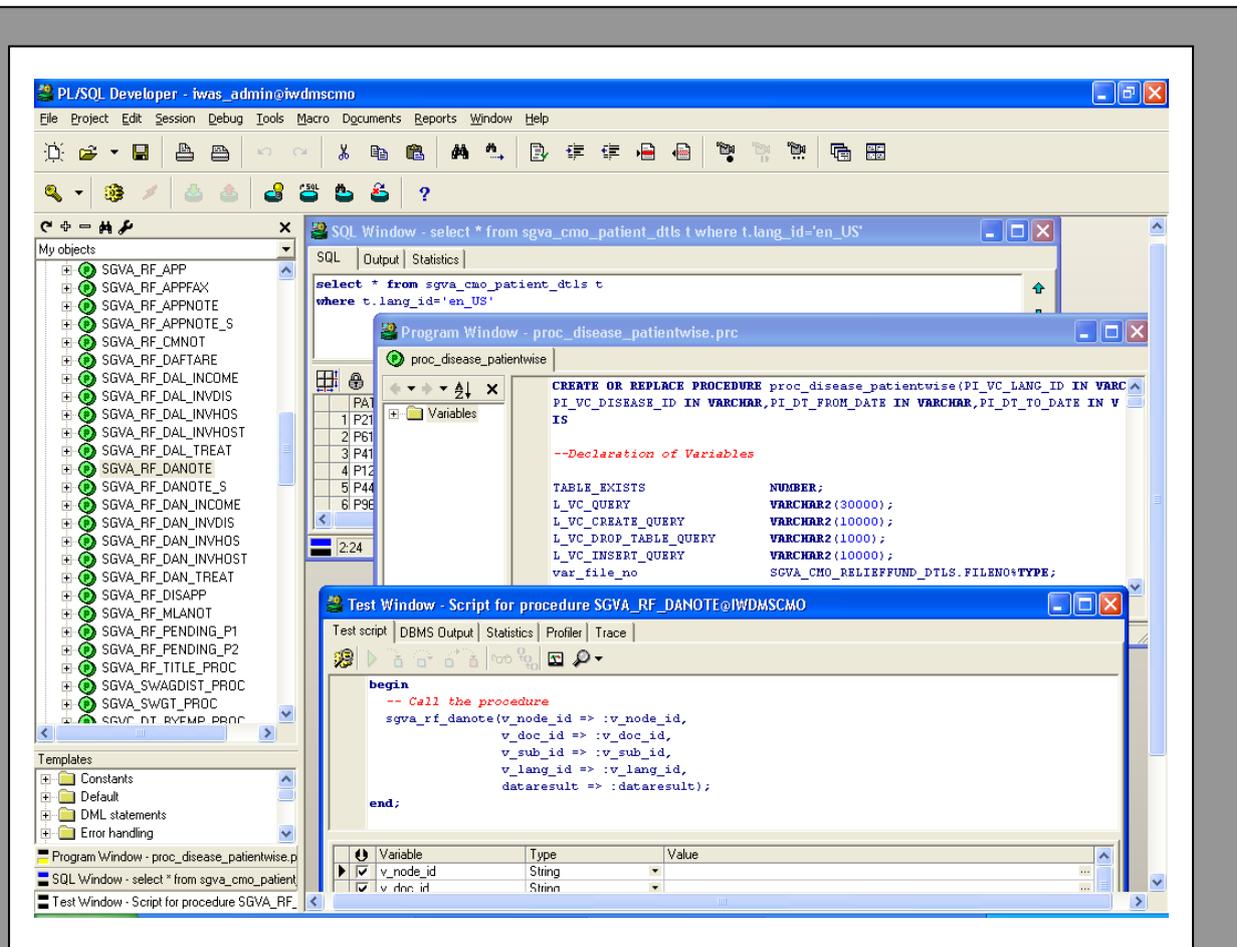


Figure: PL/SQL Developer IDE

**Major features of PL/SQL Developer:****Query Builder**

The graphical Query Builder makes it easy to create new select statements or modify existing ones. Just drag and drop tables and views, select columns for the field list, where clause and order by clause, join tables based on foreign key constraint definitions, and you're done.

**PL/SQL Beautifier**

The PL/SQL Beautifier allows you to format your SQL and PL/SQL code through a user-defined set of rules. Your code can automatically be beautified when you compile, save, or open a Request. This feature will increase your coding productivity and will improve the readability of your PL/SQL code if you are working in large project teams.

**SQL Window**

The SQL Window allows you to enter any SQL statement and view or edit the results in a grid, which supports a Query By Example mode to search specific records in a result set. You can easily recall previously executed SQL statements from a history buffer. The SQL editor provides the same powerful features as the PL/SQL Editor.

**Command Window**

To develop and execute SQL scripts you can use PL/SQL Developer's Command Window. This window has the same look and feel as SQL\*Plus, and additionally has a built-in script editor with corresponding syntax highlighting. Now you can develop your scripts without the "edit script / save it / switch to SQL\*Plus / run script" cycle, and without leaving the comfortable PL/SQL Developer IDE.

**Object Browser**

This configurable tree-view displays all information that is relevant to PL/SQL development. Use it to get object descriptions, to view object definitions, to create test scripts for the debugger, to enable and disable triggers and constraints, to recompile invalid objects, to query or edit table or view data, to search for text in

object sources, to drag and drop object names into an editor, and so on. The Object Browser additionally displays dependencies among objects, and lets you recursively expand these dependant objects (e.g. package references view, view references table, and son on).

### **Performance Optimizing**

To optimize the performance to your SQL and PL/SQL code, you can use the PL/SQL Profiler to view timing information of each executed line of PL/SQL code (Oracle8i and later). Furthermore you can automatically get statistics on executed SQL statements and PL/SQL programs. These statistics can include CPU usage, block I/O, record I/O, table scans, sorts, and so on.

### **Non-PL/SQL Objects**

You can view, create and modify tables, sequences, synonyms, libraries, directories, users and roles without using any SQL. Just enter the information in an easy to use form, and PL/SQL Developer will generate the appropriate SQL to create or alter the object.

### **Export User Objects**

To export the DDL (Data Definition Language) statements of a selection of objects of a user, you can use the Export User Objects tool. This way you can easily recreate the objects for another user, or you can save the Request(s) as a backup.

### **Multi-threaded IDE**

PL/SQL Developer is a multi-threaded IDE. This means that you can continue to work as SQL queries are executing, PL/SQL programs are executing, debug sessions are running, and so on. It also means that the IDE will not "hang" if you make a programming error: you can break execution or save your work at any time.

**Appendix C - Abbreviations**

## Appendix C – Abbreviations

GUI	Graphical User Interface
LDAP	Lightweight Directory Access Protocol
PL/SQL	Procedural Language/Structured Query Language
SQL	Structured Query Language
XHTML	Extensible Hyper Text Markup Language
XML	Extensible Markup Language
CAS	Central Application System
CRS	Central Request System
CIS	Central Information System
CMM	Capability Maturity Model
DAS	Departmental Application System
HTML	Hyper Text Markup Language
DDB	Departmental Database
DRS	Departmental Request System
DIS	Departmental Information System
CORBA	Common Object Request Broker Architecture
IDE	Integrated Development Environment
KMS	Knowledge Management System
NMS	Network Management System
XHTML	Extensible Hyper Text Markup Language
XML	Extensible Markup Language

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