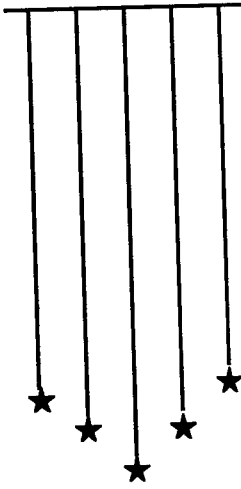


RECRUITMENT TOOL

PROJECT REPORT

Submitted in partial fulfillment of
the requirements for award of degree
M.Sc (Applied Science) Software Engineering



P- 927

SUBMITTED BY
KARTHIK PE

Under the guidance of

External Guide

Mr.Niraj K.Shukla

Project Guide

TATA Consultancy Services

Internal Guide

Mr.Su.NandaKumarr,

Lecturer,

CSE Department

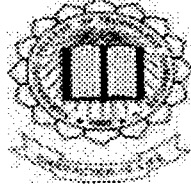
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE - 641 006.



Department of Computer Science and Engineering
Kumaraguru College of Technology
Coimbatore - 641006.



CERTIFICATE

This is to certify that the project work entitled "Recruitment Tool"

Has been submitted by

Mr. Karthik PE

In partial fulfillment of the award of the degree of
Master of Science in Applied Science- Software Engineering of
Bharathiar University, Coimbatore
during the academic year 2002-2003.

Sunil Kumar
20/3/2003

Guide

S. Jeyaraj 31/3/03

Head of the Department

Certified that the candidate was examined by us in the Project Work Viva Voce Examination held on 5/4 and the University Register Number was 9837S0051.

S. Arun

Internal Examiner

[Signature]

External Examiner



TCS/PERS/BLR
14/03/2003

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Karthik P E from Kumaraguru College of Technology has been doing his final year project with Tata Consultancy Services, Bangalore from 02/12/2002 till 31/03/03.

For TATA CONSULTANCY SERVICES

A handwritten signature in cursive script, appearing to read 'Rajni'.

(RAJNI NANJAPPA)
PERSONNEL EXECUTIVE

TATA CONSULTANCY SERVICES

A Division of Tata Sons Limited

International Tech Park Innovator 11th Floor Whitefield Road Bangalore - 560 066 INDIA
Tel (080) 8410085 Fax (080) 8410114 e-mail tcs_corpoffice@mumbai.tcs.co.in website www.tcs.com
Registered Office Bombay House 24 Homi Mody Street Mumbai 400 001

SYNOPSIS

The idea of 'Recruitment Tool' is to provide an application that performs the whole process of recruitment in a fully automated manner. This reduces the task of organization in managing huge number of candidates who appear for recruitment. This tool provides a highly secured and effective way of completing the recruitment process.

The tool involves the support of technical and HR Department of the organization. Technical Department takes care of the questions, interview sessions and intimating the result to the candidates. The HR Department does the initial process of selecting the eligible candidates for the test and conducting the test.

The system uses two servers, Server 1 & 2 and client systems. The important details of the recruitment process such as handling the questions, test details and interview schedules are maintained in Server 1. During the commencement of the test the admin from Server 1 sends the question paper and interview schedules to Server 2. Server 2 receives the details and conducts test to the candidates. For the candidate who clears the test interview schedules are shown. The candidate can select his preference of interview. The interviewer after completing the interview intimates the candidate through e-mail.

Starting from the initial notification to the candidates about the written test, conducting test, evaluating candidate's performance, scheduling interview sessions and intimating the final results everything is done automatically by the Recruitment Tool system.

The system follows Object Oriented Analysis and Design (OOAD) and is build using Java language.

CONTENTS

1. INTRODUCTION	3
1.1 About the Organization -Tata Consultancy Services	3
2. SYSTEM STUDY	5
2.1 Existing system	5
2.2 Limitations of existing system	5
2.3 Proposed system	6
2.4 Development Tools	6
2.4.1 About Java	6
2.4.2 About Unified Modelling Language (UML)	8
3. SOFTWARE REQUIREMENTS SPECIFICATION	10
3.1 Introduction	10
3.1.1 Background	10
3.1.2 Scope	10
3.1.3 Product Perspective	11
3.1.4 Key Assumptions, Dependencies and Constraints	11
3.2 User Classes and Characteristics	11
3.3 Hardware and Software Requirements	12
3.3.1 Hardware Requirements:	12
3.3.2 Software Requirements:	12
3.4 Application Security	12
3.5 User Interface Specifications	12
3.6 GUI Screen Layouts	13
3.6.1 Screen Layouts :	13
3.6.2 Screen Description	13
3.6.3 Screen Layout-Client Side	13
3.6.4 Screen Layouts-Server 1	16
3.6.5 Screen Layout - Server 2	22
3.7 Interface Specifications	24
3.7.1 Communication Interfaces	24

3.8 Preliminary Object Oriented Domain Analysis	24
3.8.1 Actor List and Use Case List	24
3.8.2 Use Case Flow Diagrams	25
3.8.3 Use Cases	30
3.9 Class Diagram	42
4. SYSTEM DESIGN	43
4.1 Architecture Overview	43
4.2 Communication Process between Terminals	44
4.2.1 Assumptions	44
4.2.2 Steps	44
4.3 Relation between system events and objects	48
4.4 Sequence diagrams	51
4.4.1 Client Side	51
4.4.2 Server 1 side	52
4.4.3 Server 2 side	60
5. TEST CASES	64
5.1 Client Side	64
5.2 Server 1 side	65
5.3 Server 2 side	67
6. CONCLUSION	69
7. FUTURE ENHANCEMENTS	69
8. REFERENCES	69

1. INTRODUCTION

1.1 About the Organization -Tata Consultancy Services

TCS is a division of Tata Sons, the holding company of the \$10.4 billion Tata Group, India's best known business conglomerate. Established in 1968, its founding was based on the understanding that the management problems in Indian industry could be resolved through the effective use of information technology. Under the leadership of F C Kohli, we spearheaded the pioneering efforts in creating a globally recognizable brand for the Indian software industry.

Strong linkages with academia, workplace professionalism, and in-house training and learning helped TCS lay the foundation for growing into a world-class organization. We invested heavily in software engineering practices and standards, software quality assurance, software project management, software processes, and research and development in software engineering and technology. As our intellectual horizons enlarged to better fit and address the opportunities of the IT era, we grew in several geographical locations.

For several years now, TCS has been India's largest IT enterprise, as well as Asia's largest independent software and services organization. We are the single largest software services exporters from India, and we now service clients in over 55 countries around the world. With over 100 branches globally, TCS is truly transnational in character and reach. We presently employ over 20,000 consultants and serve hundreds of clients, providing IT and business consulting services to organizations in government, business and industry in India and abroad.

Our service offerings are varied, and straddle many different industries, such as finance and banking, insurance, telecommunications, transportation, retail, manufacturing, pharmaceuticals and utilities. Our clients include small, medium and large companies, and our consulting engagements vary from a few person-months to hundreds of person-years in effort. TCS has grown dramatically during the past decade, doubling revenues every two years for the past six years. And our aim to become a billion-dollar company soon.

Our work has spanned a range of activities, from strategy consulting and system integration services to offshore development center's for some of the most sophisticated software development in the world. Consider these facts about us:

Projects for over 1000 clients in more than 55 countries. Our clients get measurable business results, which is why many Fortune 500 companies prefer us.

- More than 100,000 person years of experience in diverse **business domains** and **technology areas**.
- Knowledge accumulation through **collaborative research** with industry and academia, and **partnerships** with global technology leaders.
- Over 20,000 employees, a range of world-class products, proven offshore development capabilities, and multiple **SEI CMM Level 5 center's**
- TCS believes that IT is a key factor for social change and is committed to several **community development ventures**.
- We have engineered some of the world's most complex applications and next-generation IT infrastructure. We do this by combining our knowledge of business domains with our expertise across various technologies.

2. SYSTEM STUDY

2.1 Existing system

The recruitment process in the existing system is done manually. A written test is conducted by the organization to select the eligible candidates. The question papers are prepared manually. Evaluation of the answers is also a manual process. Individual notification is given to the candidates about their performance in the test. Candidates are called for the interview on a specific date given by the organization. The interview result is also intimated by the organization manually.

2.2 Limitations of existing system

- Since TCS is on a recruitment spree, handling the huge task manually has been a major concern to the organization.
- Question papers are prepared well in advance. So security has been a major concern here.
- Preparing unique question paper for each test is a difficult task.
- Handling of interview sessions is cumbersome.
- Candidates are not given a choice to select their interview schedules.
- The whole system is prone to human errors at all stages.
- This system is highly insecure and time consuming.

2.3 Proposed system

Our product *The Recruitment Tool* is an attempt to solve the problems present in the existing system. The system takes care of all manual processes in the recruitment phase. The system notifies the candidates about their test. Question papers are prepared automatically based on the requirements on the fly before the commencement of the exam. Evaluation of the answers is done automatically. For the qualified candidates the interview schedules are listed.

The candidate is allowed to select his preferred interview date and time. The system automatically informs the interviewers about the interview once the candidate has selected his interview schedule. The result of the interview is intimated to the candidate automatically by the system itself. This saves time and effort both from the candidate and the organization point of view.

The system follows Object Oriented Analysis and Design (OOAD). Thus Java language is used for the development of this tool. Unified Markup Language (UML) is used for representing the requirement analysis.

2.4 Development Tools

2.4.1 About Java

Java is an object-oriented, multi threading programming language developed by Sun Microsystems. It is designed to be small, simple and portable across different platforms as well as operating systems. The popularity of java is due to its unique technology that is based on the three key elements. They are the use of applets, powerful programming language constructs and the rich set of significant object classes.

When a program is compiled, it is translated into machine code. In the java development environment there are two parts: a Java compiler and a Java interpreter. The compiler generates a byte code and the interpreter executes the java program. In order to write a java program an editor, a java compiler and a java runtime environment is needed. The editor can be Notepad or any of the editors available but the most commonly used is the notepad. The editor can be the one especially specified for Java such as JCreator.

Java is a platform independent language and it will enable the application developed to be run in any of the operating system. This feature helps it to be used widely in the World Wide Web where we may not be able to restrict the type of operating system that enters the network.

- **Features of Java**

Java as we all know is an object-oriented language. The features of Java are as follows:

- Simple and powerful
- Secure
- Object-oriented
- Portable
- Robust
- Multithreading
- Architecture- neutral
- Interpreted and compiled
- Distributed
- Dynamic

- **JDBC**

The JDBC API is the application programming interface that provides universal data access for the Java platform. In other words, you use the JDBC API to work with a relational database or other source of data in an application written in the Java programming language.

The JDBC API consists of a set of classes and interfaces written in the Java programming language that provide a standard API for tool/database developers and makes it possible to write database applications using an all-Java API. The JDBC API makes it easy to send SQL statements to relational database systems and supports all dialects of SQL. But the JDBC 3.0 API goes beyond SQL, also making it possible to interact with other kinds of data sources.

In simplest terms, a JDBC technology-based driver makes it possible to do three things:

1. Establish a connection with a data source
2. Send queries and update statements to the data source
3. Process the results

- **Remote Methods Invocation (RMI)**

The distributed program uses an applet to make a remote method call to an RMI server, running on the host from which the applet was downloaded. The steps that need to be followed for an RMI application to run are:

- ✓ Write the source files and the HTML file
- ✓ Compile and deploy class files and the HTML file
- ✓ Start the RMI registry, server, and applet

There are four tasks to be performed:

- ✓ Compile the source files
- ✓ Use `rmic` to generate stubs and skeletons
- ✓ Move the HTML file to the deployment directory
- ✓ Set paths for runtime

2.4.2 About Unified Modelling Language (UML)

UML helps you specify, visualize, and document models of software systems, including their structure and design, in a way that meets all of these requirements. (You can use UML for business modeling and modeling of other non-software systems too.) Using any one of the large number of UML-based tools on the market, you can analyze your future application's requirements and design a solution that meets them, representing the results using UML's twelve standard diagram types.

You can model just about any type of application, running on any type and combination of hardware, operating system, programming language, and network, in UML. Its flexibility lets you model distributed applications that use just about any middleware on the market. Built upon the MOF metamodel which defines class and operation as fundamental concepts, it's a natural fit for object-oriented languages and environments such as C++, Java, and the recent C#, but you can use it to model non-OO applications as well in, for example, Fortran, VB, or COBOL. UML Profiles (that is, subsets of UML tailored for specific purposes) help you model Transactional, Real-time, and Fault-Tolerant systems in a natural way.

You can do other useful things with UML too: For example, some tools analyze existing source code (or, some claim, object code!) and reverse-engineer it into a set of UML diagrams. Another example: In spite of UML's focus on design rather than execution, some tools on the market execute UML models, typically in one of two ways: Some tools execute your model interpretively in a way that lets you confirm that it really does what you want, but without the scalability and speed that you'll need in your deployed application. Other tools (typically designed to work only within a restricted application domain such as telecommunications or finance) generate program language code from UML, producing most of a bug-free, deployable application that runs quickly if the code generator incorporates best-practice scalable patterns for, e.g., transactional database operations or other common program tasks. Our final entry in this category: A number of tools on the market generate Test and Verification Suites from UML models.

3. SOFTWARE REQUIREMENTS SPECIFICATION

3.1 Introduction

3.1.1 Background

This document outlines the software requirement specification for the *Recruitment Tool* Application System. It is the outcome of the analysis phase during which discussions were held with users. The objective of this analysis phase was to:

- Define the scope for the *Recruitment Tool*.
- Serve as the baseline for the design of the *Recruitment Tool*.

Any changes to requirements after acceptance of this document will be through appropriate Change Management procedure.

Both the user and designer should go through the document carefully in order to ensure that :

- All the user requirements, which need to be supported by the system, have been identified and detailed.
- The document is a clear and unambiguous statement of functionality required from the system for the design and development team.
- The document can be used as a basis for development of the System Test data.

It is essential to identify the problems, if any, with the basic structure of the proposed system at this stage. If these are not taken care of at this stage, it may be difficult to incorporate the desired modifications to overcome the shortcomings at a latter stage.

Client : TATA Consultancy Services.

3.1.2 Scope

Our project goal is to create an application for conducting an online exam that helps the organization in evaluating the candidates. The scope of our system *The Recruitment Tool* exists throughout the recruitment process. Right from the initial step of notifying the candidates everything is automated using this product. This product informs the candidates about the written test, conducts the online test, evaluates candidates' performance, announces result to candidates, schedules interview, and finally intimates the result of interview to the candidates.

3.1.3 Product Perspective

The system Recruitment Tool is a replacement of the existing manual Recruitment process that intends to achieve more streamlined, secure and flexible functionalities.

3.1.4 Key Assumptions, Dependencies and Constraints

The successful execution of the assignment will depend on the following factors:

Assumptions

- ◆ The candidates should have a passport to apply for the test

Dependencies

- ◆ Availability of installed hardware/System software for implementation.

Constraints

- ◆ None

3.2 User Classes and Characteristics

Human Resource (HR) Department –

- Short Listing of the eligible candidates to take up the test.
- Notifying the eligible candidates through e-mail.
- Conducting the test.

Technical Department –

- Periodically populates the question bank and interview slots.
- Identifies the requirements for the company and arranges for the test.
- Notifies the test to HR Department.
- Conducts interview and announce results through e-mail.

3.3 Hardware and Software Requirements

3.3.1 Hardware Requirements:

- Processor : Pentium-II or later
- RAM : 64 MB or above
- Dedicated line for internet or 56 KBPS Modem for dial up
- Disk Space :10 MB
(for application to run including database storage)

3.3.2 Software Requirements:

- Operating System : Windows, Linux.
- Front End tool : Java (jdk 1.4.1).
- Back End tool : MS Access 97.
- Editor : Jcreator LE (freeware)
- Tools/Technologies : Lotus Notes (for e-mail service).

3.4 Application Security

Dividing the user category into three layers viz., super-user, interviewer and question incharge. The users are given a user name and password which is stored in encrypted form in the database.

3.5 User Interface Specifications

- The candidate enters the passport number and password.
- The system verifies the details with the database in the server. If the candidate has already written the test within the period of 6 months, he is not allowed to take up the test. If the candidate is eligible for test, the requirements are displayed to the candidate.
- The candidate selects a requirement and receives an instruction form having the details of how to take up the test.
- The candidate starts the test. A time limit is given for the test. The candidate can move to any question. The candidate completes the test by using the end test option.
- The system validates the answers and the result is displayed to the candidate.
- If the candidate has qualified the test, the interview schedule is displayed to him. The candidate can select his desired interview date and time.
- The candidate closes the application.

3.6 GUI Screen Layouts

3.6.1 Screen Layouts :

- Screen Layout – Client.
- Screen Layout – Server 1.
- Screen Layout – Server 2.

3.6.2 Screen Description

Attribute Name	Description
<i>Client</i>	<i>The screens show the user interfaces from the client side.</i>
<i>Server 1</i>	<i>The screens show the user interface on the technical site.</i>
<i>Server 2</i>	<i>The screens show the user interface on the HR site.</i>

3.6.3 Screen Layout-Client Side

1. Login Screen:

Welcome to TCS Online Exam

Passport Number :

Password :

2. Valid Candidate – Select Skill set:

Skill set 1 :

Skill set 2 :

⋮

3. Questions – Answer Screen :

Question No :

Question :

Answer :

4. Qualified Candidate Screen:

Interview Date :

Interview Details:

Place	Time	Select

5. End Screen:

Thank You for attending TCS Exam

Interview Details:

Interview Date :

Interview Time:

Interview Place:

3.6.4 Screen Layouts-Server 1

1. Login Screen:

2. Super User - Main Screen:

Personnel	Interview details	Interview Slots	Test details	Personal data	Session
Add	View	View	Add	View/Modify	Exit
View/Modify			View/Modify		
			Delete		
			Set Test		
			Enable E-mail option		

3. Super User – Personnel – Add:

Add Personnel

Enter Employee Number :

Enter Name :

Enter Role :

Enter Password :

Enter e-mail ID :

4. Super User - Test details – Add:

Add Test detail

Enter Test Duration :

Enter Total Marks :

Enter Qualifying mark:

Enter total questions:

Sno	Requirement Set

Select	Add
	Remove

5. Super User - Test details – Set Test:

Set Test details

Test no	Duration	total marks	qualifying mark	total questions

S.No.	Requirement Set

Remove

Set Test Criteria

6. Super User - Test details – Set Test – Set Test Criteria:

Set Test Criteria

Total Questions :

S.No.	Requirement Set	Max. Questions

Remove

Send Test

7. Super User - Personal Data:

Employee Number :	<input type="text"/>
Name :	<input type="text"/>
Password :	<input type="text"/>
Confirm Password :	<input type="text"/>
E-mail ID :	<input type="text"/>
<input type="button" value="Back"/>	<input type="button" value="Save changes"/>

8. Interviewer - Main Screen:

Interview Slots	Interview Details	Personal data	Session
Add	Add Result	View/Modify	Exit
View/Modify	View/Modify		
Delete			

9. Interviewer – Interview Slots – Add:

Add Slots

Enter Date : (MM/DD/YY)

Enter Start Time : (Hr/Min)

Enter End Time : (Hr/Min)

Enter Place :

Enter Number of Candidates :

10. Interviewer – Interview details – Add Result:

Add Result

Candidate No.	Result

11. Question Incharge - Main Screen:

Question Details	Personal data	Session
Add	View/Modify	Exit
View/Modify		
Delete		

12. Question Incharge – Question details – Add:

Add Question

Skill Name :

Keyword :

Enter Question :

Enter Choices :

Enter Answer :

Enter Standard :

Enter Frequency of Question :

13. Question Incharge – Question details – Delete:

Delete Question details

Skill Name :

Keyword :

Question	Answer	Choice1	Choice2	Choice3	Choice4	Freq.	Std	Select

Back

Delete

3.6.5 Screen Layout - Server 2

1. Main Screen:

Candidate details	Consultant details	Personal data	Test	Session
Add	Add	View/Modify	Start Test	Exit
View/Modify	View/Modify			
Delete	Delete			
Send E-mail	Send E-mail			

2. Candidate details – Add Candidate:

Add Candidate

Enter Passport Number :

Enter Name :

Enter e-mail ID :

3. Consultant details – Add Consultant:

Add Consultant

Enter Name :

Enter Phone Number :

Enter e-mail ID :

3.7 Interface Specifications

3.7.1 Communication Interfaces

The system uses a local network protocol for transferring the information. A TCP connection is used for this purpose.

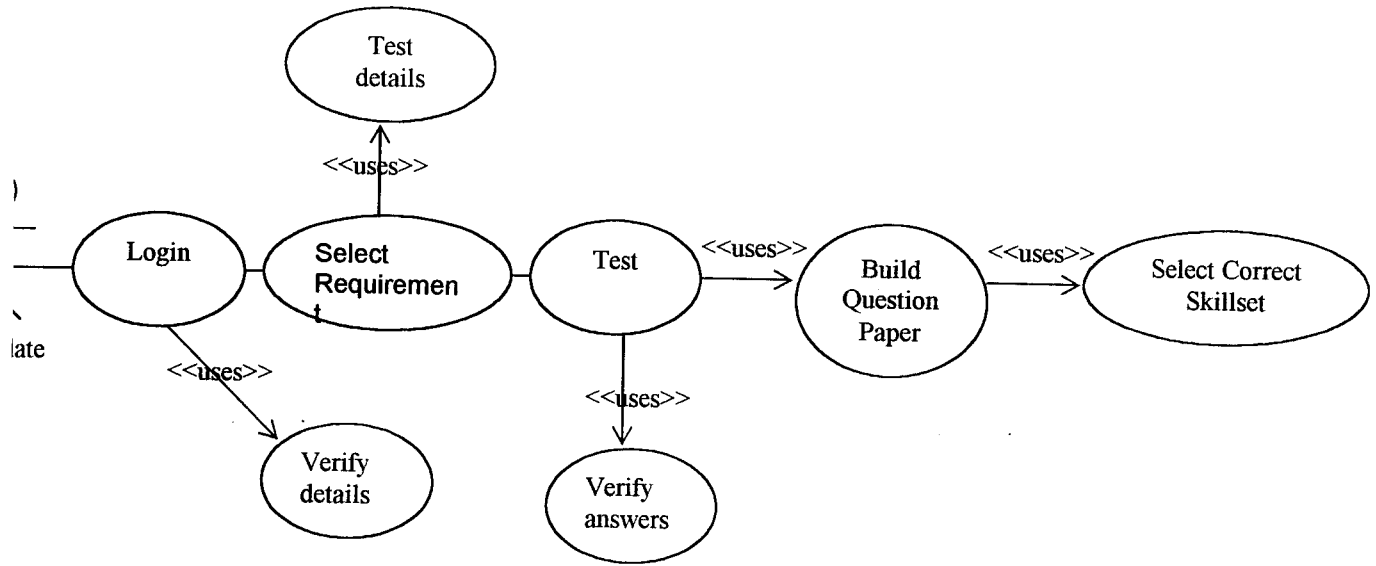
3.8 Preliminary Object Oriented Domain Analysis

3.8.1 Actor List and Use Case List

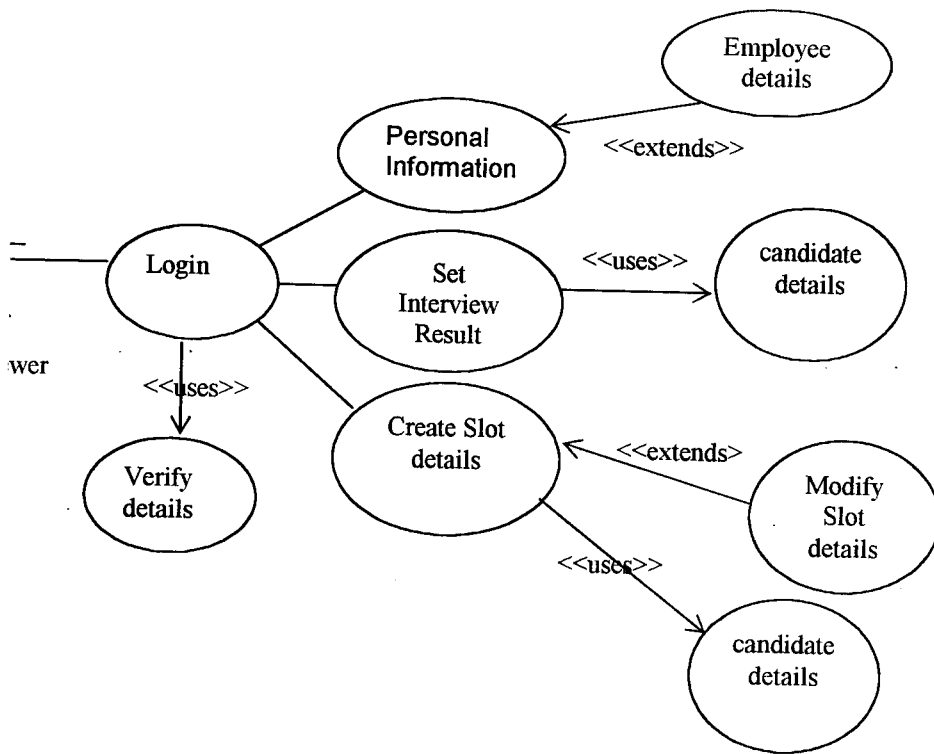
NAME	DESCRIPTION	USE CASES
Candidate	The person who takes test.	Candidate – use case.
Interviewer	Interviews the candidate. Populates Slot details.	Interviewer – use case.
Question Incharge	Populates the question database	Question Incharge – use case.
Super User	Manages Interviewer and Question Incharge. Maintains test details	Super User – use case.
Administrator	Selects eligible candidates to take up the test. Conducts Test.	Administrator – use case.

3.8.2 Use Case Flow Diagrams

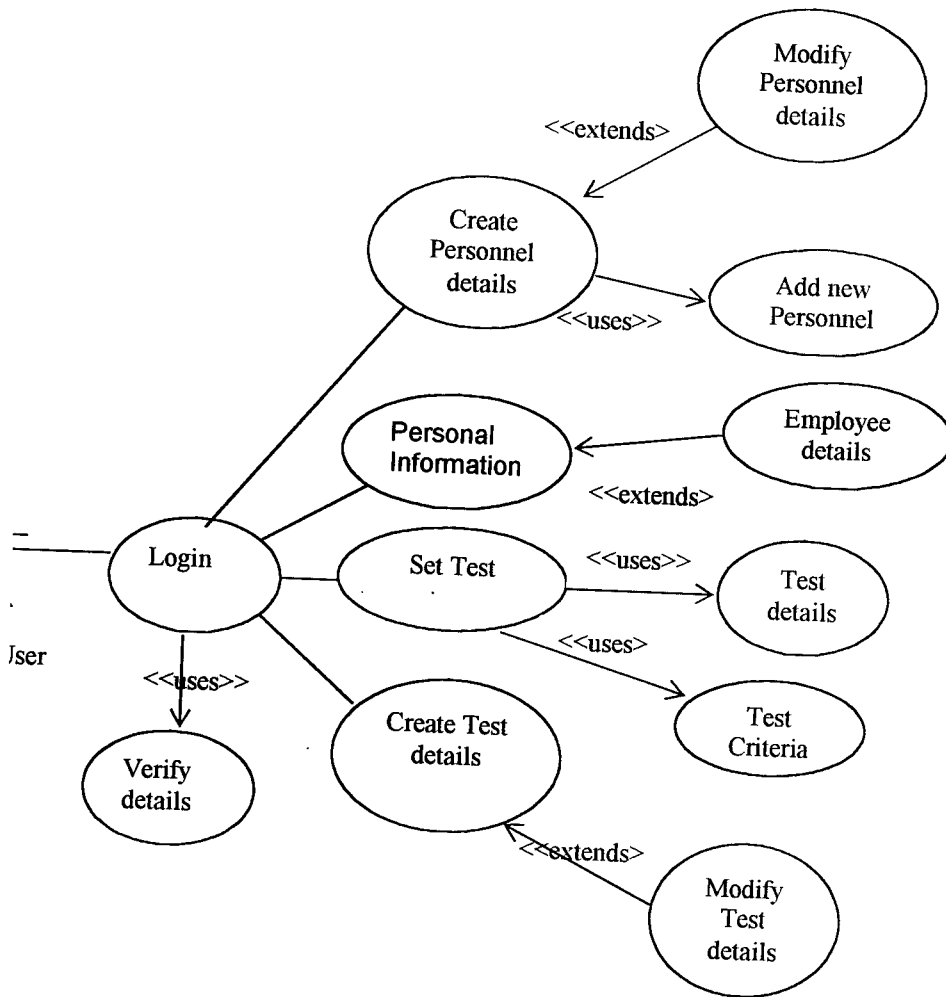
- Use Case - Candidate



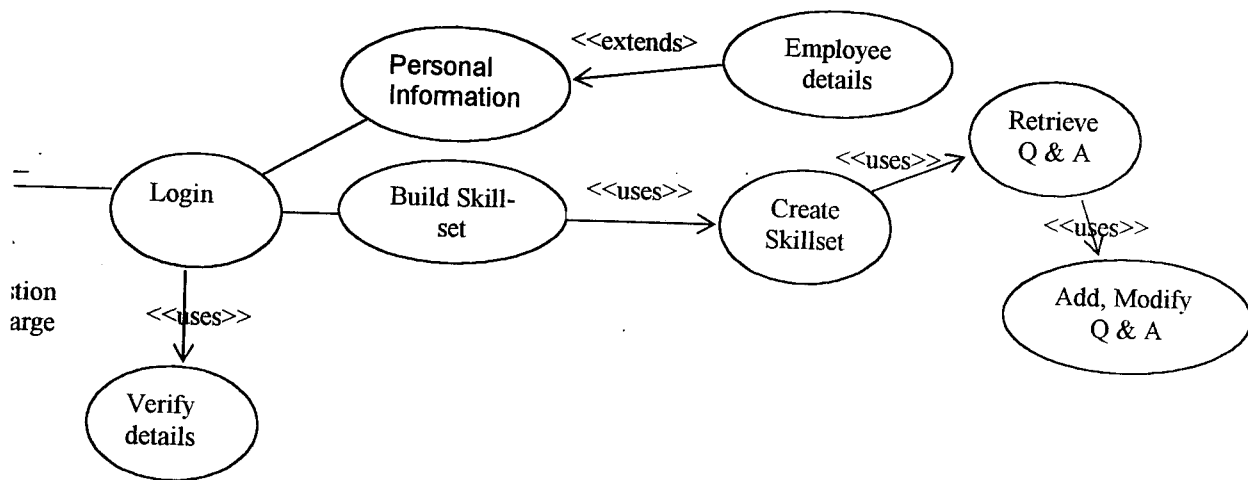
- Use Case - Interviewer



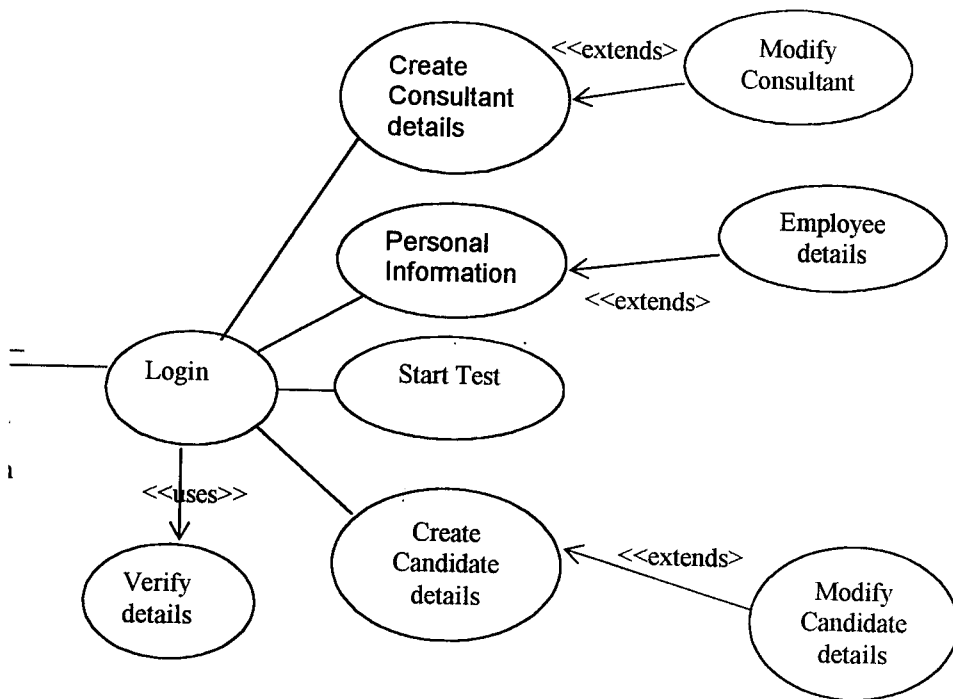
- Use Case – Super User



- Use Case – Question Incharge



- Use Case - Administrator



3.8.3 Use Cases

- USE CASES – CLIENT SIDE

Use Case 1a: Candidate starts application.

Candidate	System
Clicks on the application icon	
	System brings up the Login form, which has passport No as a user name, password and Consultant name (if any).
Candidate enters Passport number, password and Consultant name (if any) and submits it	
	System verifies. If invalid, Use Case 1b starts else Use case 1c starts.

Use Case 1b: Candidate is shown the notice of previous appearance.

Candidate	System
	Displays the message to the effect "You are not a valid user." Window closes and the application terminates.

Use Case 1c: Candidate has not appeared previously.

Candidate	System
	System displays the Requirement option.
Candidate selects the desired skill set to take up the test.	
	System displays instruction form. System connects to the server and gets the appropriate Question Paper for the candidate.
Acknowledges	
	System displays the questions from the question paper in a serial fashion.
Candidate answers the questions, one by one. Blank answers can be accepted. Candidate is allowed to navigate to any question. Candidate selects the END TEST option to end the test.	
	System verifies all the answers and calculates result. The performance of the candidate is shown. If the candidate is not qualified in the test, Use-Case 1d starts. If the candidate is qualified, the system shows the available date and time of interview. The candidate is allowed to select the interview details of his own choice.
Candidate fills the interview details and submits it.	
	Displays the confirmation of the selected date and time for the interview and sends all the information to the Server. E-mail is sent to the interviewer about the interview with all the details. The application closes. E-mail is also sent to the consultant.

Use case 1-d: Candidate fails and notification given.

Candidate	System
	System displays the message "Sorry, you are unable to clear the Exam. You can again take up the test only after xxx"
Acknowledges	
	System terminates the application



• USE CASES – SERVER 1

Use Case 3.1: Administrator starts application.

Administrator	System
Clicks on the application icon	
	System brings up the login screen where Employee number and password is entered.
Administrator enters all the details and submits it	
	System verifies the user. If the user is invalid, Use Case 3.2 starts. If the user is a valid user Use case 3.3 starts.

Use case 3.2: Administrator shown notice of invalidity

Administrator	System
	System displays the message to the effect "You are not a valid user. Enter correct Employee number and password".
Acknowledges	
	System closes the window and brings back the login screen.

Use case 3.3: Administrator is a valid user

Administrator	System
	System identifies the role of the user. If the User is SuperUser, - then Use case 3.4 starts If the User is Interviewer, - then Use case 3.5 starts If the User is QuestionIncharge, - then Use case 3.6 starts

Use case 3.4: The user is Super User

User	System
	System displays the main screen that has different Menu options.
User selects an option from the menu to do the respective operation.	
	If User selects -Personnel menu, Use case 3.4.1 starts. -Interview slots menu, Use case 3.4.2 starts. - Interview results menu, Use case 3.4.3 starts. -Test details menu, Use case 3.4.4 starts. -Personal data menu., use case 3.4.5 starts. If User selects Session-Exit option the application closes.

Use Case 3.4.1: Super User selects Personnel menu option.

User	System
	System displays various options such as adding a new Personnel and View/Modify an existing Personnel.
User selects an option from the menu.	
	If User selects -Add new Personnel option, Use case 3.4.1.1 starts -View/Modify Personnel, Use case 3.4.1.2 starts.

Use case 3.4.1.1: Super User selects Add a new Personnel option from Personnel menu.

User	System
	System displays a form to add Personnel details such as Employee number, name, password, e-mail ID and Role of the Personnel.
User enters all the details and submits it.	
	System updates the database with all the details and displays the main menu.

Use case 3.4.1.2: Super User selects View/Modify option from Personnel menu.

User	System
	System displays the details of all Personnel in a form.
User is allowed to modify the Role of any Personnel.	
	System updates the database if any changes are made by the User and displays the main menu.

Use case 3.4.2: Super User selects Interview Slots-View option from main menu.

User	System
	System displays the interview schedule of all Personnel in a form.
User Acknowledges. The user is allowed to take a hard copy of the interview schedule using the Print option.	
	If the print option is selected, System generates a hard copy and returns to main menu.

Use case 3.4.3: Super User selects Interview Results-View option from main menu.

User	System
	System displays the interview results of all Candidates in a form.
User Acknowledges. The user is allowed to take a hard copy of the interview results using the Print option.	
	If the print option is selected, System generates a hard copy and returns to main menu.

Use Case 3.4.4: Super User selects Test details menu option.

User	System
	System displays various options such as adding a new Test detail , View/Modify an existing test detail and delete a test detail.
User selects an option from the menu.	
	If User selects -Add new Test detail option, Use case 3.4.4.1 starts -View/Modify Test detail, Use case 3.4.4.2 starts. -Delete Test detail, Use case 3.4.4.3 starts. -Set Test , Use case 3.4.4.4 starts.

Use case 3.4.4.1: Super User selects Add a new Test detail option from Test detail menu.

User	System
	System displays a form to add Test details such as test duration, total marks, qualifying mark, total questions and requirement set.
User enters all the details and submits it.	
	System updates the database with all the details and displays the main menu.

Use case 3.4.4.2: Super User selects View/Modify option from Test detail menu.

User	System
	System displays the details of all Tests in a form.
User is allowed to modify all the details of a test.	
	System updates the database if any changes are made by the User and displays the main menu.

Use case 3.4.4.3: Super User selects Delete option from Test detail menu.

User	System
	System displays the details of all Tests in a form.
User is allowed to select multiple records for deletion.	
	System deletes the record and updates the database.

Use case 3.4.4.4: Super User selects Set Test option from Test detail menu.

User	System
	System displays the details of all Tests in a form.
User is allowed to select a Test detail.	
	System displays the option to set up the test criteria.
User is allowed to set up the total number of questions for each skill.	
	System prepares the question paper based on the users test criteria and sends it to Server2. System then displays the main menu.

Use case 3.4.5: Super User selects Personal data menu option.

User	System
	System displays the personal information of the admin such as Employee number, name, password and E-mail ID .
User is allowed to modify the password and E-mail ID.	
	System updates the database if any changes are made and displays the main menu.

Use case 3.5: The user is Interviewer

User	System
	System displays the main screen that has different Menu options.
User selects an option from the menu to do the respective operation.	
	If User selects -Interview slots menu, Use case 3.5.1 starts. -Interview details menu, Use case 3.5.2 starts. -Personal data menu., use case 3.5.3 starts. If User selects Session-Exit option the application closes.

Use Case 3.5.1: Interviewer selects Interview slots menu option.

User	System
	System displays various options such as add a new Slot, View/Modify an existing Slot and delete a slot.
User selects an option from the menu.	
	If User selects -Add new Slot option, Use case 3.5.1.1 starts -View/Modify Slot, Use case 3.5.1.2 starts. -Delete Slot, Use case 3.5.1.3 starts.

Use case 3.5.1.1: Interviewer selects Add a new Slot option from Interview slots menu.

User	System
	System displays a form to add slot details such as date, time and place of interview.
User enters all the details and submits it.	
	System updates the database with all the details and displays the main menu.

Use case 3.5.1.2: Interviewer selects View/Modify option from Interview slots menu.

User	System
	System displays the details of all slots in a form.
User is allowed to modify any slot detail.	
	System updates the database if any changes are made by the User and displays the main menu.

Use case 3.5.1.3: Interviewer selects Delete option from Interview slots menu.

User	System
	System displays the details of all slots in a form.
User is allowed to select multiple records for deletion.	
	System deletes the records and updates the database.

Use Case 3.5.2: Interviewer selects Interview details menu option.

User	System
	System displays various option such as View/Modify Interview result and add result option.
User selects an option from the menu.	
	If User selects -View/Modify Interview Result, Use case 3.5.2.1 starts. -Add Result, Use case 3.5..2 starts.

Use case 3.5.2.1: Interviewer selects View/Modify option from Interview detail menu.

User	System
	System displays the details of interview results in a form.
User is allowed to modify all the result of a candidate.	
	System updates the database if any changes are made by the User and displays the main menu.

Use case 3.5.2.2: Interviewer selects Add Result option from Interview detail menu.

User	System
	System displays a form to add the Result of a candidate
User enters the result and submits it.	
	System updates the database with the result and displays the main menu.

Use case 3.5.3: Interviewer selects Personal data menu option.

User	System
	System displays the personal information of the Interviewer such as Employee number, name, password and E-mail ID .
User is allowed to modify the password and E-mail ID.	
	System updates the database if any changes are made and displays the main menu.

Use case 3.6: The user is Question Incharge (QI)

User	System
	System displays the main screen that has different Menu options.
User selects an option from the menu to do the respective operation.	
	If User selects -Question details, Use case 3.6.1 starts. -Personal data menu., use case 3.6.2 starts. If User selects Session-Exit option the application closes.

Use Case 3.6.1: QI selects Question details option.

User	System
	System displays various options such as add a new Question, View/Modify Questions and delete Questions.
User selects an option from the menu.	
	If User selects -Add new Question option, Use case 3.6.1.1 starts -View/Modify Question, Use case 3.6.1.2 starts. -Delete Question, Use case 3.6.1.3 starts.

Use case 3.6.1.1: QI selects Add new Question option from Question details menu.

User	System
	System displays a form to add Question details such as question, answer, choices, frequency, standard of question.
User selects a skillset and a keyword and enters all the details of a question and submits it.	
	System updates the database with all the details and displays the main menu.

Use case 3.6.1.2: QI selects View/Modify option from Question details menu.

User	System
	System displays the questions of a particular skillset and keyword in the View/Modify form.
User is allowed to select questions by changing the skillset and keyword. User can select a particular question and modify the details of that question.	
	System updates the database if any changes are made by the User and displays the main menu.

Use case 3.6.1.3: QI selects Delete option from Question details menu.

User	System
	System displays the questions of a particular skillset and keyword in the delete form.
User is allowed to select multiple records for deletion by selecting the appropriate skillset and keyword.	
	System deletes the records and updates the database.

Use case 3.6.2: QI selects Personal data menu option.

User	System
	System displays the personal information of the Interviewer such as Employee number, name, password and E-mail ID .
User is allowed to modify the password and E-mail ID.	
	System updates the database if any changes are made and displays the main menu.

- **USE CASES – SERVER 2**

Use Case 2.1: Administrator starts application.

Administrator	System
Clicks on the application icon	
	System brings up the login screen where Employee number and password is entered.
Administrator enters the details and submits it	
	System verifies if the administrator is a valid user or not. If invalid user, Use Case 2.2 starts else Use case 2.3 starts.

Use Case 2.2: Administrator is shown the notice of invalidity.

Administrator	System
	System displays the message to the effect "You are not a valid user. Enter correct user name and password".
Acknowledges	
	System closes the window and brings back the login screen.

Use Case 2.3: Administrator is a valid user.

Administrator	System
	System displays the main screen that has different Menu options. The System also waits for the data that is to be received from Server 1. Initially the Start Test option in Test Menu is disabled. Once the data from the Server 1 is received by Server 2, the Start Test option is enabled.
Admin selects a menu option from the main screen.	
	If Admin selects -Candidate details menu, Use case 2.4 starts. -Consultant details menu, Use case 2.5 starts. -Personal data menu., use case 2.6 starts. -Test menu, use case 2.7 starts. If Admin selects Session-Exit option the application closes.

Use Case 2.4: Administrator selects Candidate details menu option.

Administrator	System
	System displays various options such as adding a new Candidate info., View/Modify an existing candidate info. , delete a Candidate and sending e-mails to the Candidates.
Administrator selects an option from the menu.	
	If Admin selects -Add new Candidate detail option, Use case 2.4.1 starts -View/Modify Candidate details, Use case 2.4.2 starts -Delete Candidate, Use case 2.4.3 starts. -Send E-mail, Use case 2.4.4 starts.

Use case 2.4.1: Administrator selects Add a new Candidate option from Candidate details menu.

Administrator	System
	System displays a form to add the Candidate details such as passport number, name and e-mail ID.
Admin enters all the details and submits it.	
	System updates the database with all the details. System also dynamically generates a password for each candidate and fills in the database. System then displays the main menu.

Use case 2.4.2: Administrator selects View/Modify option from Candidate details menu.

Administrator	System
	System displays the details of all Candidates in a form.
Admin is allowed to modify the details of any Candidate.	
	System updates the database if any changes are made by the Admin and displays the main menu.

Use case 2.4.3: Administrator selects Delete Candidate option from Candidate details menu.

Administrator	System
	System displays a form to delete the candidate details.
Admin is allowed to select any number of records for deletion.	
	System deletes the record and updates the database. The system then displays the main menu.

Use case 2.4.4: Administrator selects the Send E-mail option from Candidate details menu.

Administrator	System
	System sends E-mail to all the Candidates and displays the main menu.

Use Case 2.5: Administrator selects Consultant details menu option.

Administrator	System
	System displays various options such as adding a new Consultant, View/Modify an existing consultant info., delete Consultant. and sending e-mails to the Consultant.
Administrator selects an option from the menu.	
	If Admin selects -Add new Consultant detail option, Use case 2.5.1 starts -View/Modify Consultant details, Use case 2.5.2 starts -Delete Consultant, Use case 2.5.3 starts. -Send E-mail, Use case 2.5.4 starts.

Use case 2.5.1: Administrator selects Add a new Consultant option from Consultant details menu.

Administrator	System
	System displays a form to add the Consultant details such as phone number, name and e-mail ID.
Admin enters all the details and submits it.	
	System updates the database with all the details and displays the main menu.

Use case 2.5.2: Administrator selects View/Modify option from Consultant details menu.

Administrator	System
	System displays the details of all Consultant in a form.
Admin is allowed to modify the details of any Consultant.	
	System updates the database if any changes are made by the Admin and displays the main menu.

Use case 2.5.3: Administrator selects Delete Consultant option from Consultant details menu.

Administrator	System
	System displays a form to delete the Consultant details.
Admin is allowed to select any number of records for deletion.	
	System deletes the record and updates the database. The system then displays the main menu.

Use case 2.5.4: Administrator selects the Send E-mail option from Consultant details menu.

Administrator	System
	System sends E-mail to all Consultants and displays the main menu.

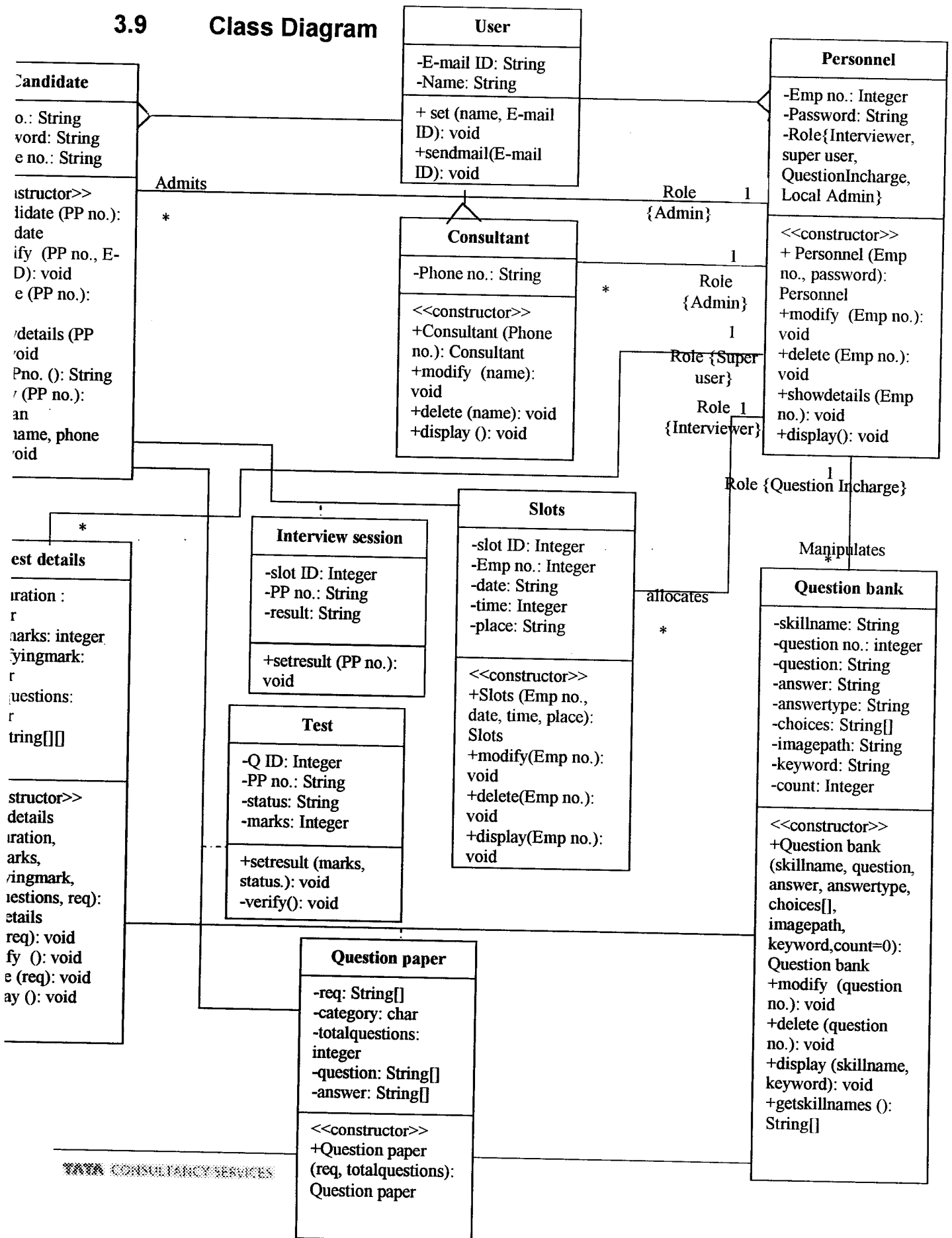
Use case 2.6: Administrator selects Personal data menu option.

Administrator	System
	System displays the personal information of the admin such as Employee number, name, password and E-mail ID .
Admin is allowed to modify the password and E-mail ID.	
	System updates the database if any changes are made and displays the main menu.

Use case 2.7: Administrator selects Test menu option.

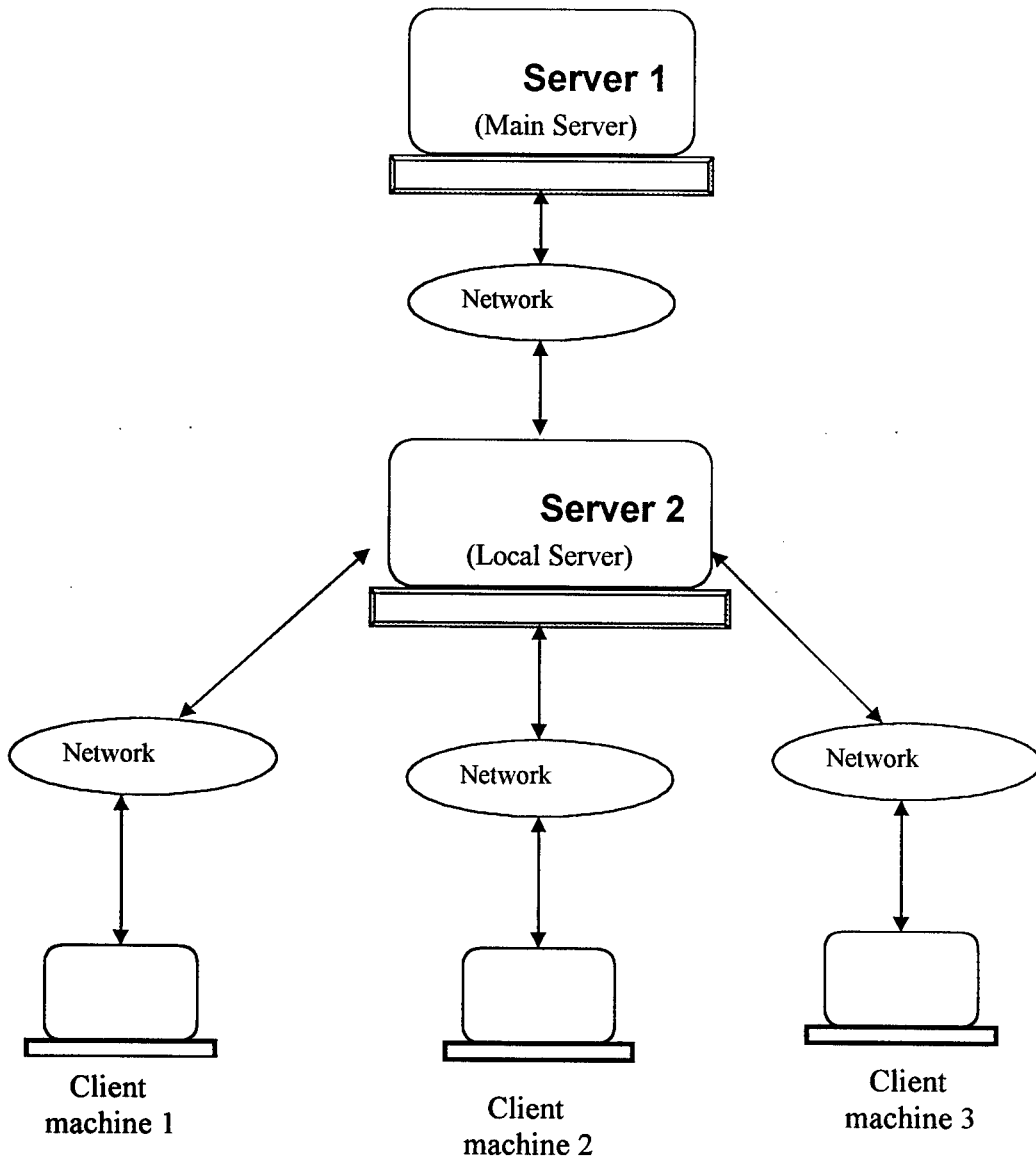
Administrator	System
	System displays the option to start the test.
Admin can start the test by selecting this option.	
	If the Start Test option is enabled, System allows the Candidate to connect to the server and take up the test.

3.9 Class Diagram



4. SYSTEM DESIGN

4.1 Architecture Overview



4.2 Communication Process between Terminals

4.2.1 Assumptions

Super User Logs on Server 1

Admin Logs on Server 2.

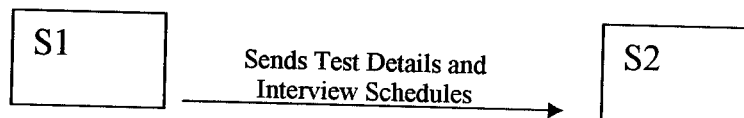
S1 – Server 1.

S2 – Server 2.

4.2.2 Steps

Server 2 waits for data from Server 1.

Super User selects the Test and sets the Test Criteria in Server 1.

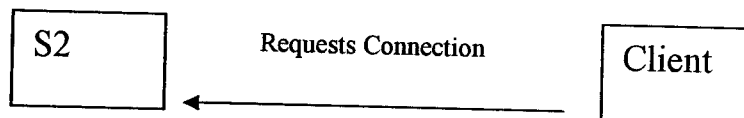


Server 2 receives the Test Details and stores them in database.

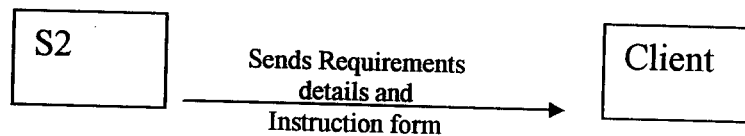
Server 1 waits for the data from Server2.

Admin starts Test in Server2.

Server 2 waits for the client request.

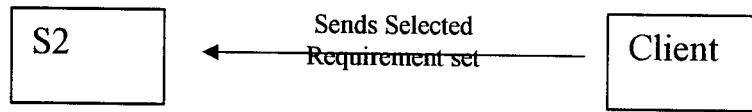


Server 2 accepts Client connection.

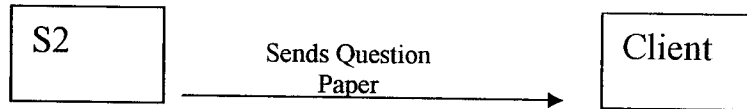


Client receives the Requirements details and instruction form and displays them to the Candidate.

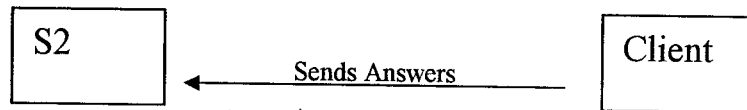
Candidate selects a Requirement set.



Server 2 accepts the data from Client and gets the Question Paper from database based on the requirement set received.



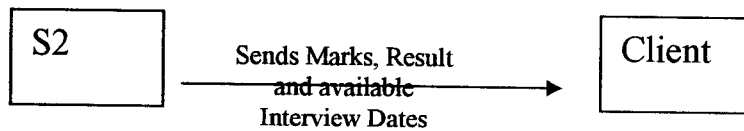
Client receives Question Paper from Server 2 and displays them to the Candidate.
Candidate completes the Test and sends answers to Server 2.



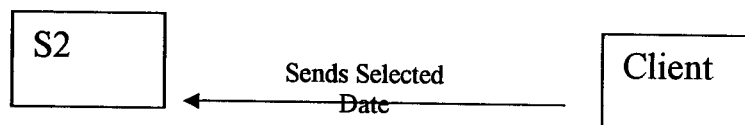
Server 2 receives the answers send by the Client and validates it.

Case 1:

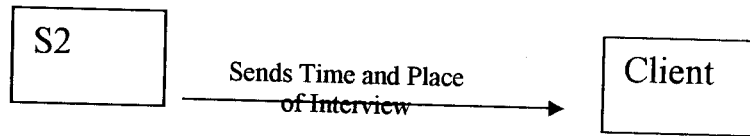
Candidate clears the Test.



Client receives data from Server 2 and displays them to the candidate.
Candidate selects a data for the Interview.

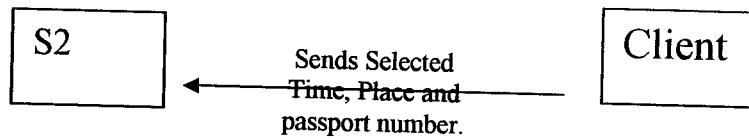


Server 2 receives selected date from Client and gets the corresponding Time and Place of Interview from database.



Client receives the data and displays them to the Candidate.

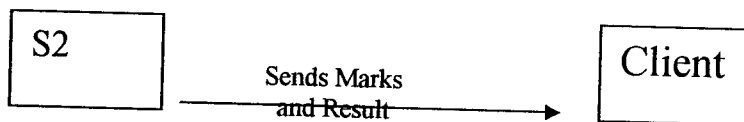
Candidate selects a time and place of interview.



Server 2 receives the data from the client and stores passport number in the respective Interview Schedule.

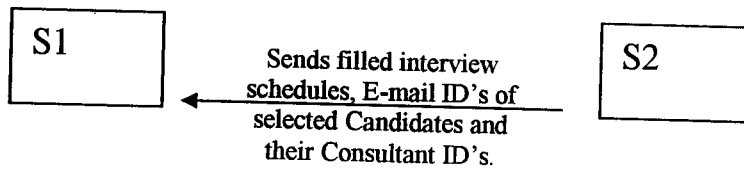
Case 2 :

Candidate fails to clear the test.



Client receives the data from Server 2 and displays them to the Candidate.

Server 2 closes the Client connection.



Server 1 receives data from Server 2 and closes the connection.
Server 2 deletes all the test details and interview schedules from the database.
Server 1 fills the database with the interview schedules and E-mail ID's.
Server 1 sends E-mail to the respective Interviewers regarding the interview schedule.
The interview is conducted. Server 1 intimates the final result to the Candidate and the Consultant through E-mail.

4.3 Relation between system events and objects

-----Objects----->

	Candidate	Admin	Interviewer	Super user	Question incharge	Req. set.	Interview session	Question paper	Test det.	Test result	Candidate answers	Consultant	Question data	Interview result
System Events														
Login candidate	✓													
Candidate selects requirements	✓					✓		✓					✓	
Candidate takes test	✓							✓	✓	✓	✓			
Candidate adds Interview details	✓						✓							
Login interviewer (I)			✓											
(I) display personal info.			✓											
(I) modify personal info.			✓											
(I) set interview result			✓											
(I) modify interview result			✓											✓
(I) add Slot details			✓											✓
(I) display Slot details			✓				✓							
(I) modify Slot details			✓				✓							
(I) delete Slot details			✓				✓							
Login question incharge (QI)					✓									
(QI) display personal info.					✓									

	Candidate	Admin	Interviewer	Super user	Question incharge	Req. set	Interview session	Question paper	Test det.	Test result	Candidate answers	Consultant	Question data	Interview result
(Q) modify personal info.					✓									
(Q) add a new question					✓								✓	
(Q) display question					✓								✓	
(Q) modify question					✓								✓	
(Q) Delete a question					✓								✓	
Login super user (SU)				✓										
(SU) display personal info.				✓										
(SU) modify personal info.				✓										
(SU) add a new Personnel			✓	✓										
(SU) modify Personnel details			✓	✓										
(SU) display Slot details			✓	✓					✓					
(SU) display interview result	✓			✓										
(SU) add Test details				✓										✓
(SU) display Test details				✓					✓					
(SU) modify Test details				✓					✓					
(SU) delete Test details				✓					✓					
(SU) set test details				✓					✓					

	Candidate	Admin	Interviewer	Super user	Question incharge	Req. set	Interview session	Question paper	Test det.	Test result	Candidate answers	Consultant	Question data	Interview result
Login administrator (A)		✓												
(A) display personal info.		✓												
(A) modify personal info.		✓												
(A) add candidate details	✓	✓												
(A) display candidate details	✓	✓												
(A) modify candidate details	✓	✓												
(A) delete candidate details	✓	✓												
(A) add consultant details		✓										✓		
(A) display consultant details		✓										✓		
(A) modify consultant details		✓										✓		
(A) delete consultant details		✓										✓		

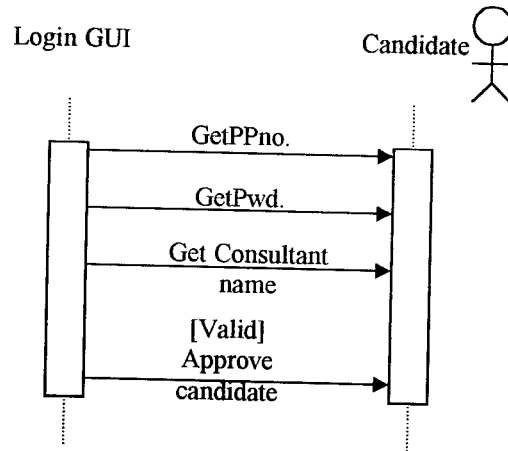
4.4 Sequence diagrams

4.4.1 Client Side

Login candidate

Description

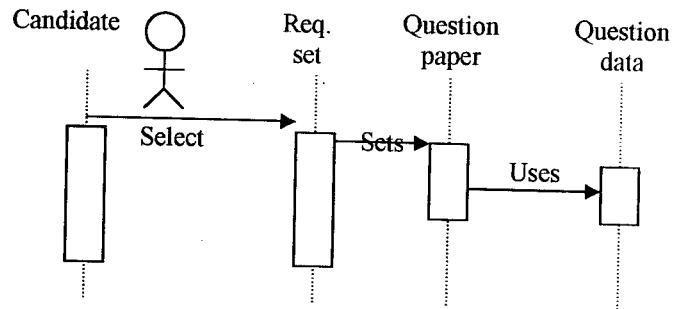
- Get passport number
- Get password
- Get Consultant name
- Approve candidate if valid



Candidate selects requirements

Description

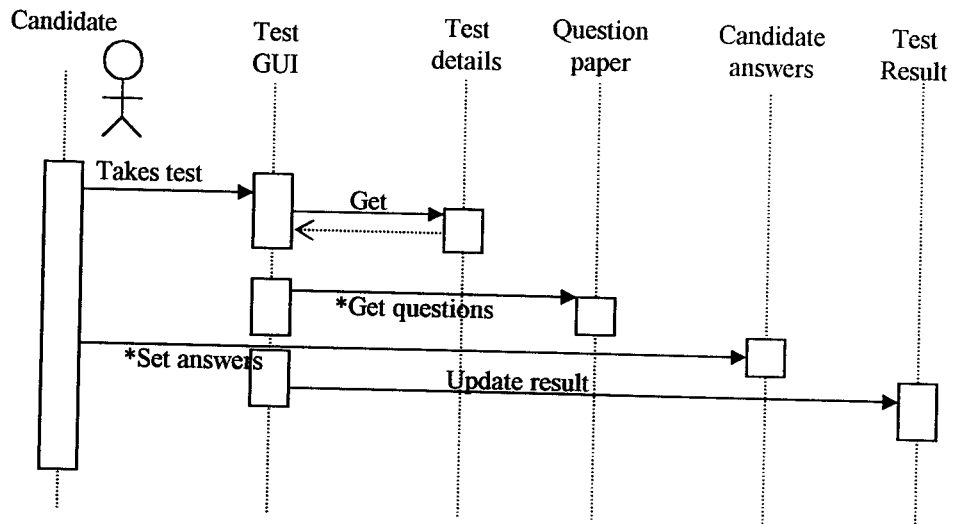
- Selects requirements
- Gathers question paper
- Uses question data

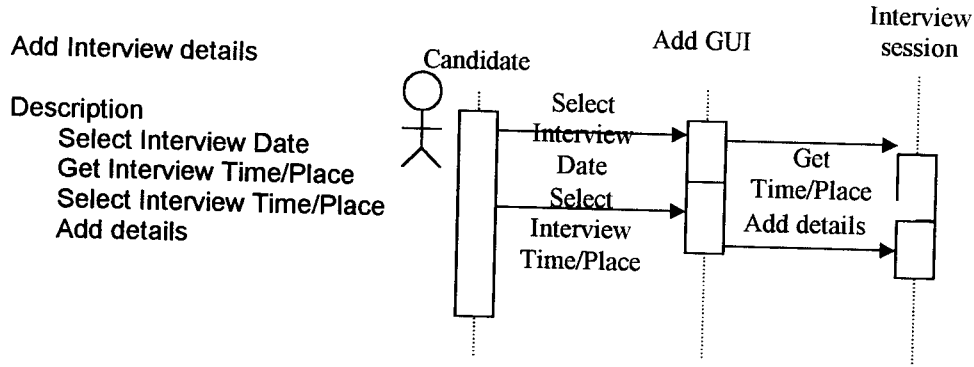


Candidate takes test

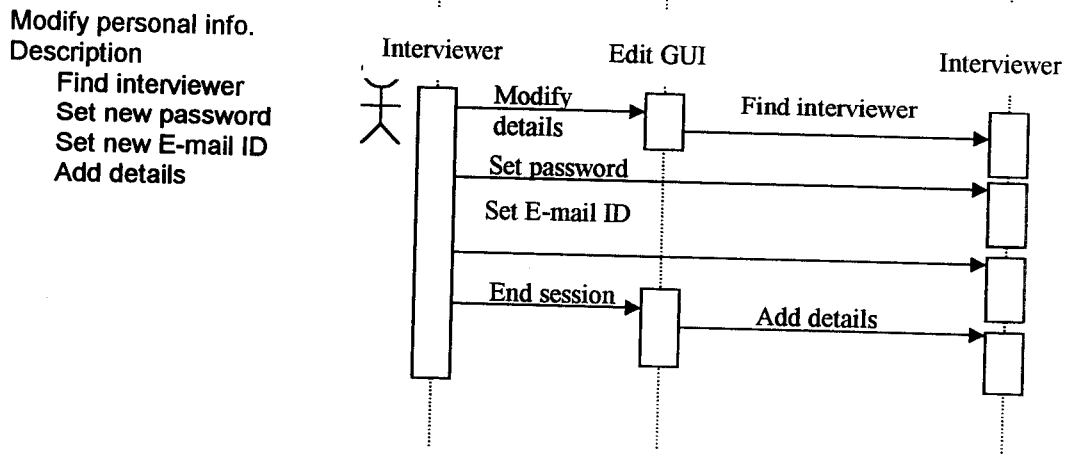
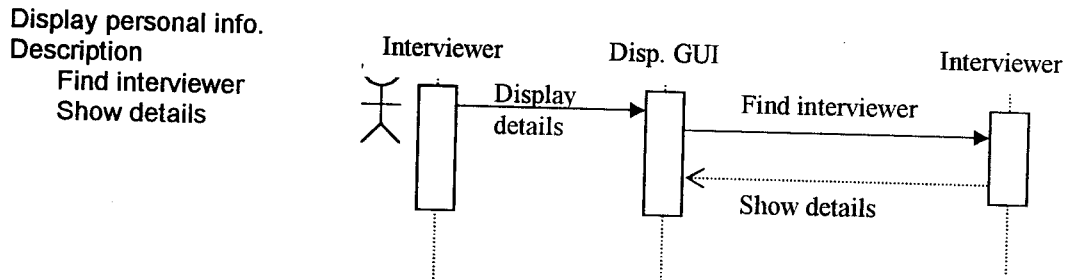
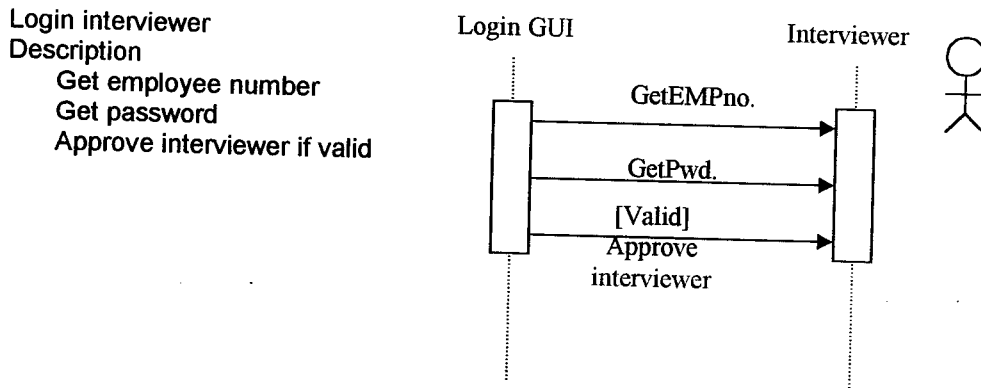
Description

- Takes test
- Get test details
- Get questions from QP
- Set answers
- Update result





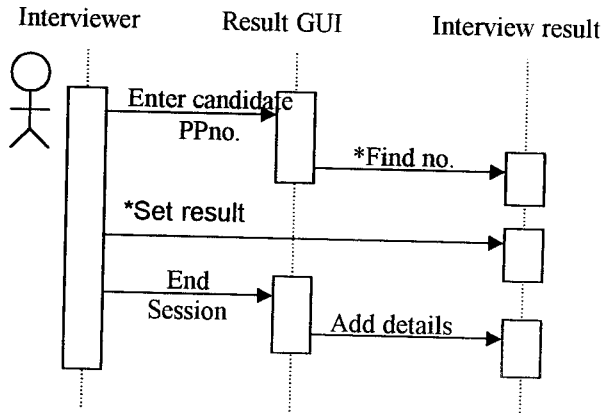
4.4.2 Server 1 side



Set Interview result

Description

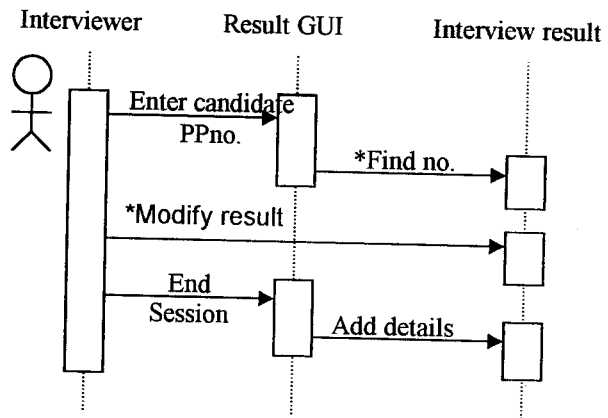
- Find candidate Ppno.
- Set result
- Add result to database



Modify Interview result

Description

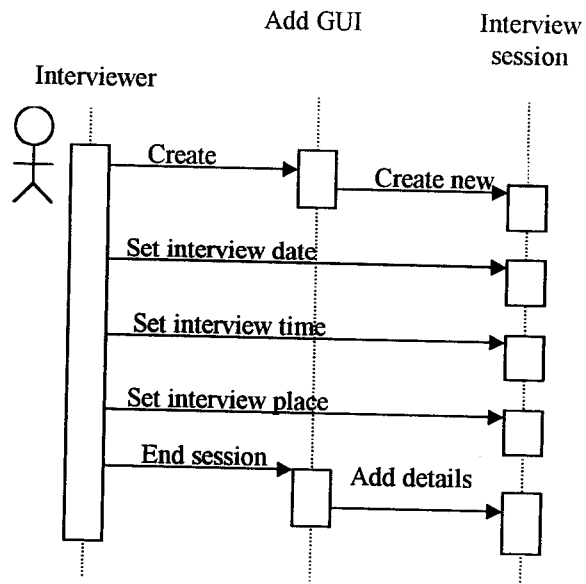
- Find candidate Ppno.
- Modify result
- Add result to database



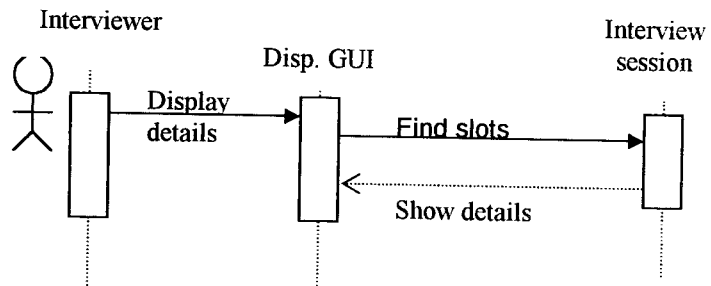
Add Slot details

Description

- Create new Interview info.
- Set interview date
- Set interview time
- Set interview place
- Add details to database

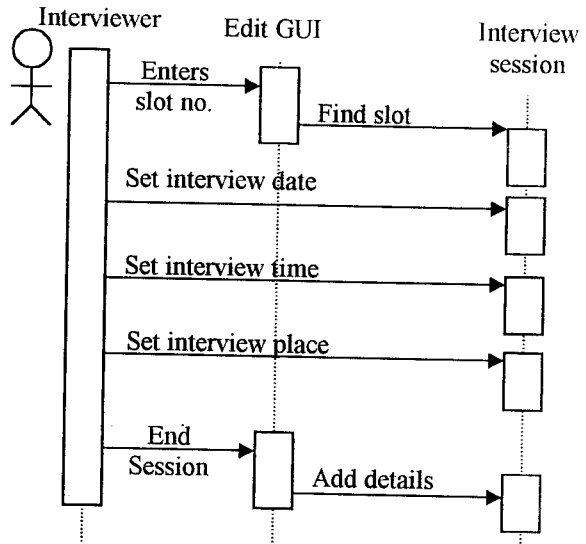


Display Slot details
 Description
 Find slots
 Show details

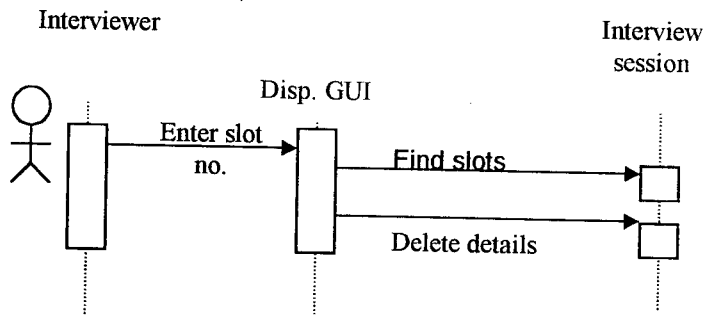


Modify Slot details

Description
 Get interview no.
 Find record
 Get interview date
 Get interview time
 Get interview place
 Add details to database



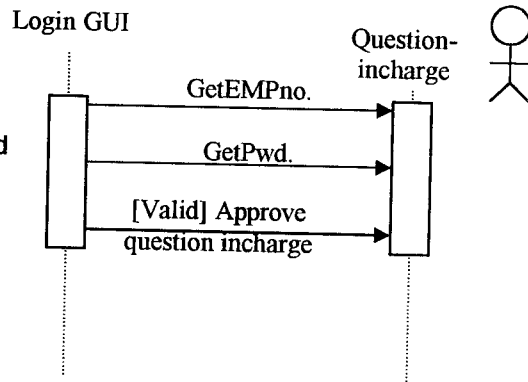
Delete Slot details
 Description
 Find slots
 Delete details



Login question-incharge

Description

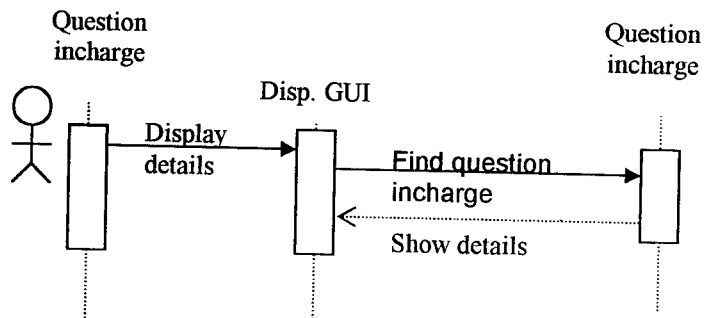
- Get employee number
- Get password
- Approve question incharge if valid



Display personal info.

Description

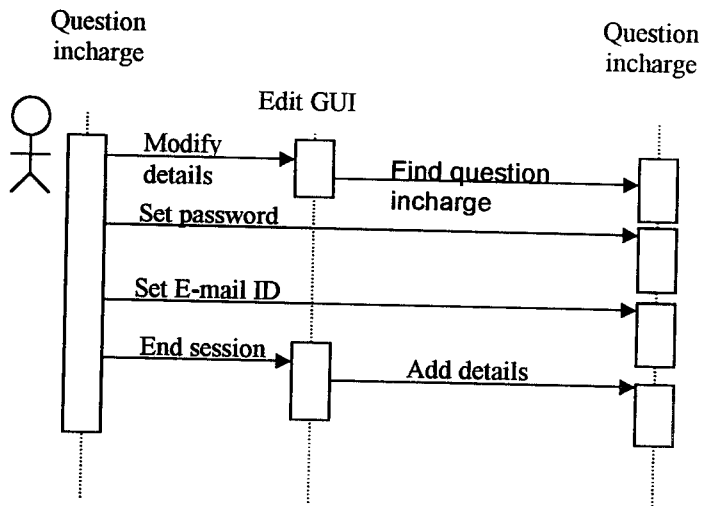
- Find interviewer
- Show details



Modify personal info.

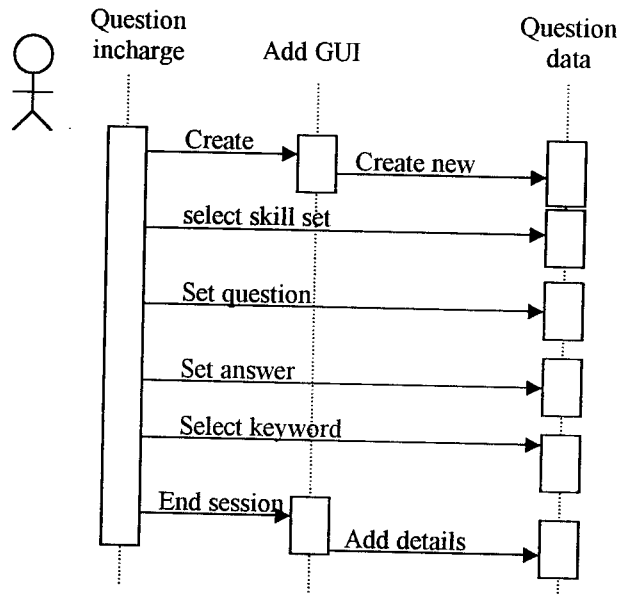
Description

- Find question-incharge
- Set new password
- Set new E-mail ID
- Add details



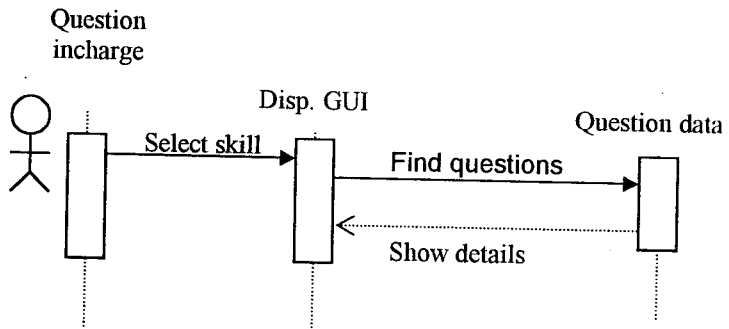
Add a new question

- Description**
 Create new question
 Select skill set
 Set question
 Set answer
 Select keyword
 Add details



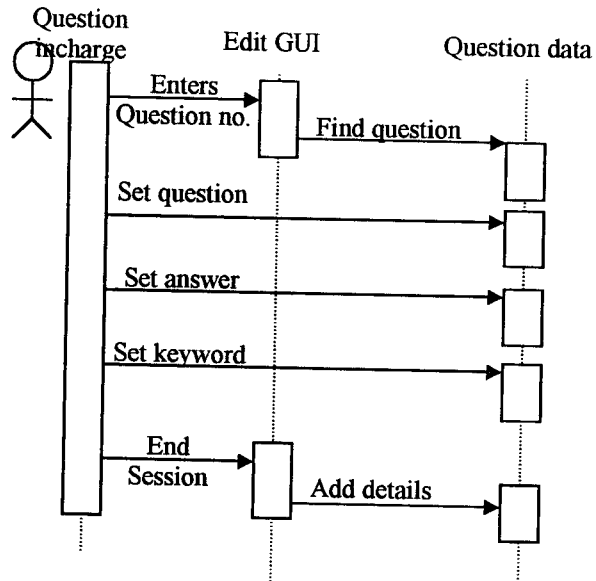
Display questions

- Description**
 Find question
 Show details



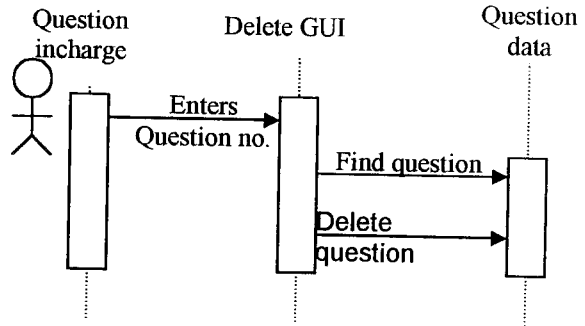
Modify question

- Description**
 Get question no.
 Find question
 Get question
 Get answer
 Get keyword
 Add question to database



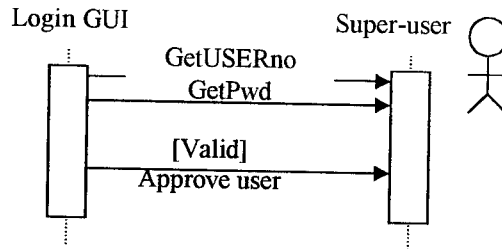
Delete a question

Description
 Get question no.
 Find question from backup
 Delete question



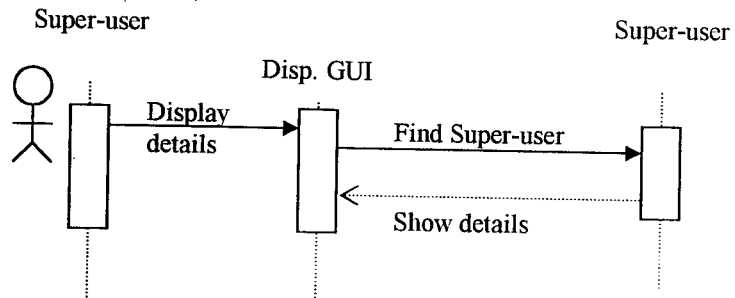
Login Super-user

Description
 Get Employee number
 Get password
 Approve user if valid



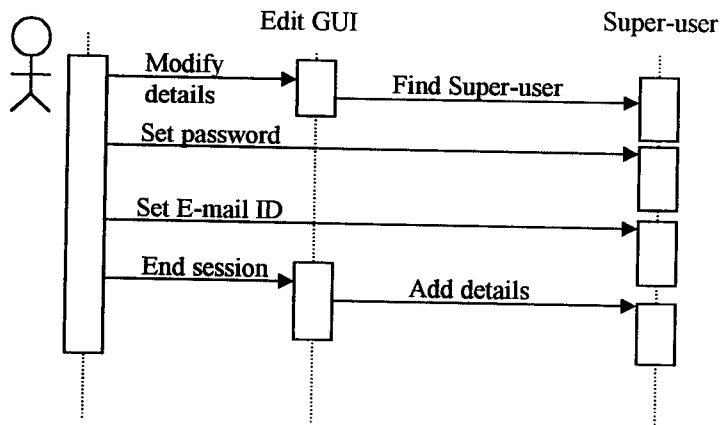
Display personal info.

Description
 Find Super-user
 Show details



Modify personal info.

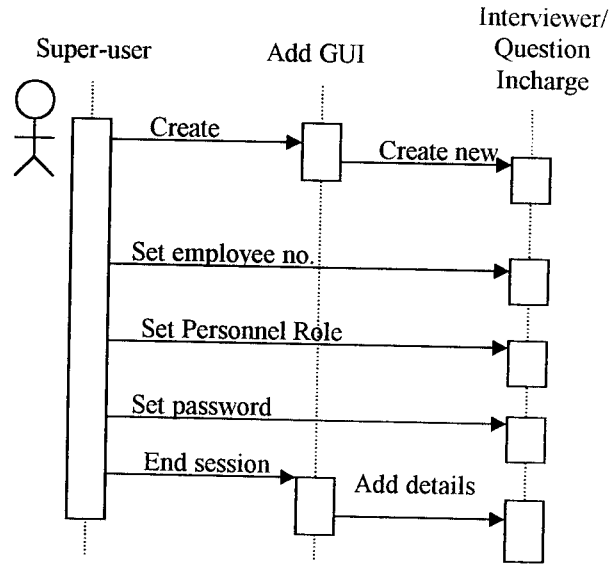
Description
 Find Super-user
 Set new password
 Set new E-mail ID
 Add details



Add new Personnel

Description

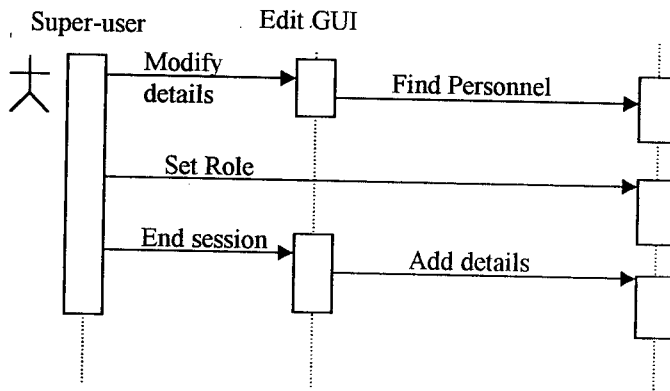
- Create new user
- Set employee no.
- Set employee Role
- Set password
- Set E-mail ID
- Add details to database



Modify Personnel details

Description

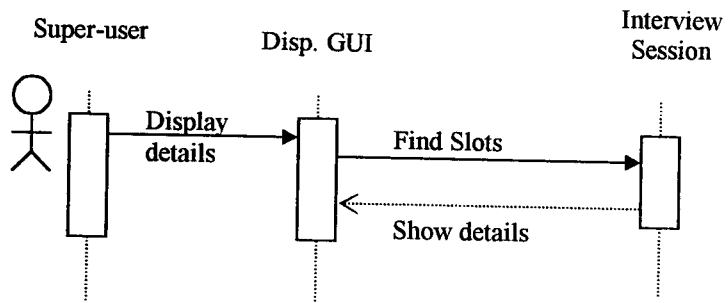
- Find Super-user
- Set Role
- Add details



Display Slot details

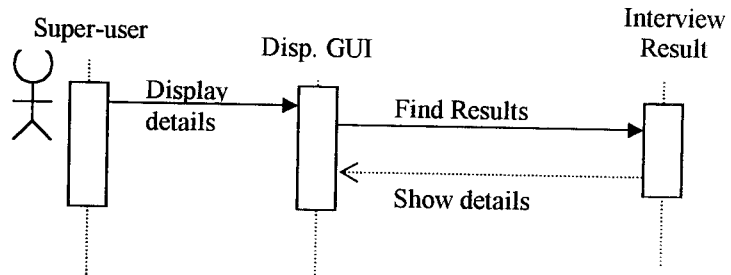
Description

- Find Slots
- Show details



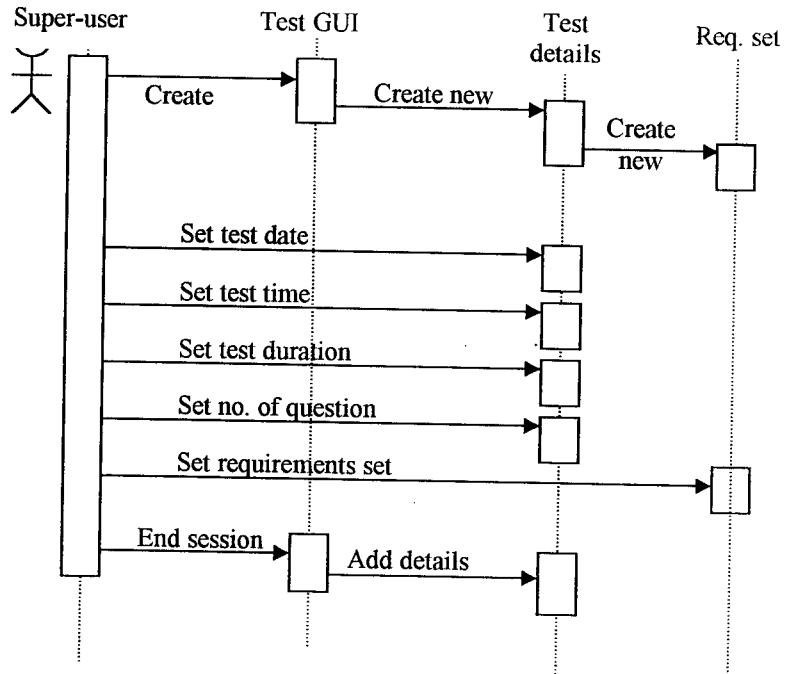
Display Interview Result

- Description
- Find Results
- Show details



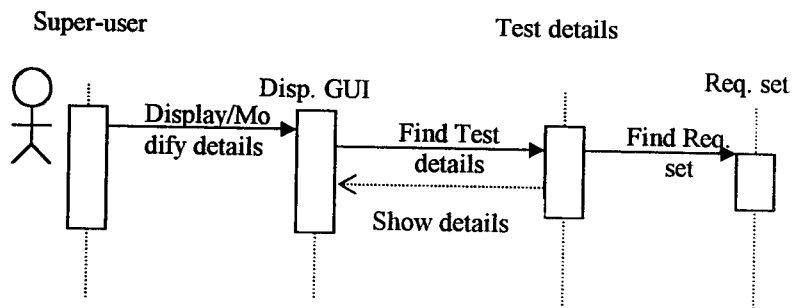
Add test details

- Description
- Create new test details
- Create new Req. Set
- Set test date
- Set test time
- Set test duration
- Set no. of questions
- Set requirements set
- Add details

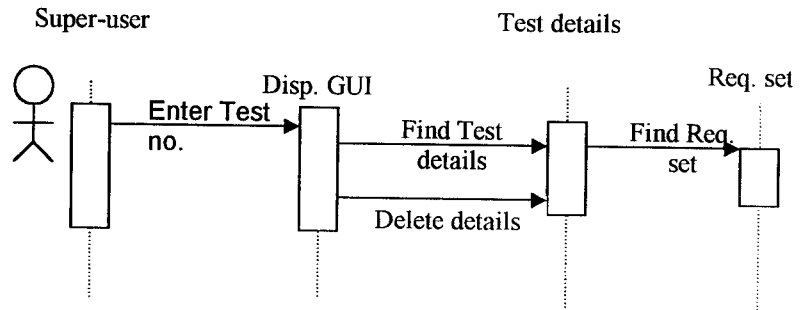


Display/Modify Test details

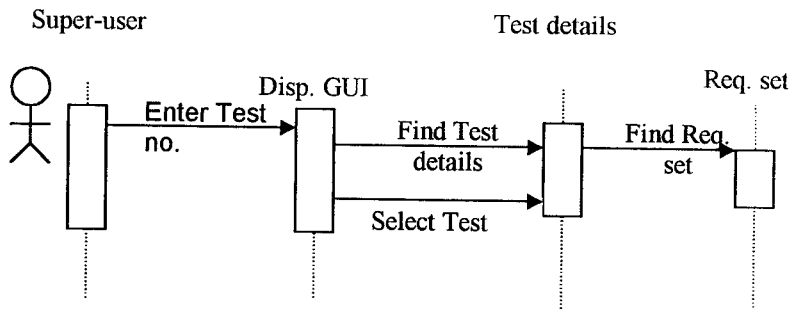
- Description
- Find Test details
- Show details



Delete Test details
 Description
 Find Test details
 Delete details

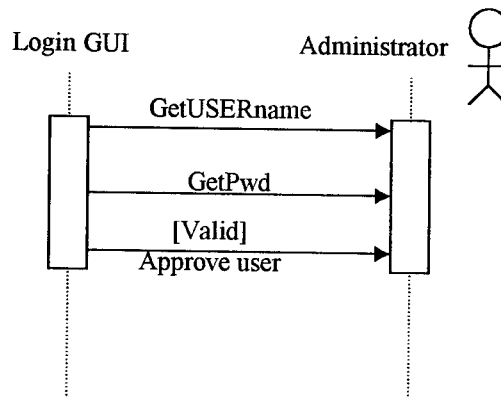


Set Test details
 Description
 Find Test details
 Select Test detail

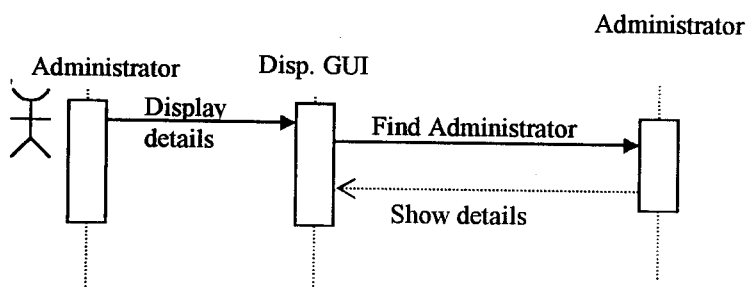


4.4.3 Server 2 side

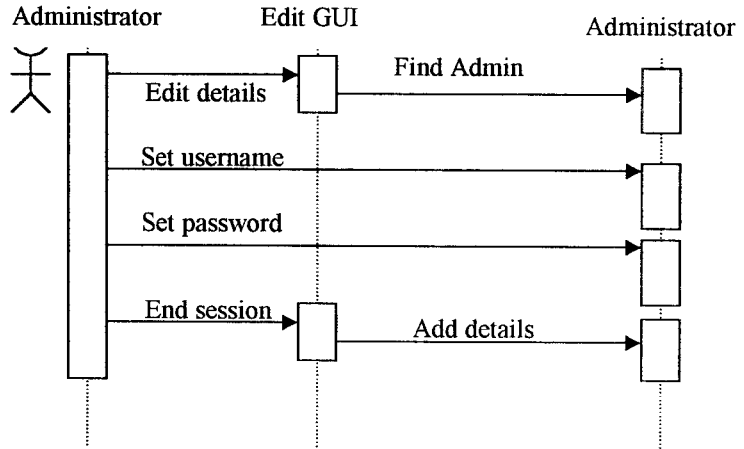
Login Admin
 Description
 Get user name
 Get password
 Approve user if valid



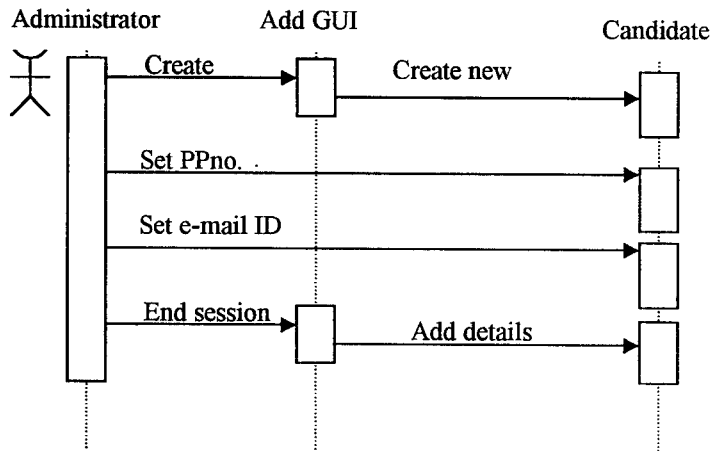
Display personal info.
 Description
 Find Administrator
 Show details



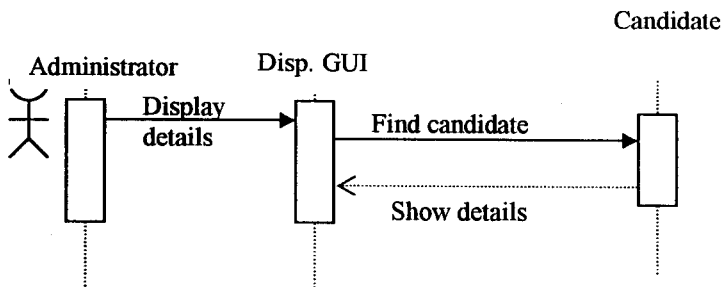
Modify personal info.
 Description
 Set new password
 Set new E-mail ID
 Add details



Add candidate info.
 Description
 Set new password
 Set new E-mail ID
 Add details



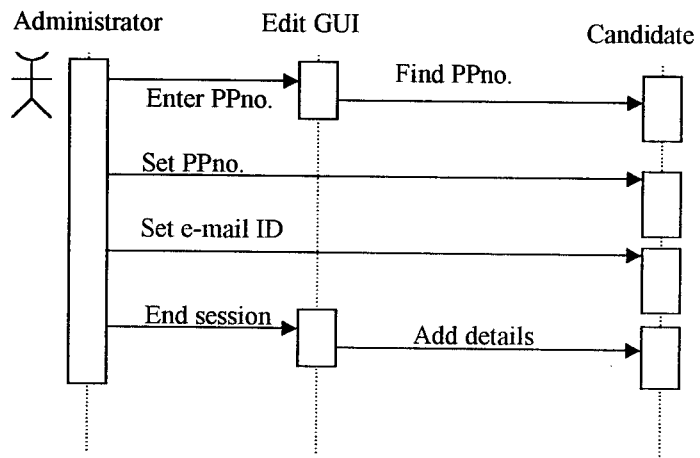
Display candidate info.
 Description
 Find candidate
 Show details



Modify candidate info.

Description

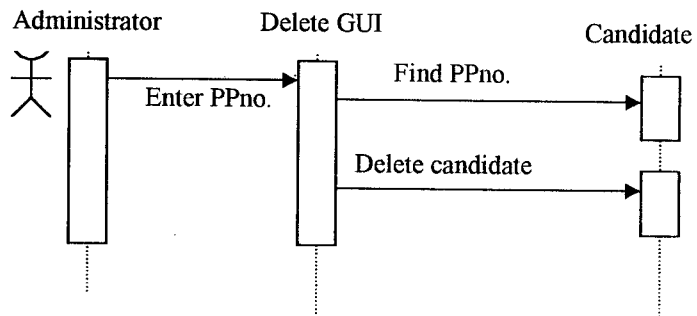
- Set new password
- Set new E-mail ID
- Add details



Delete candidate info.

Description

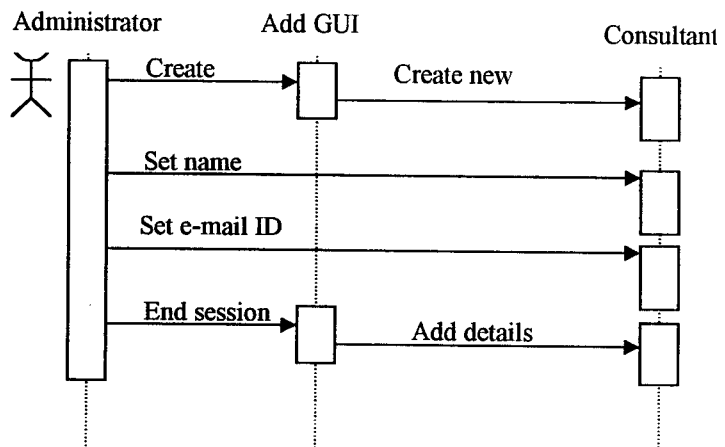
- Set new password
- Set new E-mail ID
- Add details



Add consultant info.

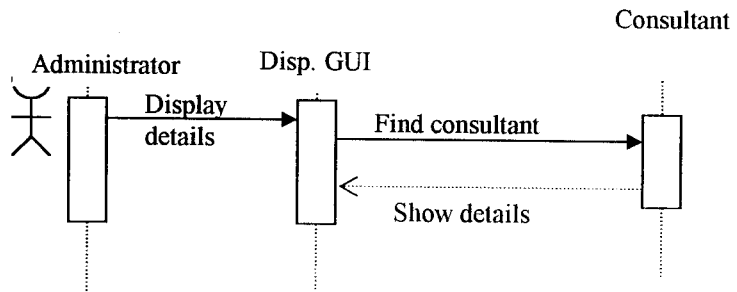
Description

- Set new password
- Set new E-mail ID
- Add details



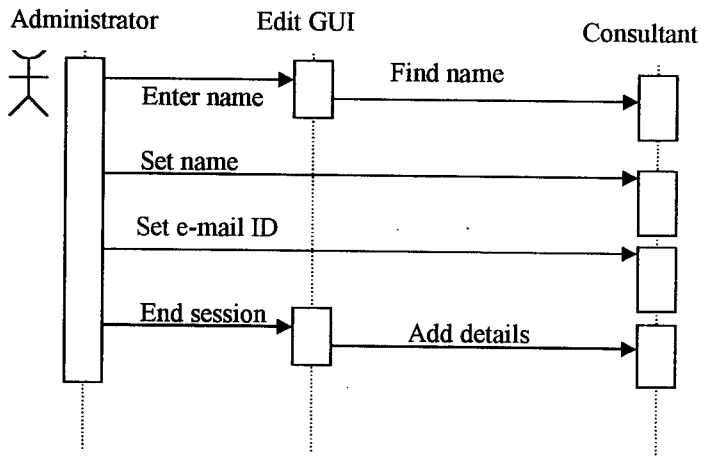
Display consultant info.

Description
 Find consultant
 Show details



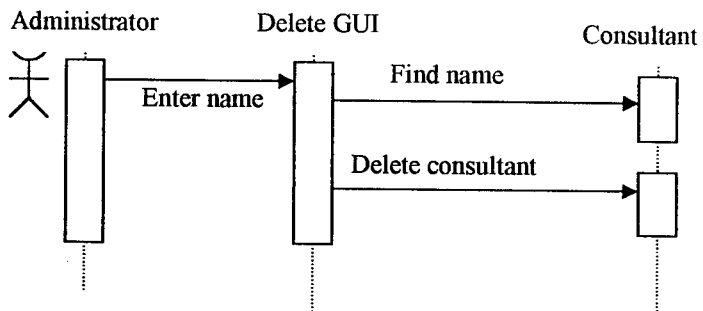
Modify consultant info.

Description
 Set new password
 Set new E-mail ID
 Add details



Delete consultant info.

Description
 Set new password
 Set new E-mail ID
 Add details



5. Test Cases

5.1 Client Side

Test ID	Description	Procedures and Expected Results	Result
CL_01	Candidate login	<p>Procedure: Candidate enters the passport number a combination of alphanumeric characters, password and Consultant name(if any).</p> <p>Expected Result: The candidate should be shown the requirements screen. If there is any error the appropriate error message should be shown</p>	Passed
CL_02	Requirement selection	<p>Procedure: The candidate selects the requirement to write the test.</p> <p>Expected Results: -The candidate is shown the instruction form</p>	Passed
CL_03	Candidate takes test	<p>Procedure: The questions are displayed to the candidate in a sequential manner. A timer is turned on as soon as the candidate starts the test. Candidate is allowed to move to any question. The filled answers are passed for verification once the candidate selects End Test option.</p> <p>Expected Result: Displays the question based on the request. The timer is decremented for each second. The session will end if the candidate clicks the end test button. The application closes if the candidate has passed the time limit and an appropriate message has to be displayed.</p>	Passed
CL_04	Display result	<p>Procedure: The answers are validated and the result is displayed.</p> <p>Expected Result: If the candidate has failed then a message has to be shown and the application quits. If the candidate has passed then the score is displayed and interview details form is displayed.</p>	Passed
CL_05	Select date of interview	<p>Procedure: The candidate selects preferred interview date to attend the interview</p> <p>Expected Result: Display the interview place and time for the selected date.</p>	Passed

CL_06	Select place and time of interview	Procedure: The candidate selects the place and time of interview and submits it Expected Result: The candidate is allocated the slot and a mail is dispatched to the interviewer regarding the candidate.	Passed
CL_07	Test not completed	Procedure: The candidate is writing the test and the time limit has exceeded but the test is not completed Expected Result: Answers written within the specified time is submitted.	Passed
CL_08	Candidate reappearing for same test	Procedure: The candidate tries to close the application and write the test on the same day. Expected Result: The candidate is not allowed to write the test again. An error message is generated.	Passed

5.2 Server 1 side

Test ID	Description	Procedure and Expected Result	Result
SERVER 1_01	Super-user login	Procedure: Super user enters the username and password to login Expected Result: Error is generated if the user is not valid	Passed
SERVER 1_01	Create new interviewer	Procedure: The admin enters the details of the new interviewer to the already existing panel. Expected Result: Displays Error message if the employee already is there.	Passed
SERVER 1_02	Modify interviewer details	Procedure: The Super-user changes the role of the interviewer. Expected Result: Appropriate message is generated after changing the role	Passed
SERVER 1_03	View interviewer slot and interview result	Procedure: The Super-user views the interviewer slots and the interview results Expected Result: Error message is generated if they try to modify the content	Passed
SERVER 1_04	Add test details	Procedure: Super-user enters the details needed for the test to be conducted. Expected Result: Error message is generated if the data is not of the correct form	Passed
SERVER 1_05	Modify test details	Procedure: Super-user enters the details, which need to be	Passed

		modified for the test. Expected Result: Message of updated contents is displayed Error message is generated if the same information is already present in the list.	
SERVER 1_06	Delete test details	Procedure: Super-user deletes the test details which are not needed Expected Result: Message is generated after the deletion of records	Passed
SERVER 1_07	Setting test details	Procedure: Super-user selects the test criteria for which the test is to be conducted and it will be displayed separately. Expected Result: Error message is generated if there is no test detail selected and if it is to be set.	Passed
SERVER 1_08	Changing personal details	Procedure: Super-user selects to modify personal details and provides the details. Expected Result: Error message if the password is not valid or if trying to modify the name	Passed
SERVER 1_09	Question in charge login	Procedure: Question in charge enters the user name and password for login Expected Result: User shown the main menu Error message if the user is not valid	Passed
SERVER 1_10	Question in charge adds question	Procedure: Adds question with all the information Expected Result: Message of question created Error message if the same question exists Error message if some data is not of correct form	Passed
SERVER 1_11	Modify question	Procedure: Question in charge selects the question to be modified and enters the modified question Expected Result: Message of modification is given Error if the data is not of correct form or if some information is not given	Passed
SERVER 1_12	Delete question	Procedure: Question in charge selects the question to be deleted from the database Expected Result: Message of deletion is displayed. Error message if there is no question selected to be deleted	Passed
SERVER 1_13	Question in charge modify personal detail	Procedure: Question in charge enters the details to be modified for the personal details Expected Result	Passed

		Error message is generated if the data is not correct	
SERVER 1_14	Interviewer login	Procedure: Interviewer enters user name and password and log in Expected Result Error message is displayed if the user is not valid	Passed
SERVER 1_15	Add Interview Slot	Procedure: Interviewer adds the slots and the time and place for the interview Expected Result Error message if the data is not valid or if the date is less than the present day Error message if the date is not in the correct form as dd-mm-yyyy	Passed
SERVER 1_16	Delete interview slot	Procedure: Interviewer selects the slot for which is to be deleted Expected Result Error if there no entry selected	Passed
SERVER 1_17	Add/ Modify interview result	Procedure: Interviewer adds the result or modifies the result entered Expected Result Error if there is no such result or if they try to change the name of the candidate who appeared for the test	Passed
SERVER 1_18	Interviewer modify personal details	Procedure: Interviewer selects the personal details to be modified and enters the details Expected Result Error is generated if the data is not correct or if they try to modify the contents restricted	Passed

5.3 Server 2 side

Test ID	Description	Procedure and Expected Results	Result
SERVE R2_01	Admin login	Procedure: The administrator enters the username and the password to log in. Expected Result: The admin will be displayed the main menu. Error message is displayed if the user is not valid.	Passed
SERVE R 2_02	Add Candidate details	Procedure The Admin enters the Passport number, name password and the e-mail id of the candidate and submits it. Expected Result: Error message is generated if the data is not of correct form.	Passed
SERVE R 2_03	Modify candidate details	Procedure: The Admin modifies the entries that he has entered.	Passed

		<p>Expected Result: An error message is generated if data is not of correct form. Admin is shown the main menu</p>	
SERVE R 2_04	Delete Candidate details	<p>Procedure: The Admin selects the candidates to be deleted and then submits it. Expected Result: A message for deletion is generated Admin is shown the main menu</p>	Passed
SERVE R 2_05	Sending Mail	<p>Procedure: The Admin selects the option to send mail to all the candidates with their personal details and the password. Expected Result: The mail is send to the candidates. Error message is generated if the mail id is wrongly entered or if the mail is not sent. Admin is shown the main menu</p>	Passed
SERVE R 2_06	Add/ Modify Consultant details	<p>Procedure: The Admin enters the details of the consultant and submits. The Admin selects the consultant to be modified. Expected Result: Messages are displayed if the data is not correct. Admin is shown the main menu</p>	Passed
SERVE R 2_07	Delete Consultant details	<p>Procedure: Admin selects the consultant to be deleted. Expected Result: Message after deletion is generated and display the main menu</p>	Passed
SERVE R 2_08	Modify Personal details	<p>Procedure: Admin enters the personal details, which needs to be modified. Expected Result: Message after updating is generated and display the main menu</p>	Passed
SERVE R 2_09	Admin tries to modify the password	<p>Procedure: The admin tries to change the password. Expected Result: Error message is displayed.</p>	Passed
SERVE R 2_10	Admin tries to modify employee number	<p>Procedure: The admin tries to change the employee number along with other personal details Expected Results: Error message is displayed for changing the employee number.</p>	Passed

6. Conclusion

The product 'Recruitment Tool' serves as an effective tool to fulfill the needs of the client during Recruitment process. It provides an easy and effective way to evaluate a candidate.

This product is developed based on the client requirements. It provides a fully automated system with a user-friendly environment.

It reduces time spent both by the Interviewer and the candidate.

7. Future Enhancements

- Images can be included in the user interface on the client side. Images will provide a better user friendly environment.
- Requirements category can be introduced. One or more skills can be grouped under one category.
- Textual answering of questions can be introduced.
- The mark for each question is fixed. This can be extended so that every question can carry different marks.
- Negative marking can be introduced.

8. References

- Object Oriented Analysis and Design – James Rum Baugh
- Special edition using Java – Joseph L. Weber
- Applying UML and Patterns – Craig Larman

Web Site:

- www.Java.sun.com