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CHAPTER 1

**INTRODUCTION**

1.1

**About Project**

Online job portal is a web application built in java. It provides the candidates ability toregister to this application and search for jobs, manage their accounts. Each candidatewill have their own account with their own home page.On the other hand companies that are willing to publish the jobs for their company tocandidates can register to the job portal and get their own account created and can

post jobs to portal‘s database .

Registered companies can add or remove jobs and these jobs can be seen by variouscandidates and they can contact the company person for the job. Main aim of thisweb application is to make a good web application that can make this job searchoption easy and accessible to everyone who are interested.

**1.2**

**MODULES**

The main stakeholders of this system are:

1. Admin.2. Job Seekers.

3. CompaniesThis system enables the Recruiting company to login to the system and create avacancy and post it on the web. The Recruiting company can associate jobseekers with avacancy and Schedule the interview. He is able to search on jobseeker number andVacancy number.This system enables the jobseekers to login, to view all the vacancies and to viewthe applicant and vacancy details. He is also able to search on interview date, number andvacancy number.The Job Seekers can register and create a profile. He/She can search and apply for jobs online. He could view his interview details and application status

.

**Definitions ,Acronyms and Abbreviations :-**

1.

Recruiting company : The company who creates vacancies.2.

Job Seekers : The person who sell applies for job.3.

Admin : The authorized person who controls all the network

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**CHAPTER 2Requirement Analysi**

**Requirement Analysis**

Systems analysis is the study of sets of interacting entities, including computer systems analysis. This field is closely related to operations research. It is also "an explicitformal inquiry carried out to help someone (referred to as the decision maker) identify a better course of action and make a better decision than he might otherwise have made."Analysis is defined as the procedure by which we break down an intellectual or substantialwhole into parts so that we can achieve our end goals.The development of a computer-based information system includes a systemsanalysis phase which produces or enhances the

**data model**

which itself is a precursor tocreating or enhancing a

**database**

. There are a number of different approaches to systemanalysis. When a computer-based information system is developed, systems analysis wouldconstitute the following steps:1.

The development of a feasibility study, involving determining whether a project iseconomically, socially, technologically and organizationally feasible.2.

Conducting fact-finding measures, designed to ascertain the requirements of thesystem's end-users. These typically span interviews, questionnaires, or visualobservations of work on the existing system.3.

Gauging how the end-users would operate the system (in terms of generalexperience in using computer hardware or software), what the system would beused for etc.

Another view outlines a phased approach to the process. This approach breaks systemsanalysis into 5 phases:



Scope definition



Problem analysis



Requirements analysis



Logical design



Decision analysis

**Use case**

are a widely-used systems analysis modeling tool for identifying andexpressing the functional requirements of a system. Each use case is a business scenario or event for which the system must provide a defined response. Use cases evolved out of object-oriented analysis.

**2.1 Requirement specification**

Information gathering is usually the first phase of the software development project.The purpose of this phase is to identify and document the exact requirements for the

system. The user‘s request identifies the need for a new information system and on

investigation re-defined the new problem to be based on MIS, which supportsmanagement. The objective is to determine whether the request is valid and feasible beforea recommendation is made to build a new or existing manual system continues.The major steps are

–



Defining the user requirements.



Studying the present system to verify the problem.



Defining the performance expected by the candidate to use requirements.

**2.2 S/W and H/W Requirement Specification**

**2.2.1 Hardware Requirements**



Pentium IV 1.8 GHz and Above



128 MB DDRAM or More



40 GB HDD



Printer



Power Backup



Internet Connection

**2.2.2 Software Requirements**

1. JDK 1.7



NetBeans 7.0.12. Database



MySQL Database Server 5.1.373. Web Server



Tomcat 7.0.144. Application Server



GlassFish v3.15. Operating System



Windows 7 / Vista / XP sp3 / Linux Fedora 14

**2.3 Technologies Used1. Presentation Layer**

1.1 Web Interface



HTML (Hypertext Markup Language)



CSS (Cascading Style Sheet)



JavaScript

1.2 Windows Interface



Swing

**2. Database Layer**



SQL

**3. Business Layer**

3.1 Core Java Technologies



Exception Handling



Multithreading



Collections Framework



JDBC (Java Database Connectivity)3.2 Web Components



Servlets



JSP (Java Server Pages)3.3 Enterprise Components



J2EE (Java 2 Enterprise Edition)

**HTML**

HTML is a language for describing web pages.



HTML stands for

**H**

yper

**T**

ext

**M**

arkup

**L**

anguage



HTML is not a programming language, it is a

**markup language**



A markup language is a set of

**markup tags**



HTML uses

**markup tags**

to describe web pagesHTML markup tags are usually called HTML tags



HTML tags are keywords surrounded by

**angle brackets**

like <html>



HTML tags normally

**come in pairs**

like <b> and </b>



The first tag in a pair is the

**start tag,**

the second tag is the

**end tag**



Start and end tags are also called

**opening tags**

and

**closing tags**

.HTML Documents



HTML documents

**describe web pages**



HTML documents

**contain HTML tags**

and plain text



HTML documents are also

**called web pages**

**CSS**

A few words about CSS



**CSS**

stands for

**C**

ascading

**S**

tyle

**S**

heets



Styles define

**how to display**

HTML elements



Styles are normally stored in

**Style Sheets**



Styles were added to HTML 4.0

**to solve a problem**



**External Style Sheets**

can save you a lot of work



External Style Sheets are stored in

**CSS files**



Multiple style definitions will

**cascade**

into one

https://html2-f.scribdassets.com/gze0gjirk276tpw/images/15-5a3cd2ef67.jpghttps://html2-f.scribdassets.com/gze0gjirk276tpw/images/15-5a3cd2ef67.jpg

CSS provides means to customize inbuilt HTML tagsHTML tags were originally designed to define the content of a document. They weresupposed to say "This is a header", "This is a paragraph", "This is a table", by using tagslike <h1>, <p>, <table>, and so on. The layout of the document was supposed to be takencare of by the browser, without using any formatting tags.As the two major browsers - Netscape and Internet Explorer - continued to add new HTMLtags and attributes (like the <font> tag and the color attribute) to the original HTMLspecification, it became more and more difficult to create Web sites where the content of HTML documents was clearly separated from the document's presentation layout.To solve this problem, the World Wide Web Consortium (W3C) - the non profit, standardsetting consortium, responsible for standardizing HTML - created STYLES in addition toHTML 4.0.All major browsers support Cascading Style Sheets.Styles sheets define HOW HTML elements are to be displayed, just like the font tag andthe color attribute in HTML 3.2. Styles are normally saved in external .css files. Externalstyle sheets enable you to change the appearance and layout of all the pages in your Web, just by editing one single CSS document.

**JavaScript**

JavaScript is used in millions of Web pages to improve the design, validate forms, detect browsers, create cookies, and much more. JavaScript is the most popular scriptinglanguage on the internet, and works in all major browsers, such as Internet Explorer,Firefox, and Opera.A few words about JavaScript



JavaScript was designed to add interactivity to HTML pages



JavaScript is a scripting language



A scripting language is a lightweight programming language



JavaScript is usually embedded directly into HTML pages

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

JavaScript is an interpreted language (means that scripts execute without preliminary compilation)



Everyone can use JavaScript without purchasing a licensePurpose of using JavaScript



**JavaScript gives HTML designers a programming tool -**

HTML authors arenormally not programmers, but JavaScript is a scripting language with a verysimple syntax! Almost anyone can put small "snippets" of code into their HTML pages



**JavaScript can put dynamic text into an HTML page -**

A JavaScript statementlike this: document.write("<h1>" + name + "</h1>") can write a variable text intoan HTML page



**JavaScript can react to events -**

A JavaScript can be set to execute whensomething happens, like when a page has finished loading or when a user clicks onan HTML element



**JavaScript can read and write HTML elements -**

A JavaScript can read andchange the content of an HTML element



**JavaScript can be used to validate data -**

A JavaScript can be used to validateform data before it is submitted to a server. This saves the server from extra processing



**JavaScript can be used to detect the visitor's browser**

- A JavaScript can be usedto detect the visitor's browser, and - depending on the browser - load another pagespecifically designed for that browser



**JavaScript can be used to create cookies**

- A JavaScript can be used to store andretrieve information on the visitor's computer Where to Put the JavaScript

**Scripts in the head section:**

Scripts to be executed when they are called, or when an eventis triggered, go in the head section. When you place a script in the head section, you willensure that the script is loaded before anyone uses it.

**Scripts in the body section:**

Scripts to be executed when the page loads go in the bodysection. When you place a script in the body section it generates the content of the page.

**Using an External JavaScript:**

When you might want to run the same JavaScript onseveral pages, without having to write the same script on every page, then you can write aJavaScript in an external file. Save the external JavaScript file with a .js file extension. Theexternal script cannot contain the <script> tag. To use the external script, point to the J1.jsfile in the "src" attribute of the <script> tag:<script type="text/javascript" src="J1.js"></script>

**Java Technology**

Java technology is both a programming language and a platform.

**The Java Programming Language**

The Java programming language is a high-level language that can be characterized by allof the following characteristics



Simple



Object oriented



Distributed



Multithreaded



Architecture neutral



Portable



High performance



RobustIn the Java programming language, all source code is first written in plain text files endingwith the .java extension. Those source files are then compiled into .class files by the javaccompiler. A .class file does not contain code that is native to your processor; it insteadcontains

*bytecodes*

—

the machine language of the Java Virtual Machine[1](http://C:/java16Tut/getStarted/intro/definition.html#FOOT%23FOOT) (Java VM). The java launcher tool then runs your application with an instance of the Java Virtual Machine.

https://html2-f.scribdassets.com/gze0gjirk276tpw/images/18-c923d7f3c9.jpg

An overview of the software development process.Because the Java VM is available on many different operating systems, the same .classfiles are capable of running on Microsoft Windows, the Solaris

TM

Operating System(Solaris OS), Linux, or Mac OS. Some virtual machines, such as the Java HotSpot virtualmachine, perform additional steps at runtime to give your application a performance boost.

The Java Platform

A

*platform*

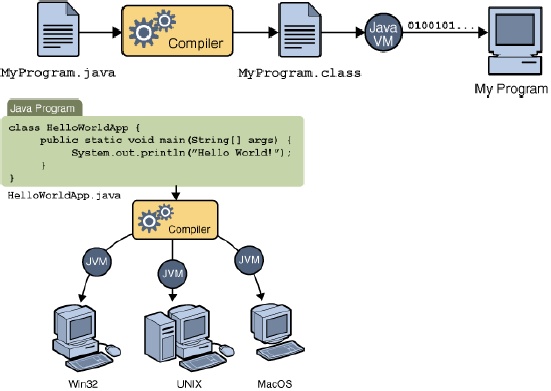
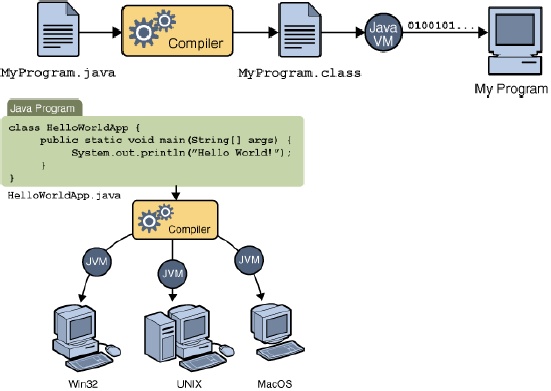
is the hardware or software environment in which a program runs.Most platforms can be described as a combination of the operating system and underlyinghardware. The Java platform differs from most other platforms in that it's a software-only platform that runs on top of other hardware-based platforms.The Java platform has two components:



The Java Virtual Machine



The Java Application Programming Interface (API)



Java Virtual Machine is the base for the Java platform and is ported onto various hardware- based platforms.The API is a large collection of ready-made software components that provide many usefulcapabilities. It is grouped into libraries of related classes and interfaces; these libraries areknown as packages.The API and Java Virtual Machine insulate the program from theunderlying hardware.Every full implementation of the Java platform gives you the following features:



**Development Tools**

: The development tools provide means for compiling, running,debugging, and documenting your applications. The main tools are the javaccompiler, the java launcher, and the javadoc documentation tool.



**Application Programming Interface (API)**

: The API provides the corefunctionality of the Java programming language. It offers a wide array of usefulclasses ready for use in your own applications. It spans everything from basicobjects, to networking and security, to XML generation and database access, etc.



**Deployment Technologies**

: The JDK software provides standard mechanisms suchas the Java Web Start software and Java Plug-In software for deploying your applications to end users.



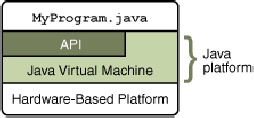
**User Interface Toolkits**

: The Swing and Java 2D toolkits make it possible tocreate sophisticated Graphical User Interfaces (GUIs).



**Integration Libraries**

: Integration libraries such as the Java IDL, JDBC, JNDI,Java RMI, and Java Remote Method Invocation over Internet Inter-ORB ProtocolTechnology (Java RMI-IIOP Technology) enable database access and manipulationof remote objects.



**Java - Exception Handling**

An

*exception*

is an event, which occurs during the execution of a program, thatdisrupts the normal flow of the program's instructions.When an error occurs within a method, the method creates an object and hands itoff to the runtime system. The object, called an

*exception object*

, contains informationabout the error, including its type and the state of the program when the error occurred.Creating an exception object and handing it to the runtime system is called

*throwing anexception*

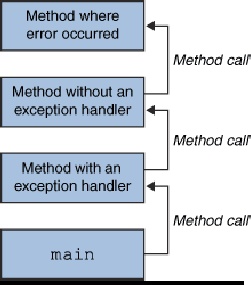
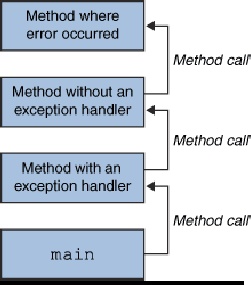
.After a method throws an exception, the runtime system attempts to findsomething to handle it. The set of possible "somethings" to handle the exception is theordered list of methods that had been called to get to the method where the error occurred.The list of methods is known as the

*call stack*

.The call stack The runtime system searches the call stack for a method that contains a block of code that can handle the exception. This block of code is called an

*exception handler*

. Thesearch begins with the method in which the error occurred and proceeds through the callstack in the reverse order in which the methods were called. When an appropriate handler is found, the runtime system passes the exception to the handler. An exception handler isconsidered appropriate if the type of the exception object thrown matches the type that can be handled by the handler.



The exception handler chosen is said to

*catch the exception*

. If the runtime systemexhaustively searches all the methods on the call stack without finding an appropriateexception handler, as shown in the next figure, the runtime system (and, consequently, the program) terminates.Searching the call stack for the exception handler A program can catch exceptions by using a combination of the try, catch, andfinally blocks.



The try block identifies a block of code in which an exception can occur.



The catch block identifies a block of code, known as an exception handler, that canhandle a particular type of exception.The finally block identifies a block of code that is guaranteed to execute, and is the right place to close files, recover resources, and otherwise clean up after the code enclosed in thetry block.

**Java**

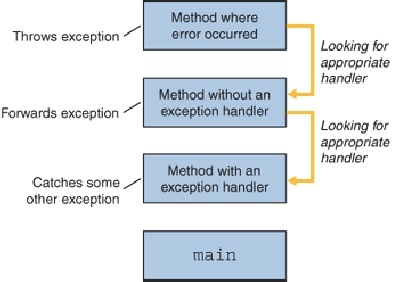
**–**

**Multithreading**

Threads are called lightweight processes. Threads exist within a process

—

every process has at least one. Threads share the process's resources, including memory and openfiles. This makes for efficient, but potentially problematic, communication.



Multithreaded execution is an essential feature of the Java platform. Everyapplication has at least one thread

—

or several, if you count "system" threads that dothings like memory management and signal handling. But from the application programmer's point of view, you start with just one thread, called the main thread. Thisthread has the ability to create additional threads.Each thread is associated with an instance of the class Thread. There are two basic strategies for using Thread objects to create a concurrent application.



To directly control thread creation and management, simply instantiate Thread eachtime the application needs to initiate an asynchronous task.



To abstract thread management from the rest of your application, pass theapplication's tasks to an executor.

**Java - JDBC**

JDBC stands for "Java DataBase Connectivity". It is an API (ApplicationProgramming Interface) which consists of a set of Java classes, interfaces and exceptionsand a specification to which both JDBC driver vendors and JDBC developers adhere whendeveloping applications.JDBC is a very popular data access standard. RDBMS (Relational DatabaseManagement Systems) or third-party vendors develop drivers which adhere to the JDBCspecification. Other developers use these drivers to develop applications which accessthose databases.The JDBC API is a Java API that can access any kind of tabular data, especiallydata stored in a Relational Database.JDBC helps you to write java applications that manage these programming activities:1.

Connect to a data source, like a database2.

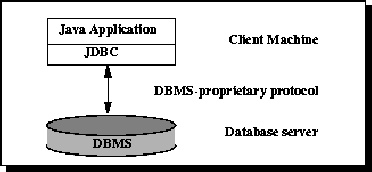
Send queries and update statements to the database

**JDBC Architecture**

The JDBC API supports both two-tier and three-tier processing models for databaseaccess.

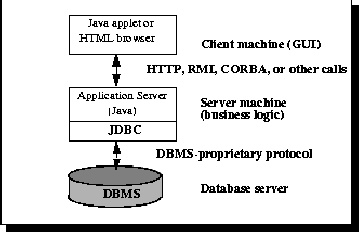
Figure 1: Two-tier Architecture for Data Access.

In the two-tier model, a Java application talks directly to the data source. This requires aJDBC driver that can communicate with the particular data source being accessed. A user'scommands are delivered to the database or other data source, and the results of thosestatements are sent back to the user. The data source may be located on another machine towhich the user is connected via a network. This is referred to as a client/server configuration, with the user's machine as the client, and the machine housing the datasource as the server.In the three-tier model, commands are sent to a "middle tier" of services, which then sendsthe commands to the data source. The data source processes the commands and sends theresults back to the middle tier, which then sends them to the user. MIS directors find thethree-tier model very attractive.



**Figure 2: Three-tier Architecture for Data Access**

.



**Web Components**

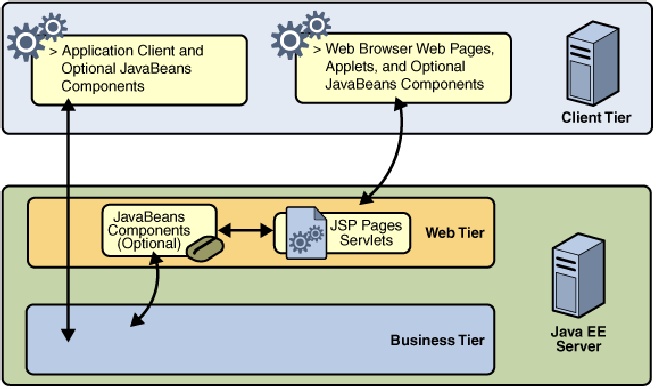
Java web components are either servlets or pages created using JSP technology (JSP pages).

Servlets

are Java programming language classes that dynamically process requests andconstruct responses.

JSP pages

are text-based documents that execute as servlets but allow a more naturalapproach to creating static content.The web tier might include a JavaBeans component to manage the user input andsend that input to enterprise beans running in the business tier for processing, as shown:



**Business Components**

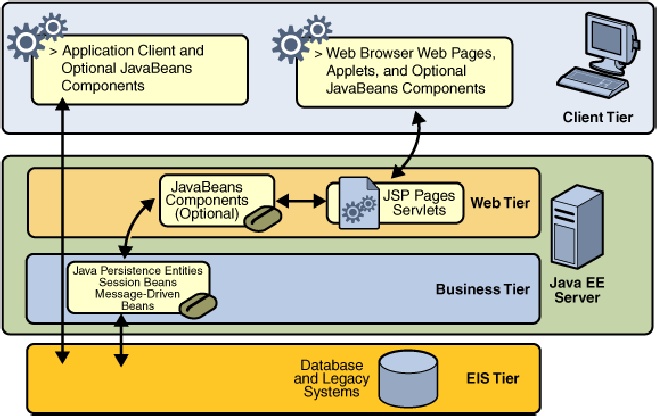
Business code, which is logic that solves or meets the needs of a particular businessdomain is handled by enterprise beans running in the business tier.Following figure shows how an enterprise bean receives data from client programs, processes it (if necessary), and sends it to the enterprise information system tier for storage.An enterprise bean also retrieves data from storage, processes it (if necessary), and sends it back to the client program:

**Enterprise JavaBeans Technology**

An Enterprise JavaBeans (EJB) component, or

*enterprise bean*

, is a body of codehaving fields and methods to implement modules of business logic. You can think of an



enterprise bean as a building block that can be used alone or with other enterprise beans toexecute business logic on the Java EE server.There are two kinds of enterprise beans: session beans and message-driven beans.A

*session bean*

represents a transient conversation with a client. When the client finishesexecuting, the session bean and its data are gone. A

*message-driven bean*

combinesfeatures of a session bean and a message listener, allowing a business component toreceive messages asynchronously. Commonly, these are Java Message Service (JMS)messages.

**Java Servlet Technology**

Java servlet technology lets you define HTTP-specific servlet classes. A servletclass extends the capabilities of servers that host applications that are accessed by way of arequest-response programming model. Although servlets can respond to any type of request, they are commonly used to extend the applications hosted by web servers.

**JavaServer Pages Technology**

JavaServer Pages (JSP) technology lets you put snippets of servlet code directlyinto a text-based document. A JSP page is a text-based document that contains two typesof text: static data (which can be expressed in any text-based format such as HTML,WML, and XML) and JSP elements, which determine how the page constructs dynamicontent.

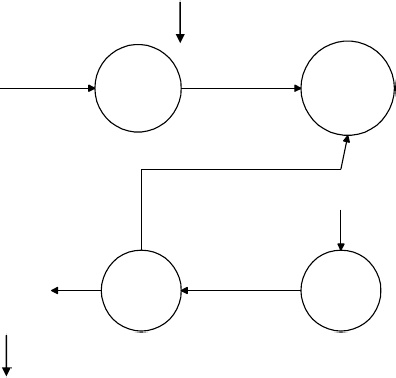
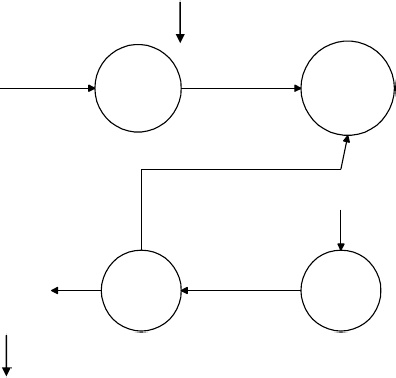
**CHAPTER 3**

**Feasibility Study**

Feasibility study is the process of determination of whether or not a project is worthdoing. Feasibility studies are undertaken within tight time constraints and normallyculminate in a written and oral feasibility report. The contents and recommendations of thisfeasibility study helped us as a sound basis for deciding how to precede the project. Ithelped in taking decisions such as which software to use, hardware combinations, etc.The following is the process diagram for feasibility analysis. In the diagram,the feasibility analysis starts with the user set of requirements. With this, the existingsystem is also observed. The next step is to check for the deficiencies in the existingsystem. By evaluating the above points a fresh idea is conceived to define and quantify therequired goals. Besides that, a set of alternatives and their feasibility is also considered incase of any failure in the proposed system. Thus, feasibility study is an important part insoftware development.

ANALYZE TO FINDDEFICIENCESFIND BROAD ALTERNATIVESOLUTIONEVALUATEFEASIBILITY OF ALTERNATESUSERSTATEDREQUIREMENTSDEFICIENCES INCURRENT SYSTEMPROPOSED FEASIBILITY ALTERNATIVESREVISION BASED ON FEASIBILITY ALTERNATIVESCONSTRAINTS ON RESOURCESWORKING CURRENT SYSTEMUSERS CONSESUSDEFINE ANDQUANTIFY GOALS

PROCESS DIAGRAM FOR FEASIBILITY ANALYSIS



In the SDLC (Systems Development Life Cycle) of our project we maintained a number of feasibility checkpoints between the two phases of the SDLC.These checkpoints indicate that the management decision to be made after a phase is complete. The feasibility checkpoints in our project were as follows:(i)

Survey phase checkpoint(ii)

Study phase checkpoint(iii)

Selection phase checkpoint(iv)

Acquisition phase checkpoint(v)

Design phase checkpoint

**3.1 Technical Feasibility**

Technical feasibility determines whether the work for the project can bedone with the existing equipment, software technology and available personnel. Technicalfeasibility is concerned with specifying equipment and software that will satisfy the user requirement.This project is feasible on technical remarks also, as the proposed system ismore beneficiary in terms of having a sound proof system with new technical componentsinstalled on the system. The proposed system can run on any machines supporting

**Windows**

and

**Internet**

services and works on the best software and hardware that had been used while designing the system so it would be feasible in all technical terms of feasibility. The technologies such as JAVA (JSP, Servlet), JavaScript and the compatible

H/Ws are so familiar with the today‘s knowledge based industry that anyone can easily be

compatible to the proposed environment.

**Technical Feasibility Addresses Three Major Issues: -(a)Is the proposed Technology or Solution Practical?**

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The technologies used are matured enough so that they can be applied toour problems. The practicality of the solution we have developed is proved with the use of the technologies we have chosen. The technologies such as JAVA (JSP, Servlet),JavaScript an

d the compatible H/Ws are so familiar with the today‘s knowledge based

industry that anyone can easily be compatible to the proposed environment.

**(b)Do we currently posses the necessary technology?**

We first make sure that whether the required technologies are available tous or nor. If they are available then we must ask if we have the capacity. For instance,

―Will our current Printer be able to handle the new reports and forms required of a new

system?

**(c)Do we possess the necessary Technical Expertise and is the Schedulereasonable?**

This consideration of technical feasibility is often forgotten during

feasibility analysis. We may have the technology, but that doesn‘t mean we have the skills

required to properly apply that technology.As far as our project is concerned we have the necessary expertise so thatthe proposed solution can be made feasible.

**3.2 Economical Feasibility**

Economical feasibility determines whether there are sufficient benefits increating to make the cost acceptable, or is the cost of the system too high. As this signifiescost benefit analysis and savings. On the behalf of the cost-benefit analysis, the proposedsystem is feasible and is economical regarding its pre-assumed cost for making a system.During the economical feasibility test we maintained the balance betweenthe Operational and Economical feasibilities, as the two were the conflicting. For examplethe solution that provides the best operational impact for the end-users may also be themost expensive and, therefore, the least economically feasible.

We classified the costs of Online job portal according to the phase in whichthey occur. As we know that the system development costs are usually one-time costs thatwill not recur after the project has been completed. For calculating the Development costswe evaluated certain cost categories viz.(i)

Personnel costs(ii)

Computer usage(iii)

Training(iv)

Supply and equipments costs(v)

Cost of any new computer equipments and software.In order to test whether the Proposed System is cost-effective or not weevaluated it through three techniques viz.



**Payback analysis**



**Return on Investment**

:



**Net Present value**



**Cost-based study**

: It is important to identify cost and benefit factors, which can becategorized as follows: 1. Development costs; and 2. Operating costs. This is ananalysis of the costs to be incurred in the system and the benefits derivable out of thesystem.



**Time-based study**

: This is an analysis of the time required to achieve a return oninvestments. The future value of a project is also a factor.

**3.3 Behavioral feasibility**

People are inherently resistant to change and computers have been known tofacilitate change. There is always some reluctance among the users against the introductionof new system but they were told that this system would eliminate the unnecessaryoverhead of database migration and conversion, which presently had to be carried out ondaily basis to facilitate transactions between the different departments. The objective thisfeasibility phase is to take the operational staff into confidence. As the success of a goodsystem depends upon the willingness of the operating staff, they were taken into fullconfidence that the new proposed system would make their jobs easier, relieve them fromthe unnecessary overheads and reduce the possibility of errors creeping into the system.

**CHAPTER 4SYSTEM DESIGN**

**4.1 Introduction**

After the analysis phase we have with us the details of the existing system andthe requirements of the user for the new system. This phase diverts focus from the problemdomain to the solution domain. It acts as a bridge between the requirement phase and itssolution. The design phase focuses on the detailed implementation of the systemrecommended in the feasibility study.Systems design is the process or art of defining the architecture, components,modules, interfaces, and data for a system to satisfy specified requirements. There is someoverlap with the disciplines of systems analysis, systems architecture and systemsengineering.Object-oriented analysis and design (OOAD) methods are becoming the mostwidely used methods for computer system design. The UML has become the standardlanguage used in Object-oriented analysis and design. It is widely used for modelingsoftware systems and is increasingly used for high designing non-software systems andorganizations.

**The External Design**

External design consists of conceiving, planning out and specifying theexternally observable characteristics of the software product. These characteristics includeuser displays or user interface forms and the report formats, external data sources and thefunctional characteristics, performance requirements etc. External design begins during theanalysis phase and continues into the design phase.

**Logical design**

The logical design of a system pertains to an abstract representation of the dataflows, inputs and outputs of the system. This is often conducted via modelling, whichinvolves a simplistic (and sometimes graphical) representation of an actual system. In thecontext of systems design, modelling can undertake the following forms, including:

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Data flow diagrams



Entity Life Histories



Entity Relationship Diagrams

**Physical design**

The physical design relates to the actual input and output processes of thesystem. This is laid down in terms of how data is input into a system, how it isverified/authenticated, how it is processed, and how it is displayed as output.Physical design, in this context, does not refer to the tangible physical design of an information system. To use an analogy, a personal computer's physical design involvesinput via a keyboard, processing within the CPU, and output via a monitor, printer, etc. Itwould not concern the actual layout of the tangible hardware, which for a PC would be amonitor, CPU, motherboard, hard drive, modems, video/graphics cards, USB slots, etc.

**Design Methodology: Rapid Application Development (RAD**

**)**

Rapid Application Development (RAD) is a methodology in which a systemsdesigner produces prototypes for an end-user. The end-user reviews the prototype, andoffers feedback on its suitability. This process is repeated until the end-user is satisfiedwith the final system. It is widely used for modeling software systems and is increasinglyused for high designing non-software systems and organizations.

**4.2**

**Module Description**



To develop a powerful online programming environment for java programming.



To manage all details of all users of the WebIDE.



To manage programs(i.e. Java files) on server made by users using IDE.



To provide support to users, so that users could share their problems with other users.



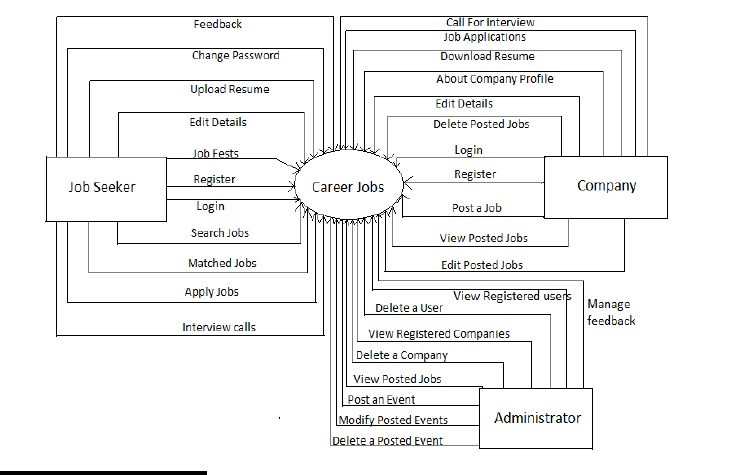
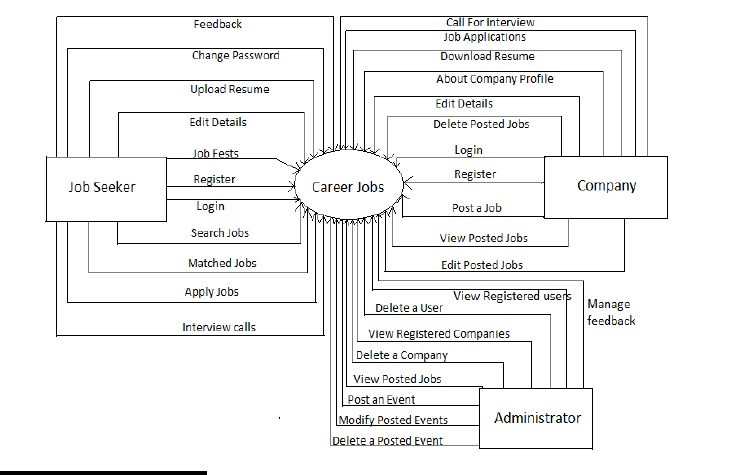
To allow users to share their Java Programs with other users.

**4.3.**

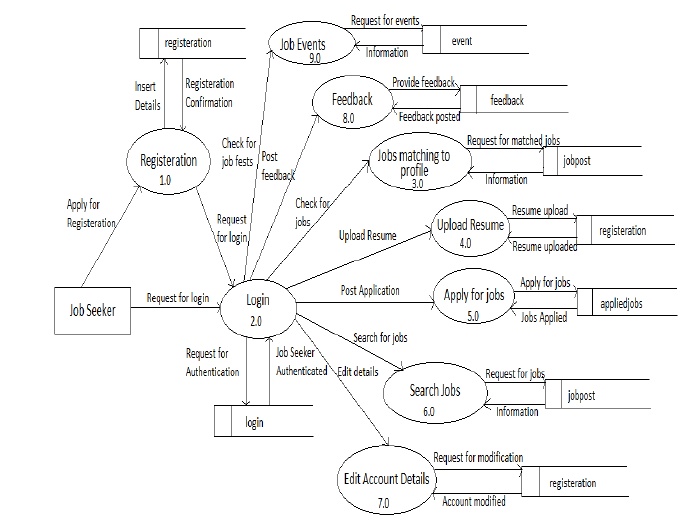
**DFD’S**

**& ER Diagram**

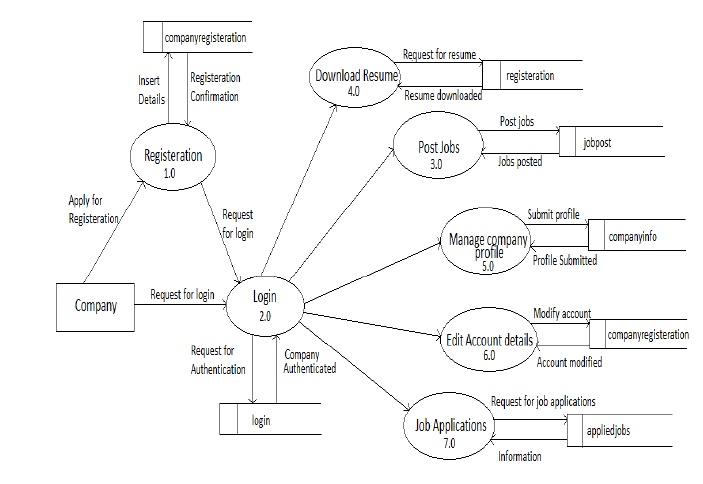
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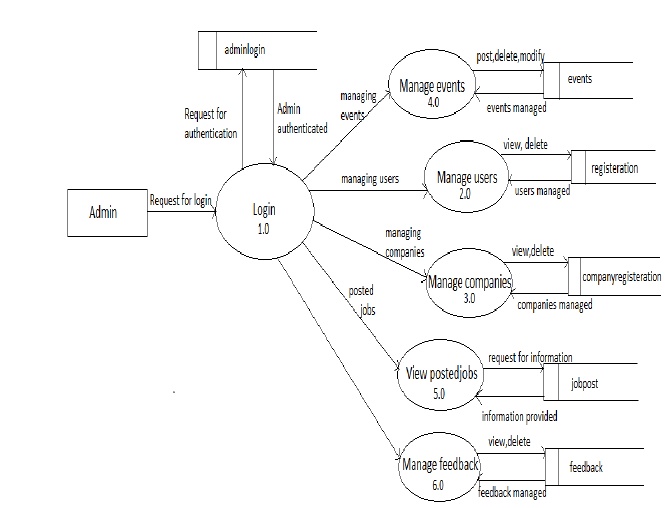
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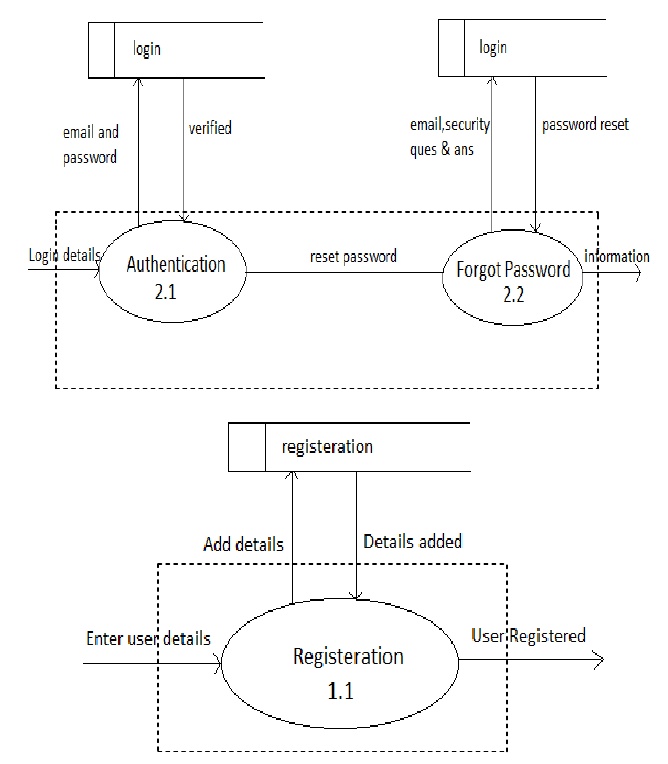
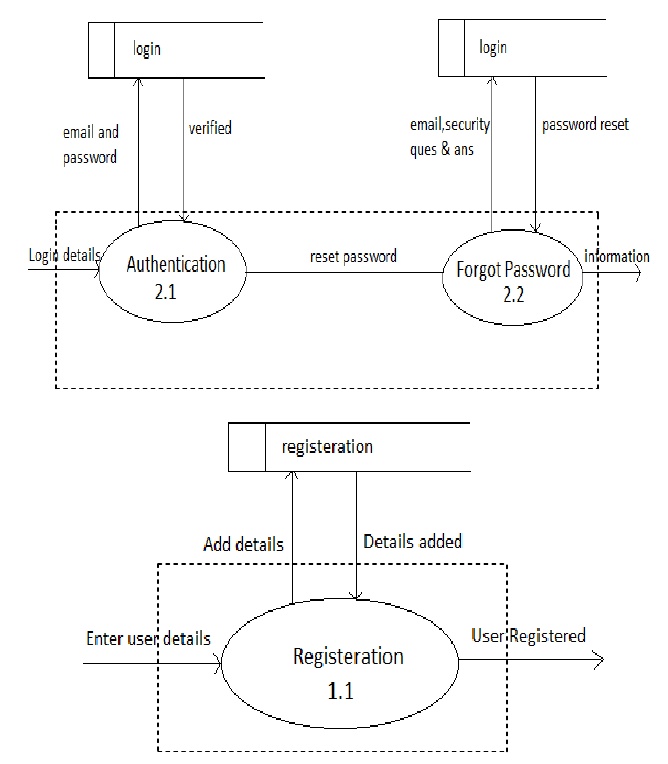
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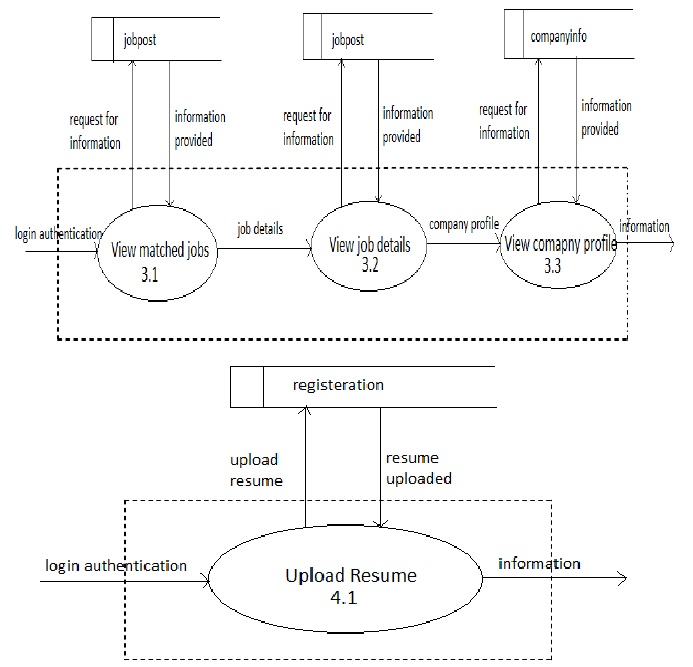
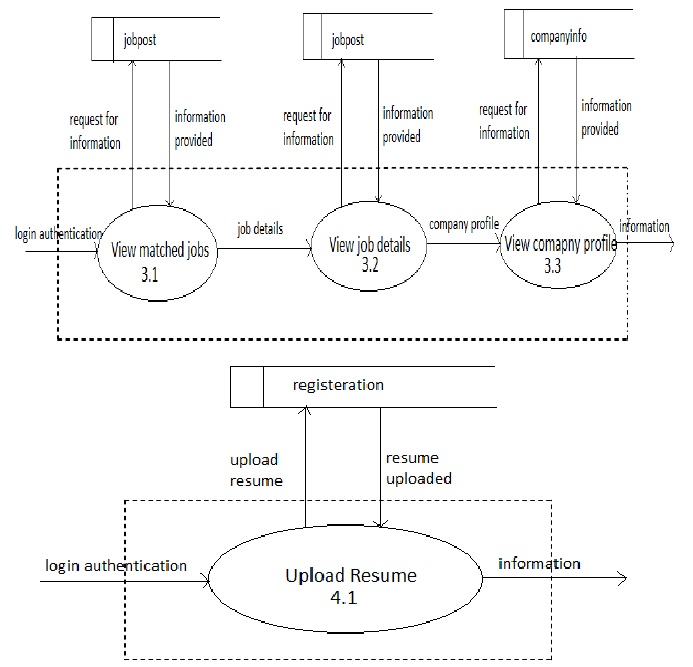


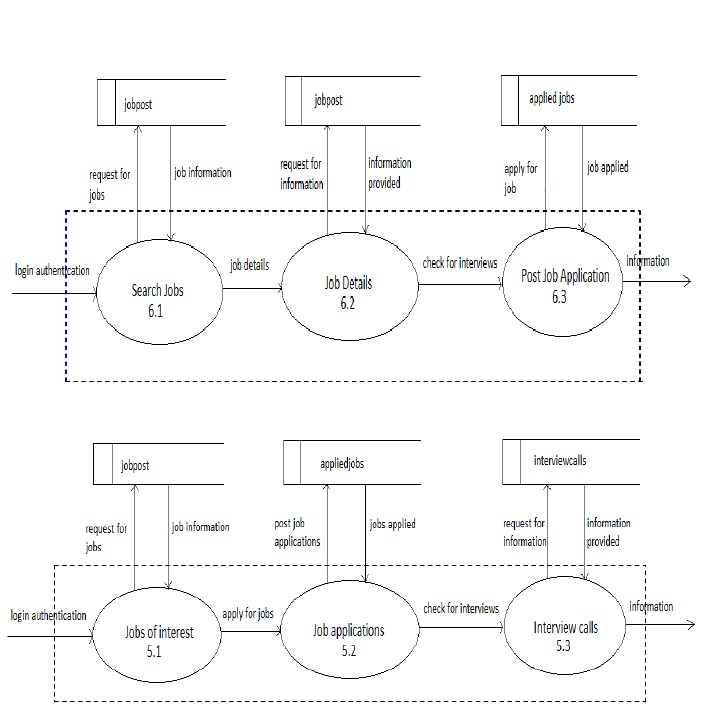
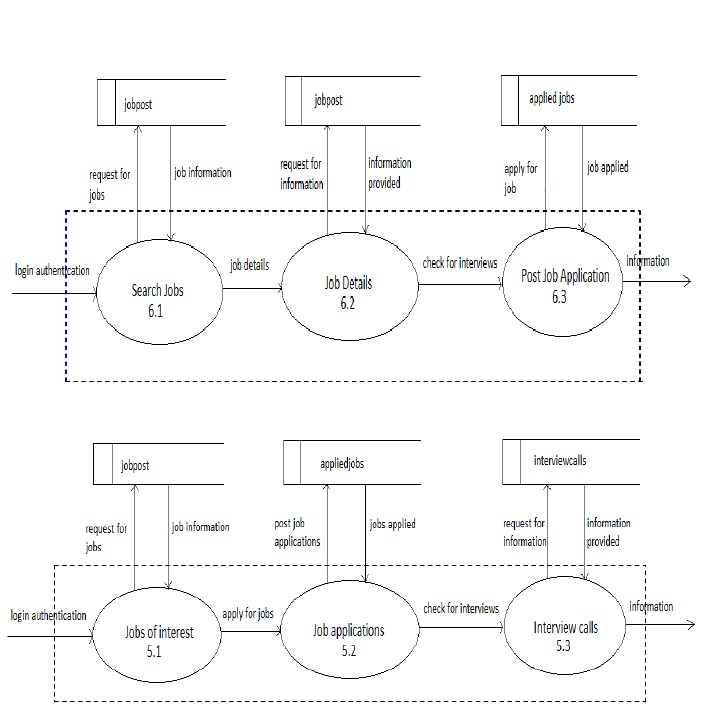
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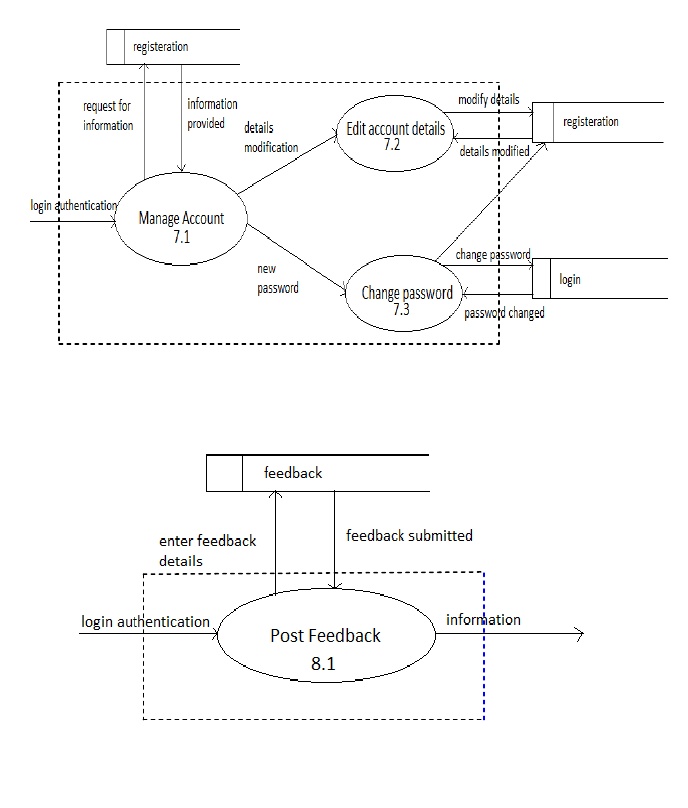
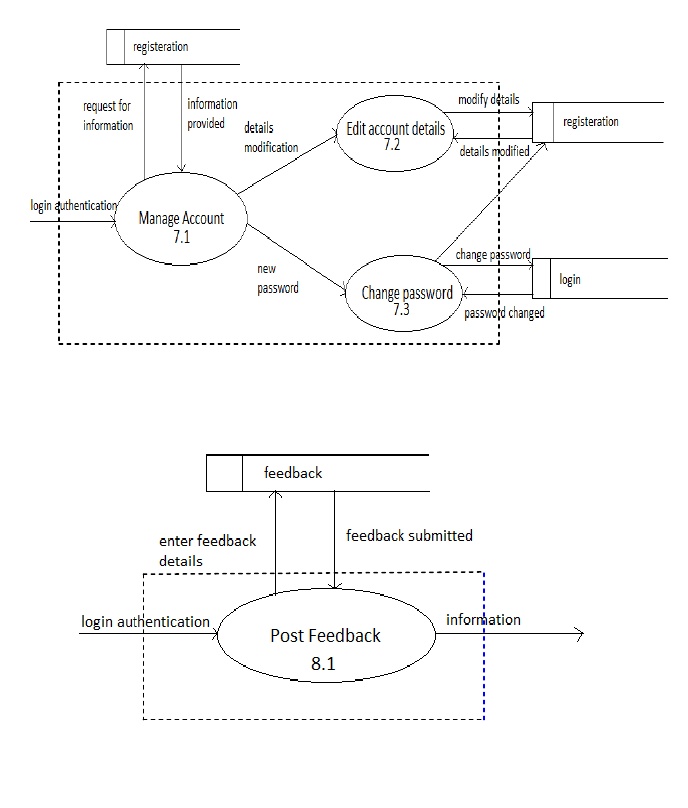


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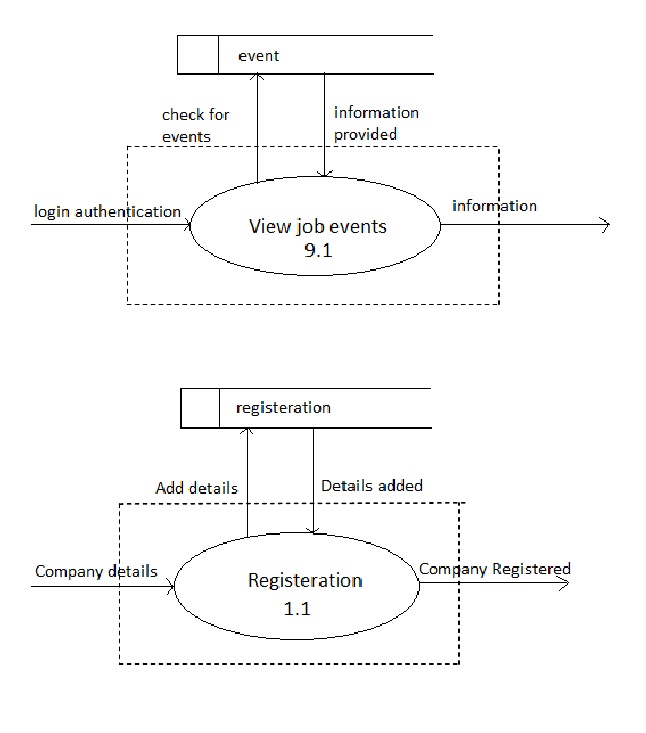
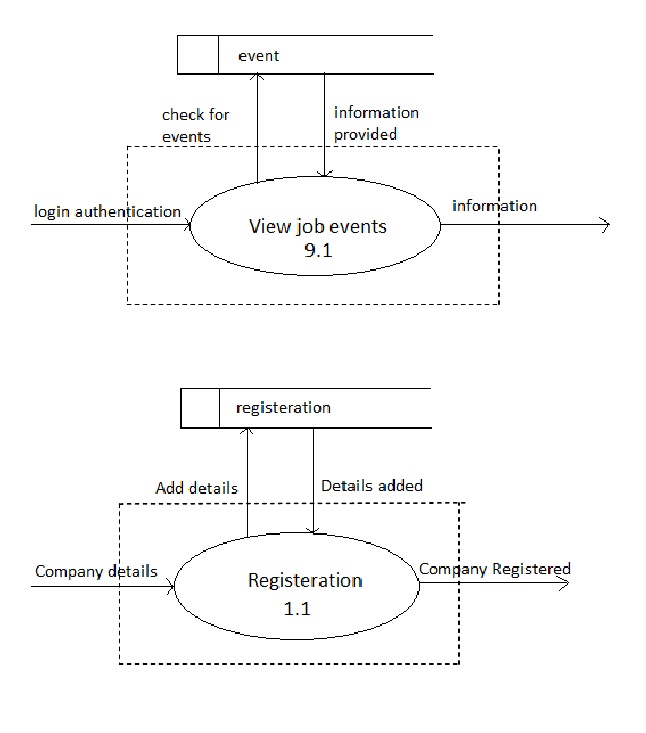


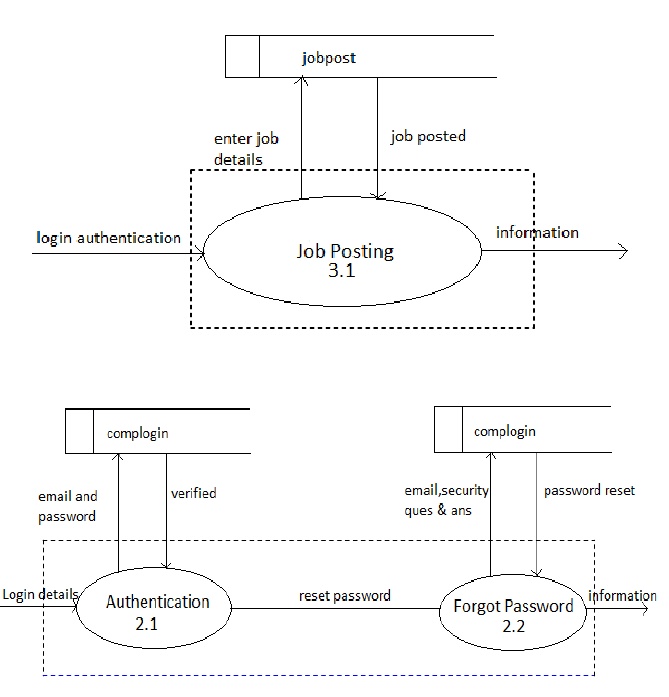
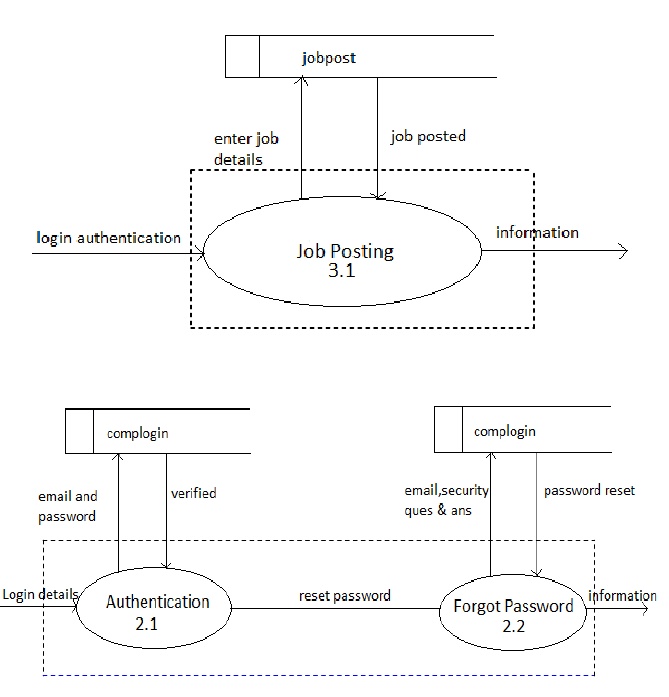


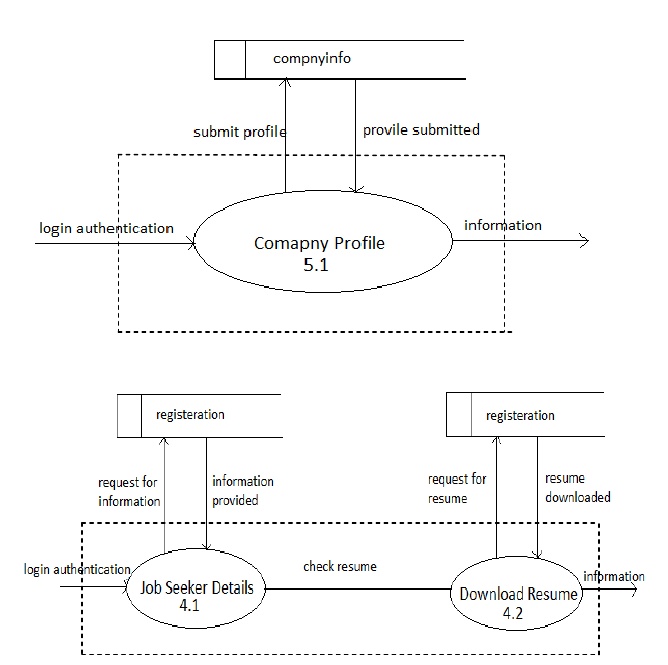
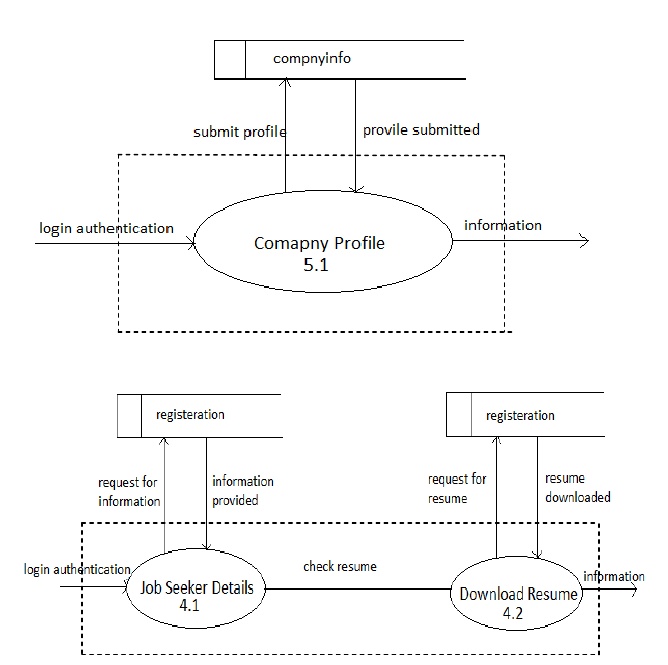


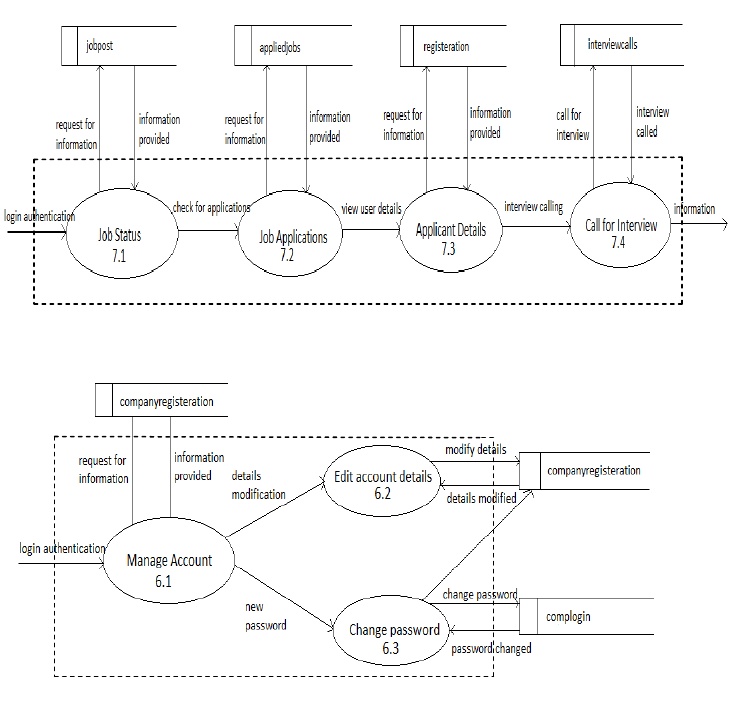
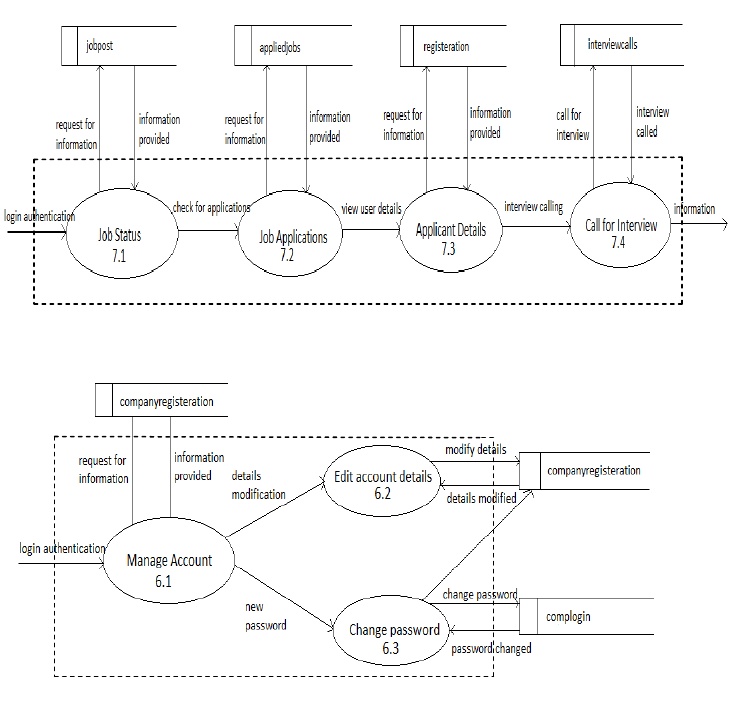


Level 2(Company)

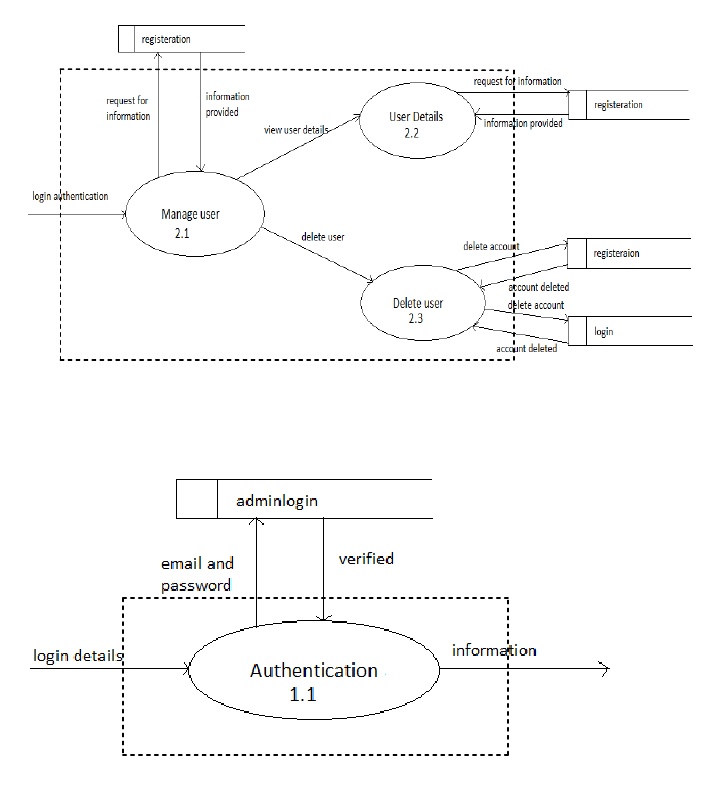
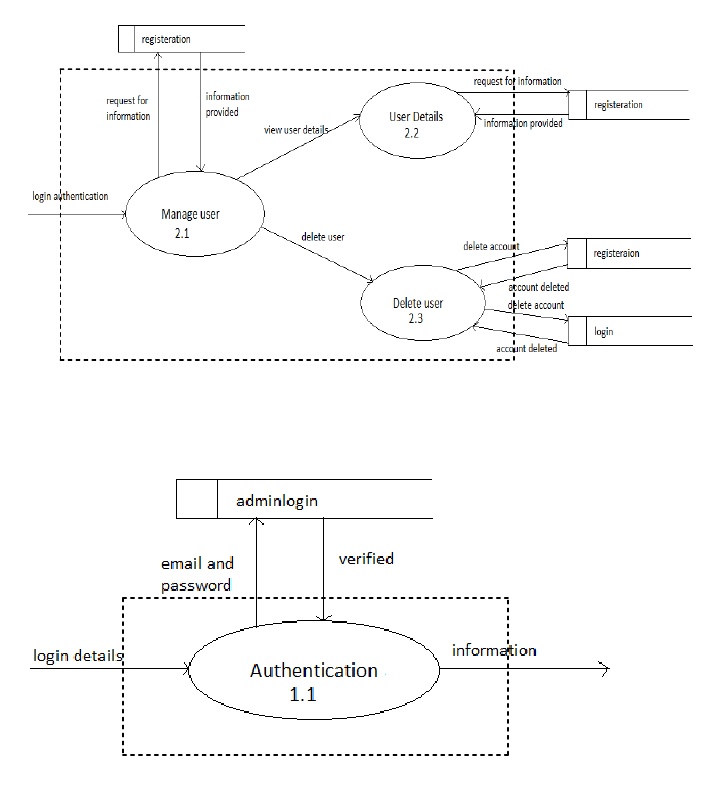


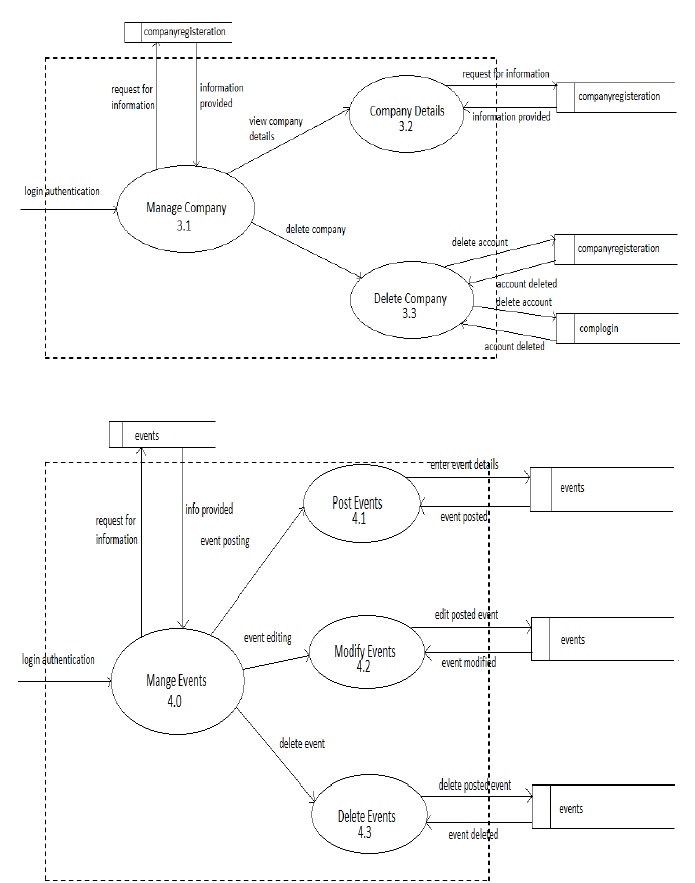
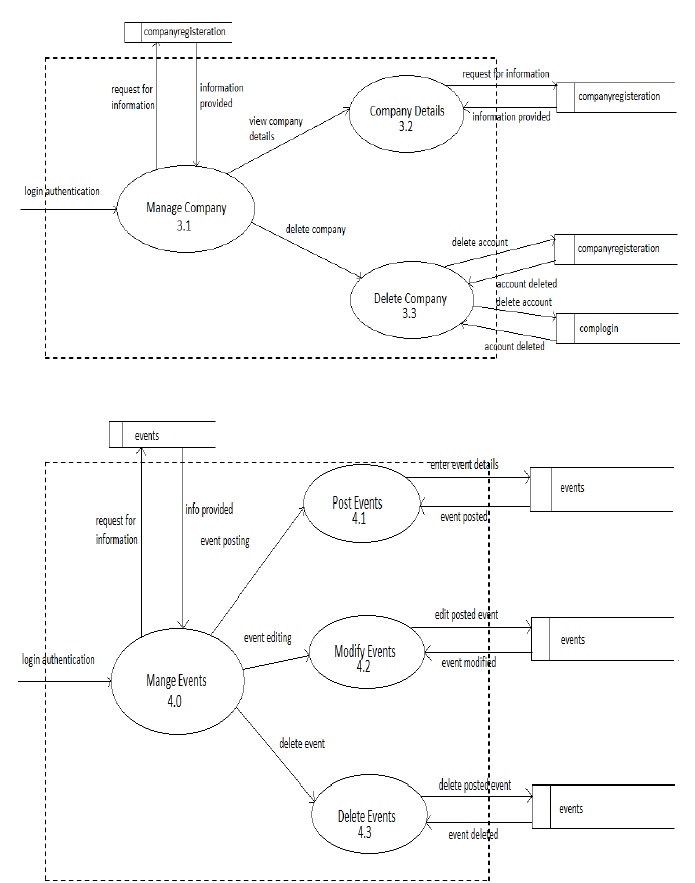


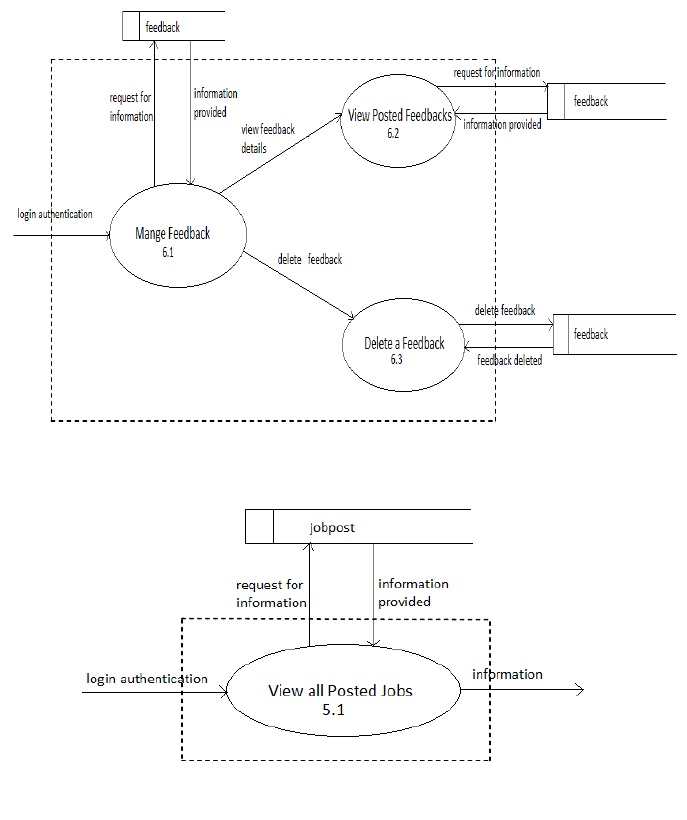
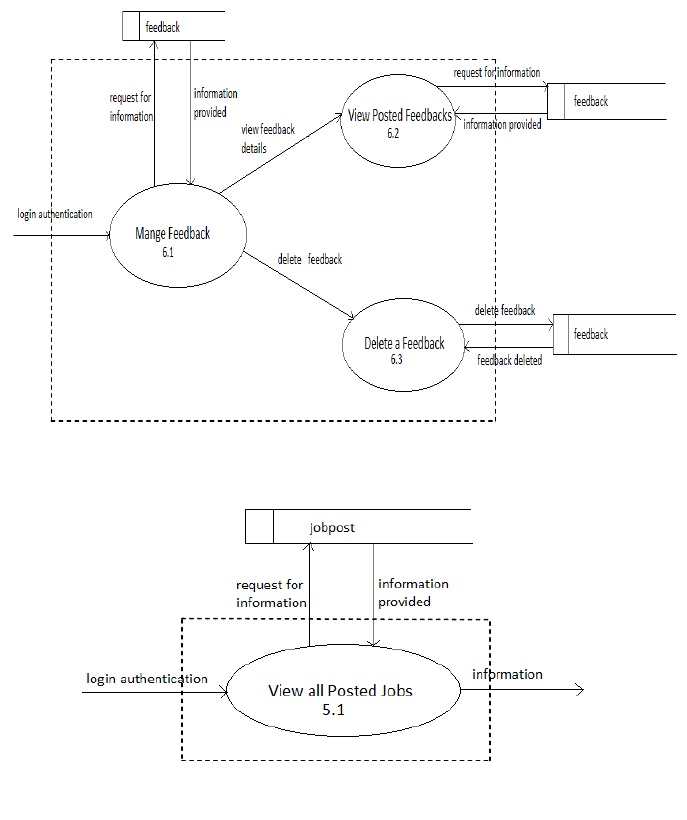




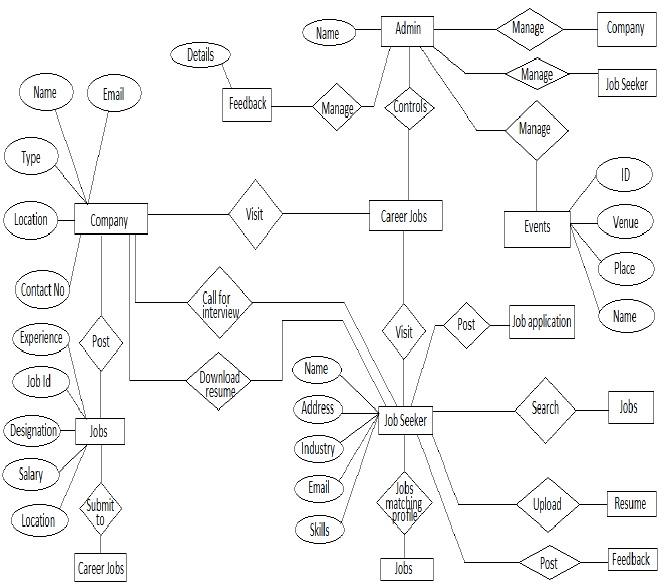
Level 2(Admin)







ER Diagram



**4.3 DATABASE DESIGN1.**

**Table Name: LOGIN: -**

**Field Name Data Type Size Constraints Description**

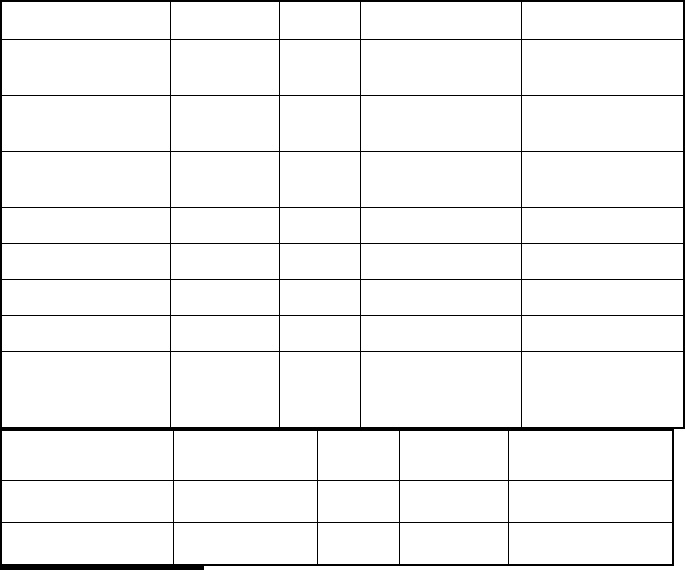
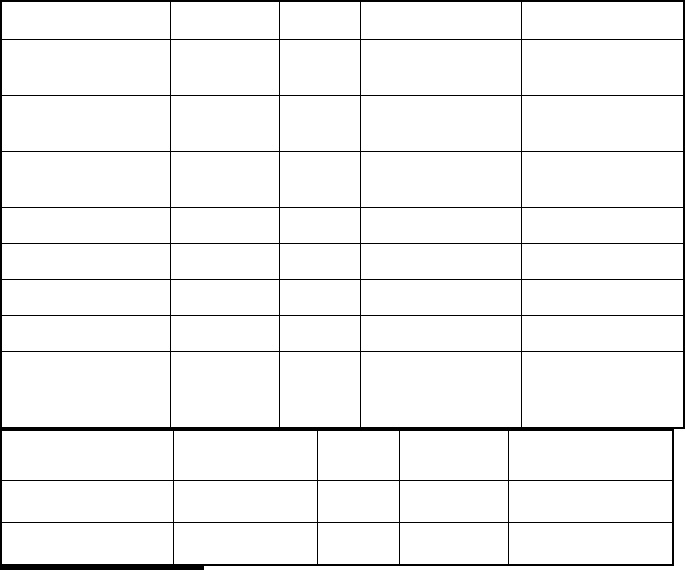
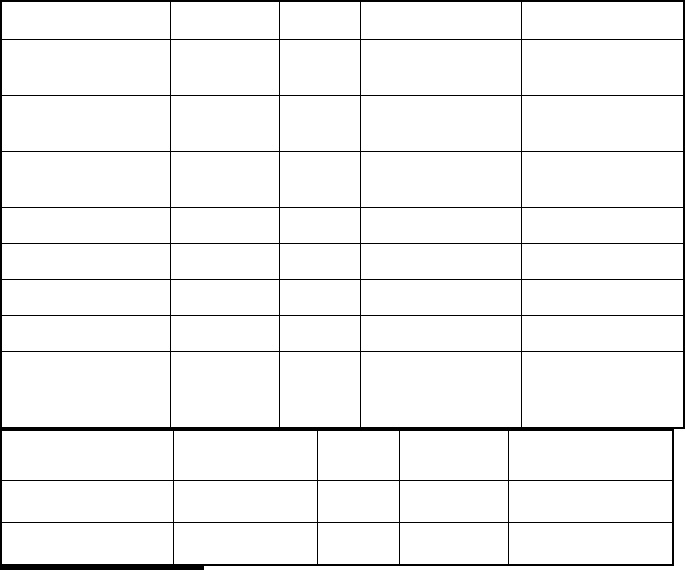
EMAIL VARCHAR2 25 Primary Key USER E-MAILPASSWORD VARCHAR2 10 USER PASSWORD

**2.Table Name:**

**REGISTRATION: -**

**Field Name Data Type Size Constraints Description**

E-MAIL VARCHAR2 25 Primary Key E-MAIL OF THEUSER FIRST NAME VARCHAR2 50 FIRST NAME OFTHE USER LAST NAME VARCHAR2 25 LAST NAME OFUSER PASSWORD VARCHAR2 15 USER PASSWORDLOCATION VARCHAR2 50 USER LOCATIONSKILLS VARCHAR2 50 USER KEY SKILLSGENDER VARCHAR2 2 GENDER OF USER INDUSTRY VARCHAR2 20 INDUSTRY TOWHICH USER BELONG



**2.**

**Table Name:**

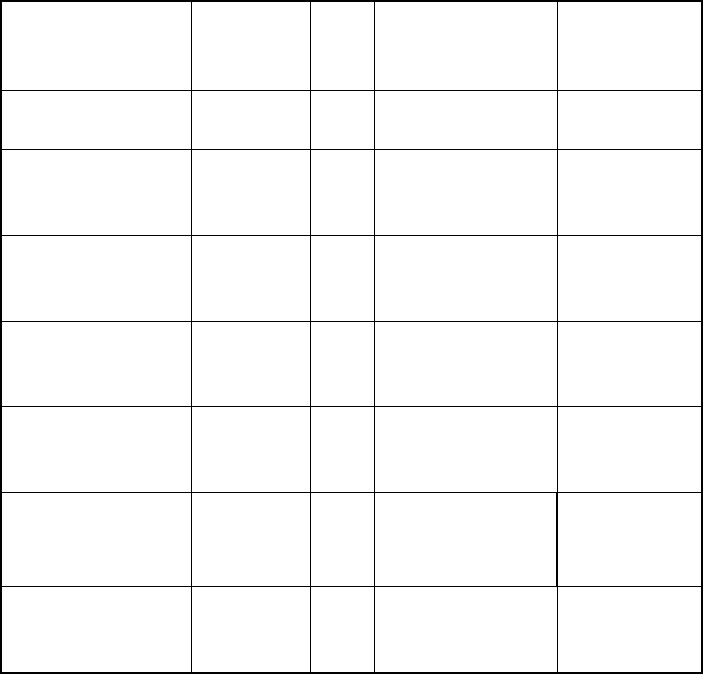
**PROFILE: -**

**FIELD NAME DATATYPE SIZE CONSTRAINTS DESCRIPTION**

E-MAIL VARCHAR2 25 PRIMARY KEY USER EMAILDOB NUMBER 10 USER DATE OFBIRTHQUALIFICATION VARCHAR2 10 QUALIFICATIONOF USER YEAR NUMBER 4 PASSOUT YEAR OF COLLEGECOLLEGE VARCHAR2 30

USER‘S COLLEGE

NAMEUNIVERSITY VARCHAR2 20 USER UNIVERSITY NAMERESUMETITLE VARCHAR2 18 TITLE OF USER RESUME



**4. Table Name: INTERVIEW CALL : -**

**FIELD NAME**

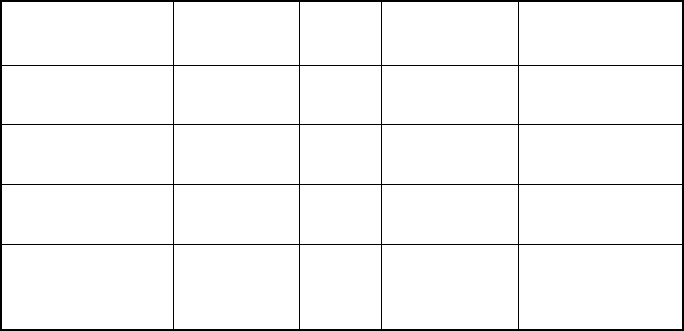
**DATATYPE**

**SIZE**

**CONSTRAINTS**

**DESCRIPTION**

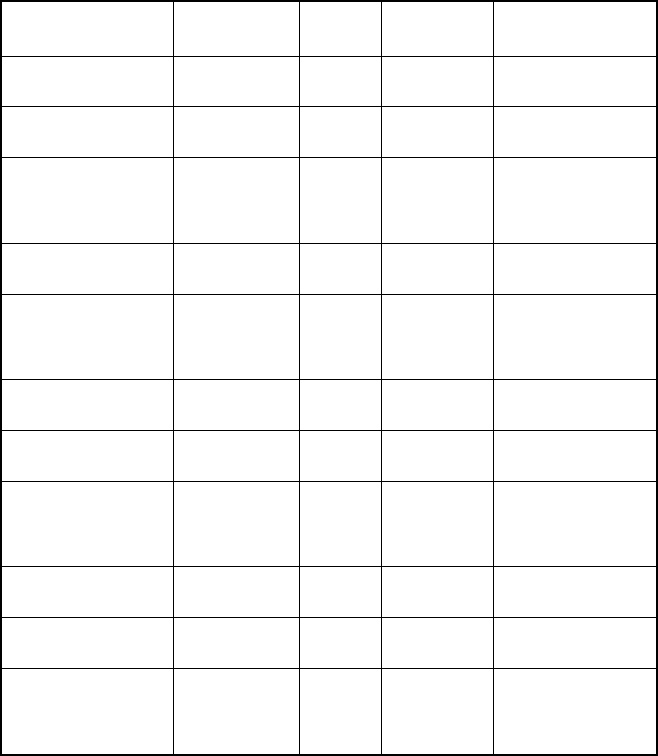
JOB ID VARCHAR2 6 JOB ID NUMBER PROFILE VARCHAR2 20 PROFILE OF JOBCOMPANY EMAIL VARCHAR2 30 COMPANY EMAILUSER EMAIL VARCHAR2 30 APPLICABLE USER EMAIL



**5. Table Name: : -JOB POST**

**Field Name Data Type Size Constraints Description**

ID VARCHAR2 15 Primary Key JOB ID.PROFILE VARCHAR2 20 JOB PROFILECOMPANY VARCHAR2 20 NAME OFCOMPANYPLACE VARCHAR2 30 JOB LOCATIONEXPERIENCE NUMBER 3 EXPERIENCEREQUIREDSALARY NUMBER 10 OFFERED SALARYP\_PIN NUMBER 8 PERMANENT PINDATE DATE 10 DATE OF JOBPOSTINGDESCRIPTION VARCHAR2 50 JOB DESCRIPTIONINDUSTRY VARCHAR2 20 INDUSTRYEMAIL VARCHAR2 15 EMAIL OFCOMPANY.



**6. Table Name: INTERVIEW CALL : -**

**FIELD NAME**

**DATATYPE**

**SIZE**

**CONSTRAINTS**

**DESCRIPTION**

JOB ID VARCHAR2 6 JOB ID NUMBER PROFILE VARCHAR2 20 PROFILE OF JOBCOMPANY EMAIL VARCHAR2 30 COMPANY EMAILUSER EMAIL VARCHAR2 30 APPLICABLE USER EMAIL

**7. Table Name: FEEDBACK : -**

**FIELD NAME**

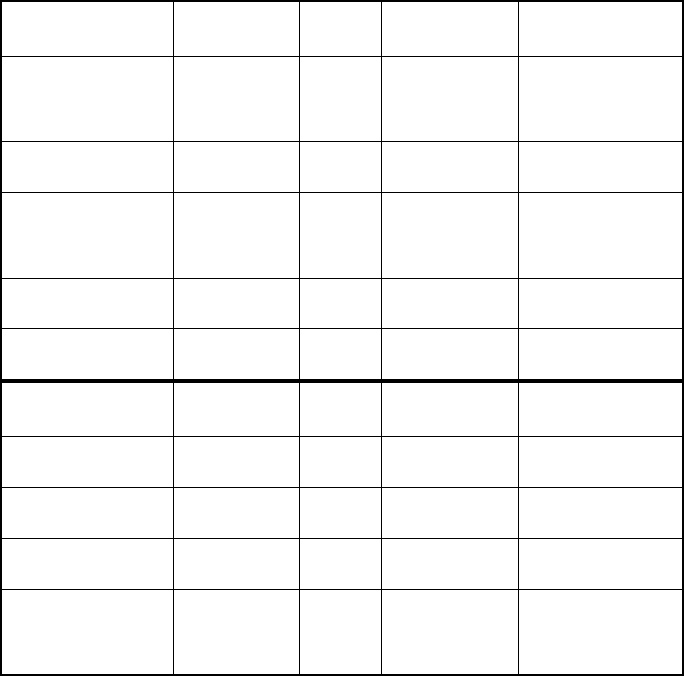
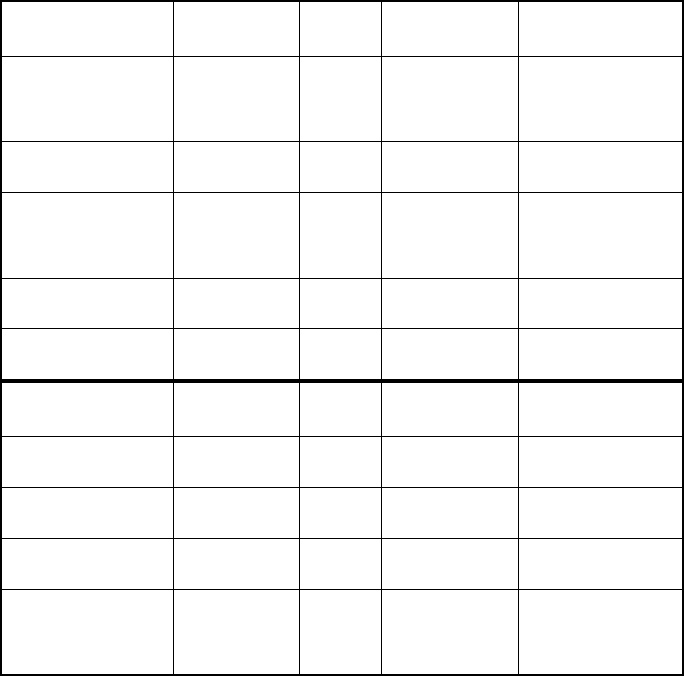
**DATATYPE**

**SIZE**

**CONSTRAINTS**

**DESCRIPTION**

SUBJECT VARCHAR2 30 SUBJECT FOR FEEDBACK NAME VARCHAR2 20 NAME OF SENDER PHONE NO. VARCHAR2 10 PHONE. NO. OFSENDER E-MAIL VARCHAR2 30 E-MAIL OF SENDER DETAILS VARCHAR2 30 DETAILS OF QUERY



**8. Table Name: EVENT : -**

**FIELD NAME**

**DATATYPE**

**SIZE**

**CONSTRAINTS**

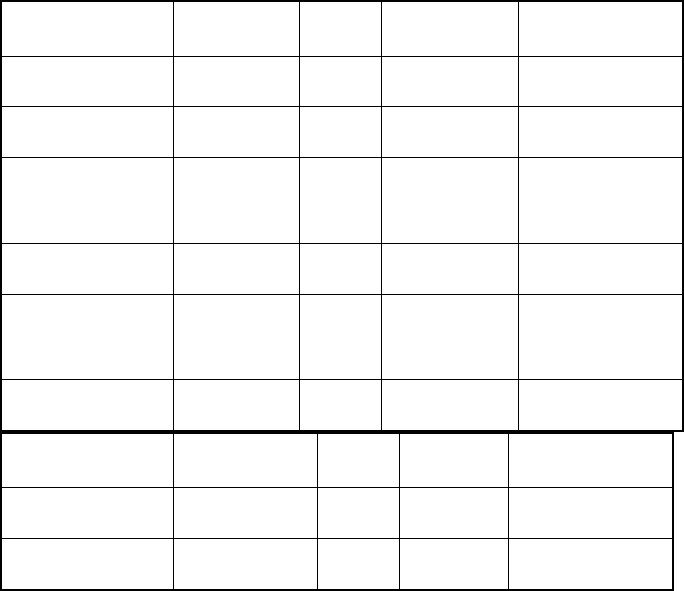
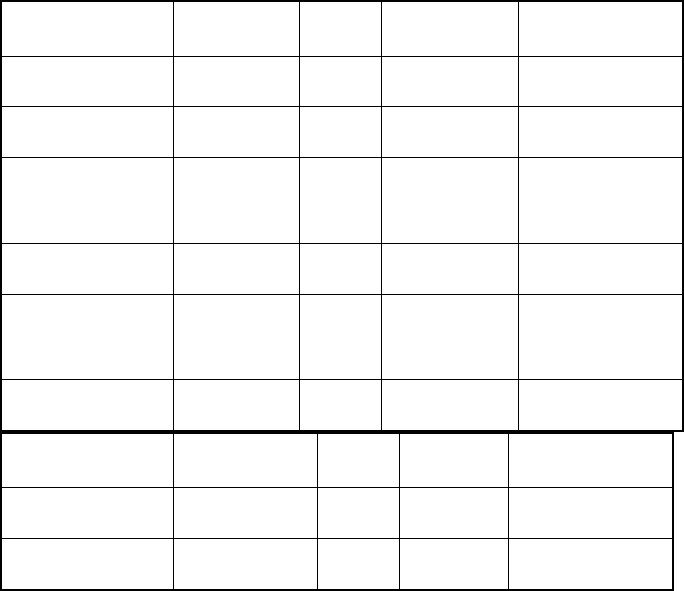
**DESCRIPTION**

EVENT VARCHAR2 20 NAME OF EVENTID VARCHAR2 10 PRIMARY KEY EVENT IDVENUE. VARCHAR2 20 LOCATION OFEVENTPLACE VARCHAR2 20 CITYQUALIFICATIONS VARCHAR2 20 ELIGIBILITYREQUIREDDATE NUMBER 10 DATE OF EVENT

**9. Table Name: COMPLOGIN : -**

**Field Name Data Type Size Constraints Description**

EMAIL VARCHAR2 25 Primary Key USER E-MAILPASSWORD VARCHAR2 10 USER PASSWORD



**10. Table Name: COMPSECURITY : -**

**FIELD NAME**

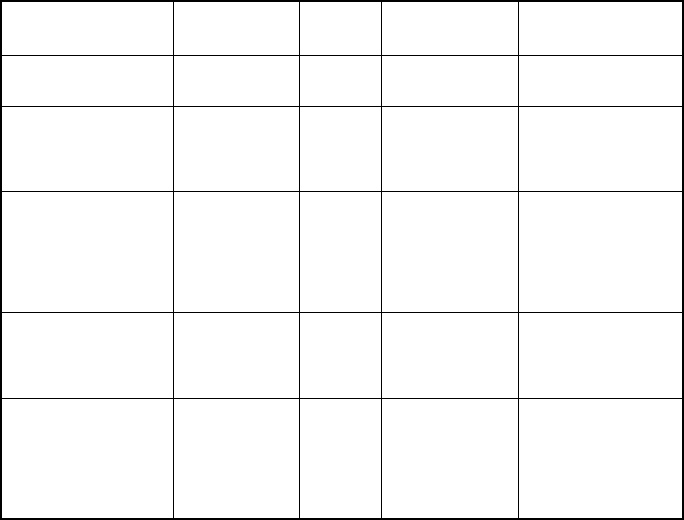
**DATATYPE**

**SIZE**

**CONSTRAINTS**

**DESCRIPTION**

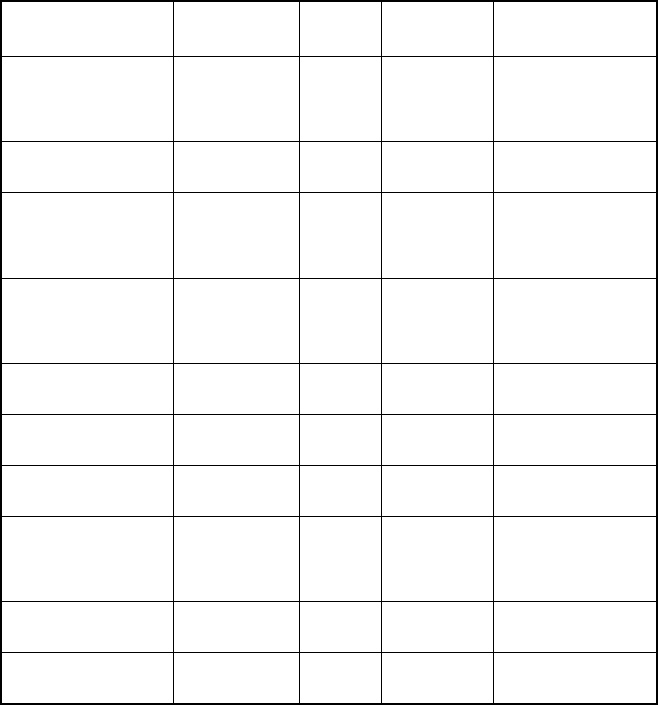
EMAIL VARCHAR2 20 PRIMARY KEY EMAILSQ1 VARCHAR2 50 SEQURITYQUESTION 1ANS1 VARCHAR2 20 ANSWER OFSEQURITYQUESTION 1SQ2 VARCHAR2 50 SEQURITYQUESTION 2ANS2 VARCHAR2 20 ANSWER OFSEQURITYQUESTION 2



**11. Table Name : COMPANY REGISTRATION : -**

**Field Name Data Type Size Constraints Description**

EMAIL VARCHAR2 35 Primary Key EMAIL OFCOMPANYPASSWORD VARCHAR2 20 PASSWORD NAME VARCHAR2 20 NAME OFCOMPANYSTATE VARCHAR2 20 STATE LOCATIONOF COMPANYCITY VARCHAR2 15 CITYCONTACT PERSON VARCHAR2 20 CONTACT PERSONP\_PIN NUMBER 10 PERMANENT PINDATE DATE 10 DATE OF JOBPOSTINGCONTACT NO. NUMBER 10 CONTACT NO.INDUSTRY VARCHAR2 20 INDUSTRY



**12. Table Name : COMPANY INFO : -**

**Field Name Data Type Size Constraints Description**

EMAIL VARCHAR2 25 Primary Key EMAIL OFCOMPANYINFO VARCHAR2 50 PROFILE OF THECOMPANY

**13. Table Name : APPLIEDJOBS : -**

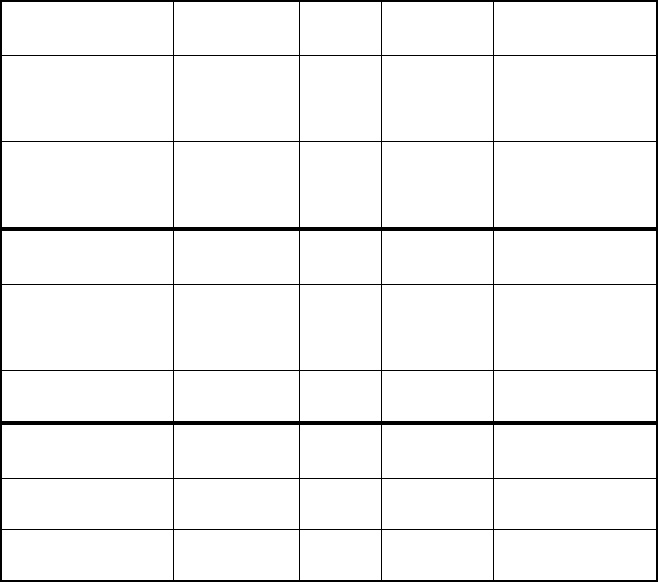
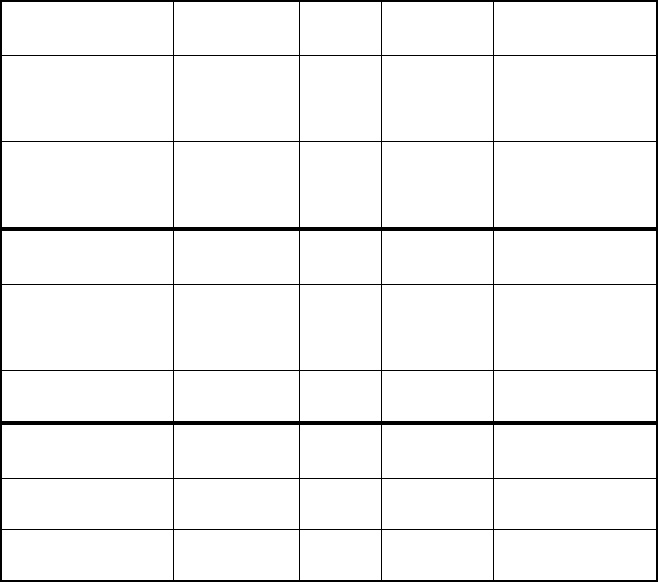
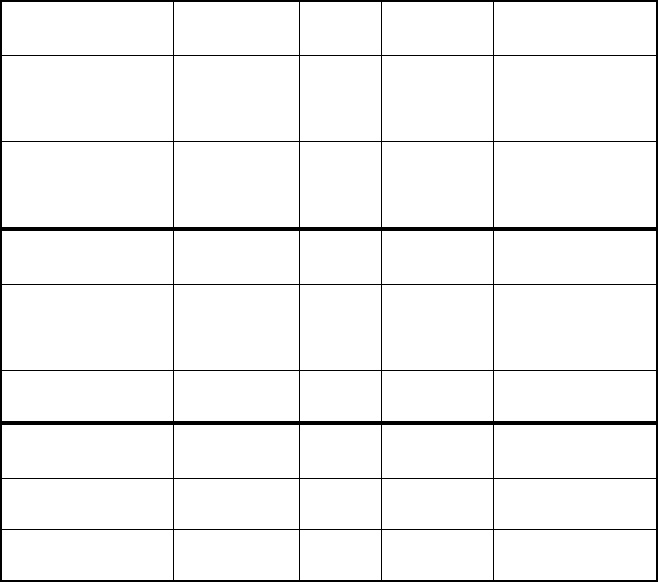
**Field Name Data Type Size Constraints Description**

EMAIL VARCHAR2 25 Primary Key EMAIL OFCOMPANYJOBID VARCHAR2 10 JOB-ID

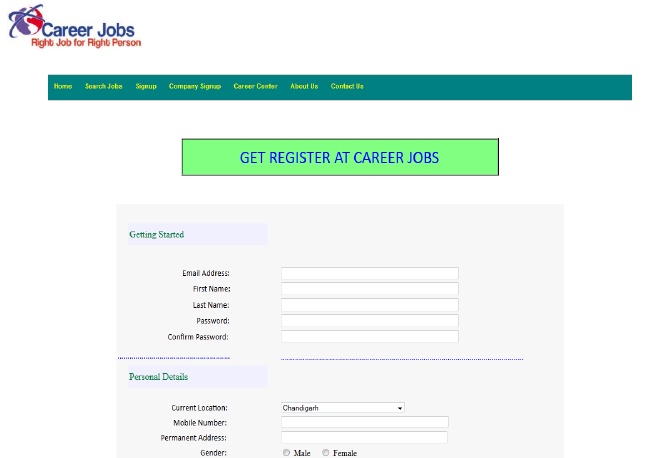
**14. Table Name : ADMINLOGIN : -**

**Field Name Data Type Size Constraints Description**

NAME VARCHAR2 25 Primary Key ADMIN NAMEPASSWORD VARCHAR2 20 ADMIN PASSWORD

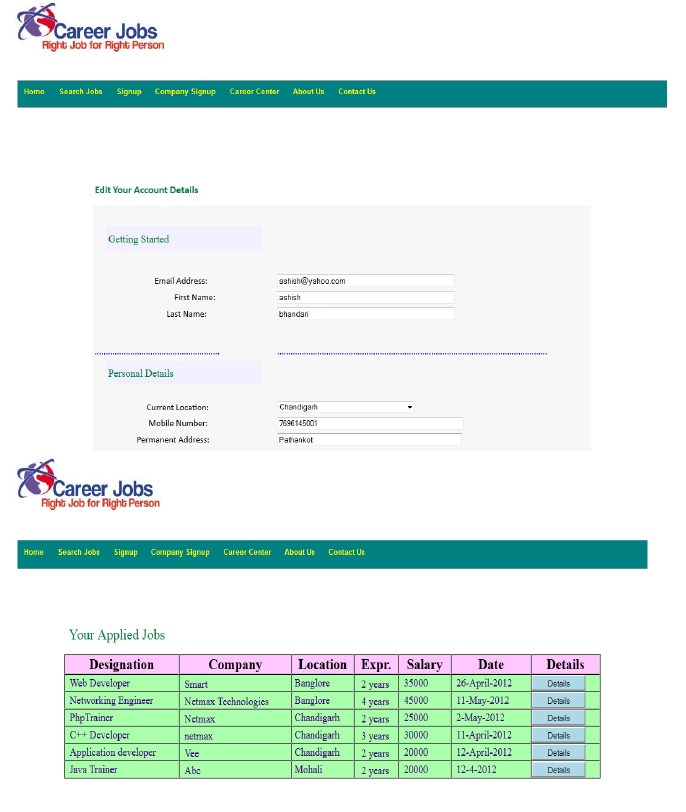
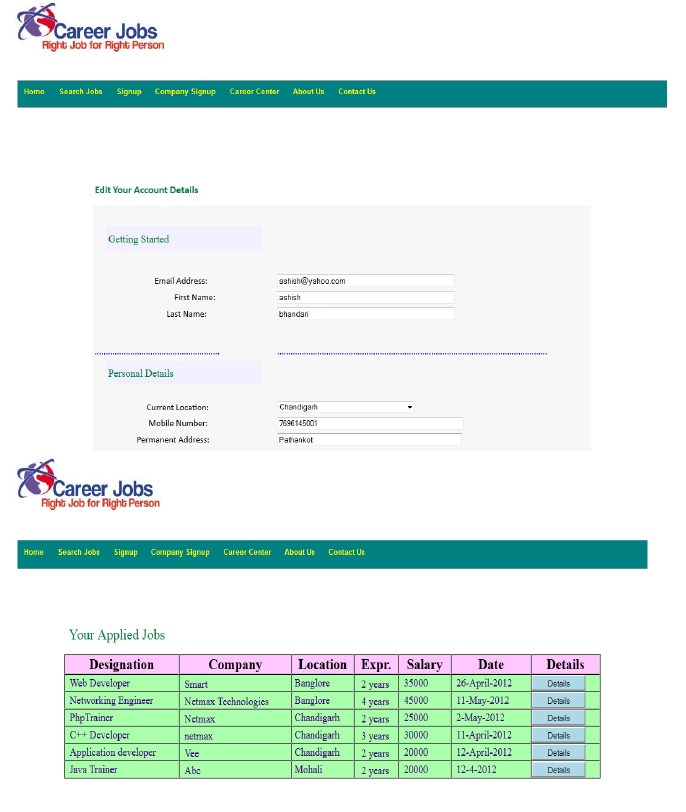


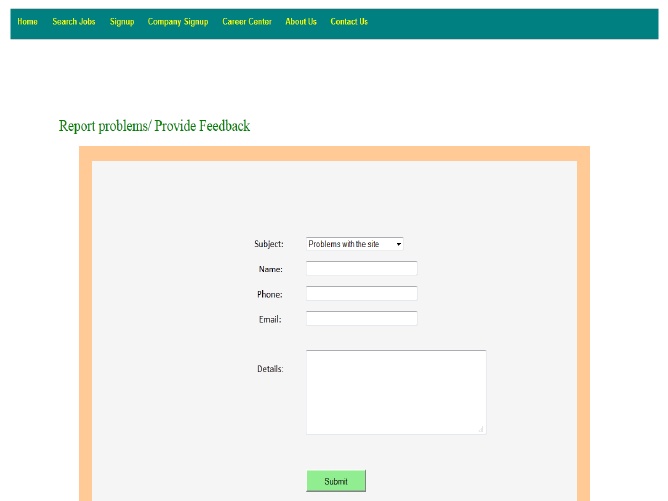
Input output Design:



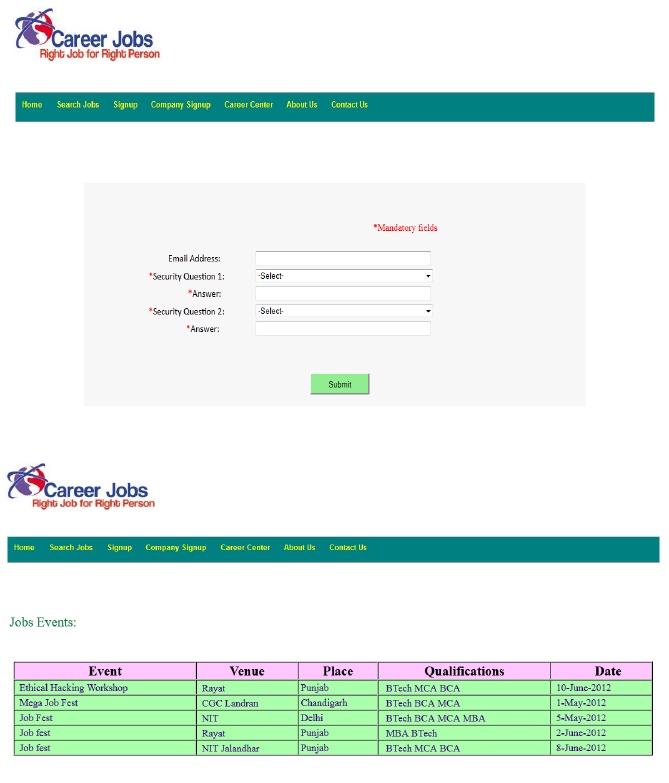
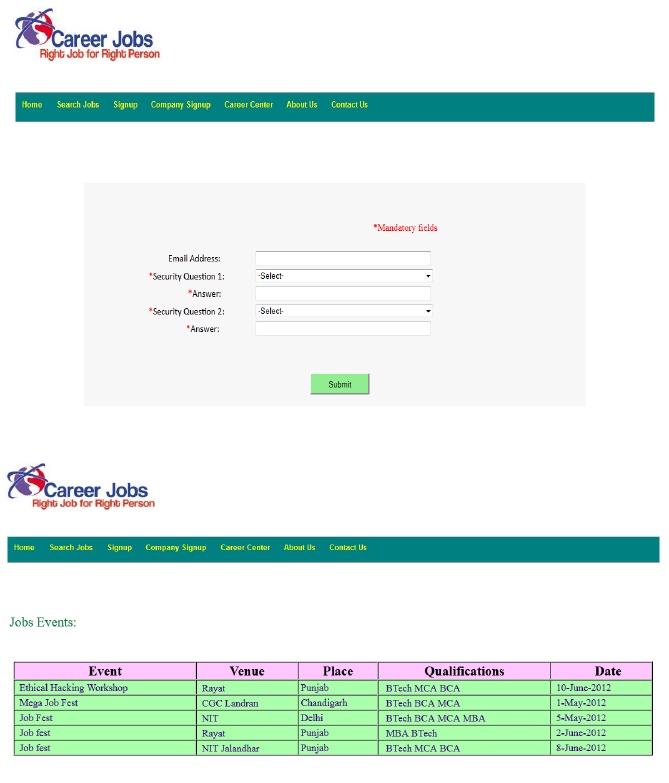












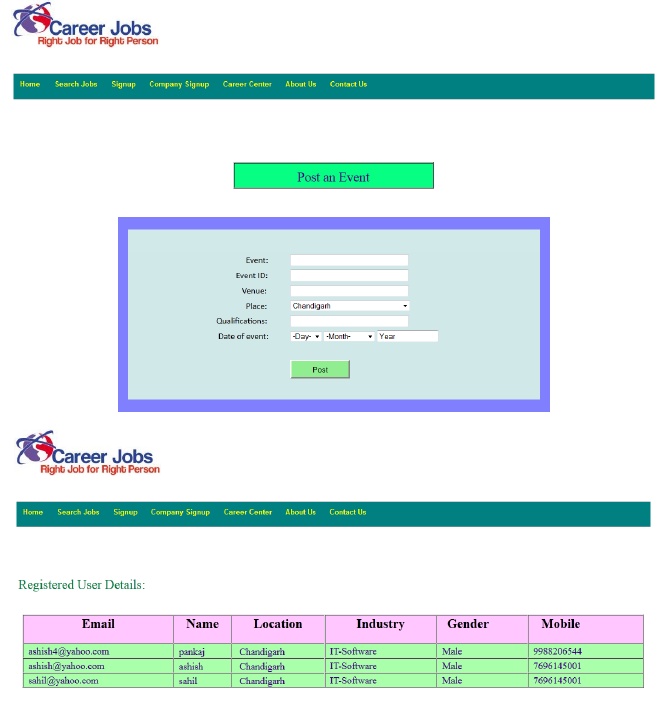
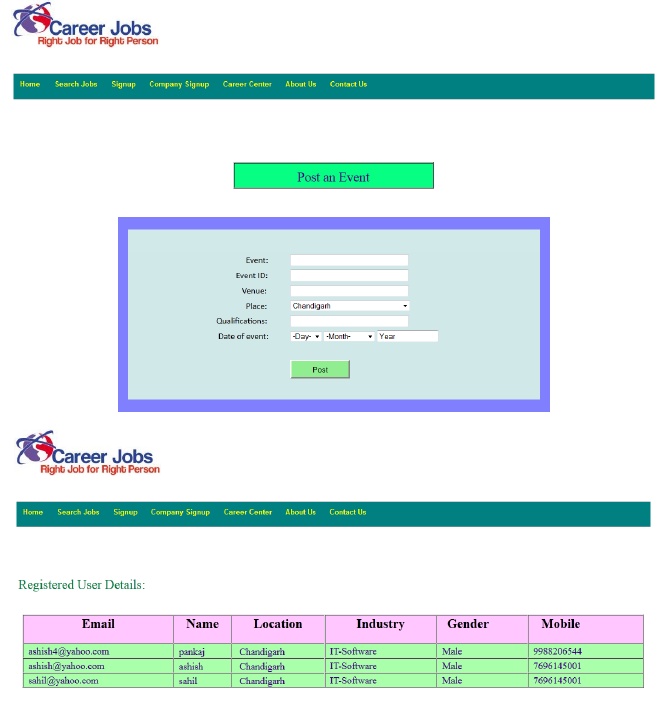






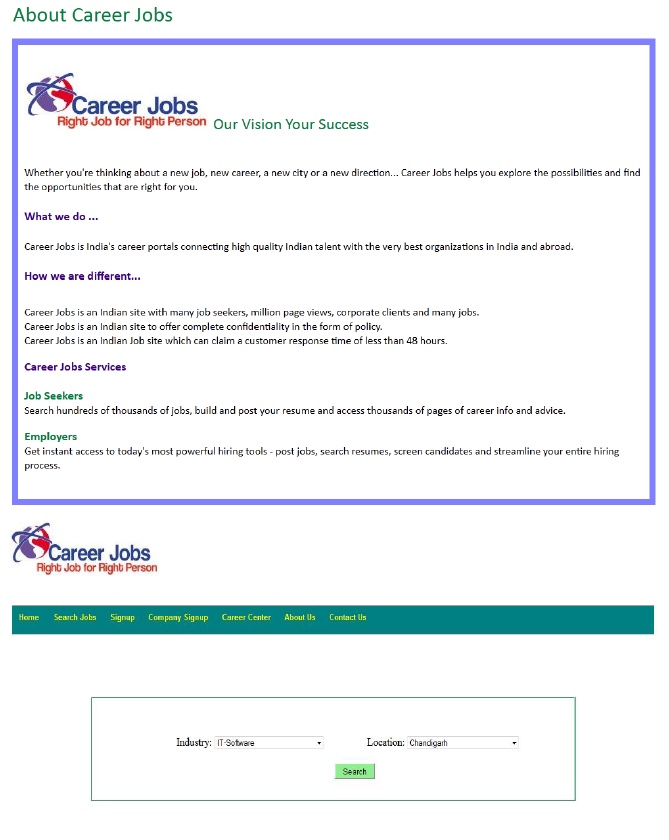
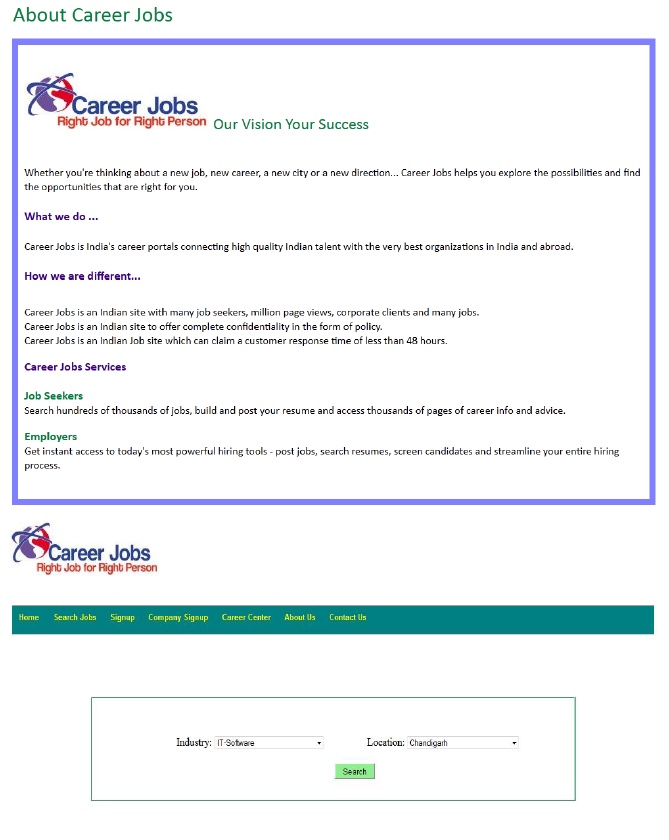














**CHAPTER 9CODE DESIGN**

Code design for the system follows the following pattern. The java programs for the accessing thedatabase server consists of functions that retrieve data and return that data in the required format.These java functions are put into classes. These classes are identified by the module which theyservice. The classes are all part of a package. This package is used in the JSP scripting to declareobjects of a particular class. Once the objects have been declared, the functions of that object can

be easily accessed by a normal ―

*objectName.functionName*

‖ kind of call to it. The function

performs the necessary tasks and then returns the data to the JSP script. The web server then processes these data and prepares an HTML file to be displayed to the user. This process isdepicted in the figure.

**Figure: - Code Design**

**DATABASE SERVER**

The JSP script creates theobjects of the java class filesas requiredJava functions do thedatabase handlingJSP file calls thefunctions of that object

This object embeddedin the HTML using JSPscripting can nowaccess all thefunctions of thatparticular java class.

**Class ObjectJSP file.**

Function A ( )Function B ( )Function C ( )

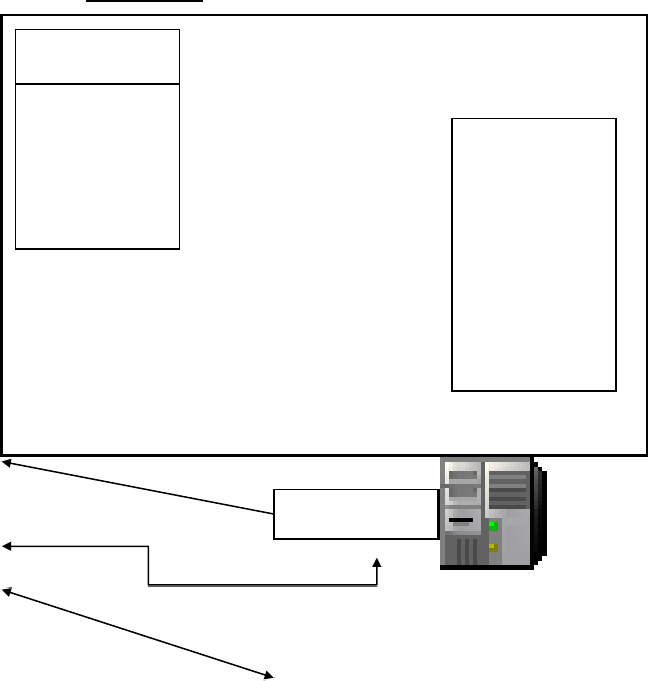
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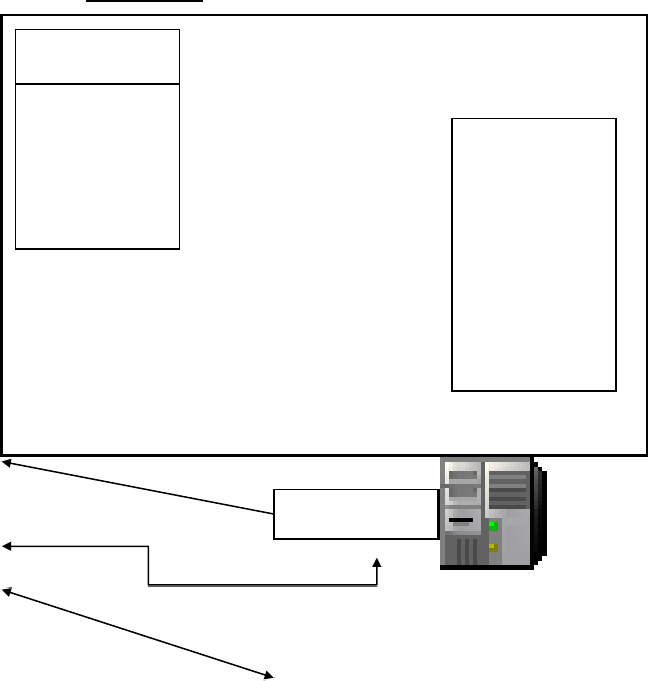
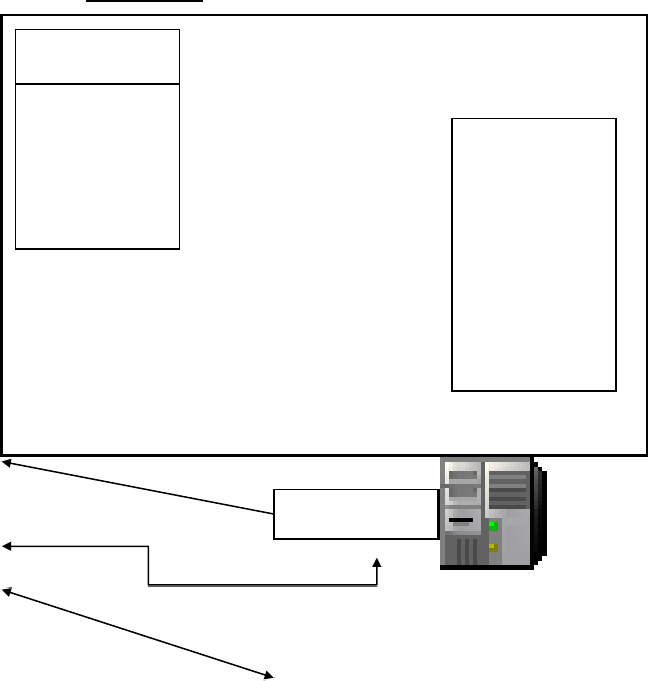
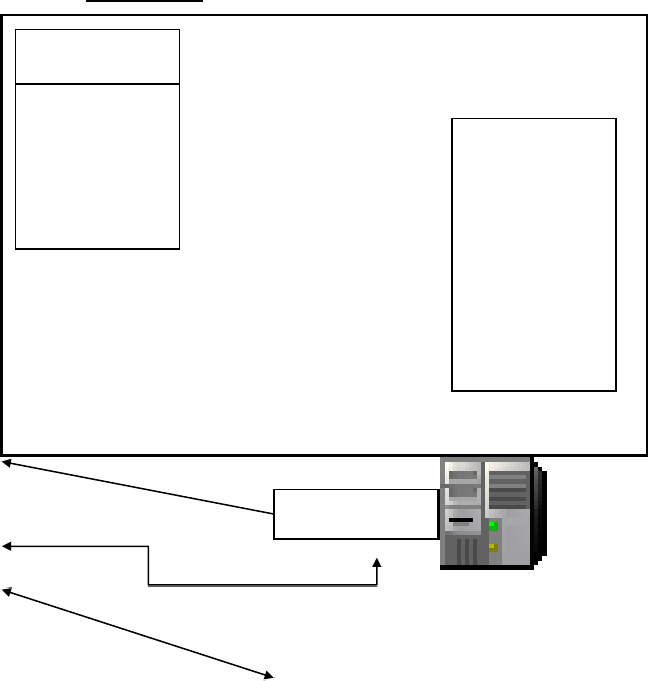
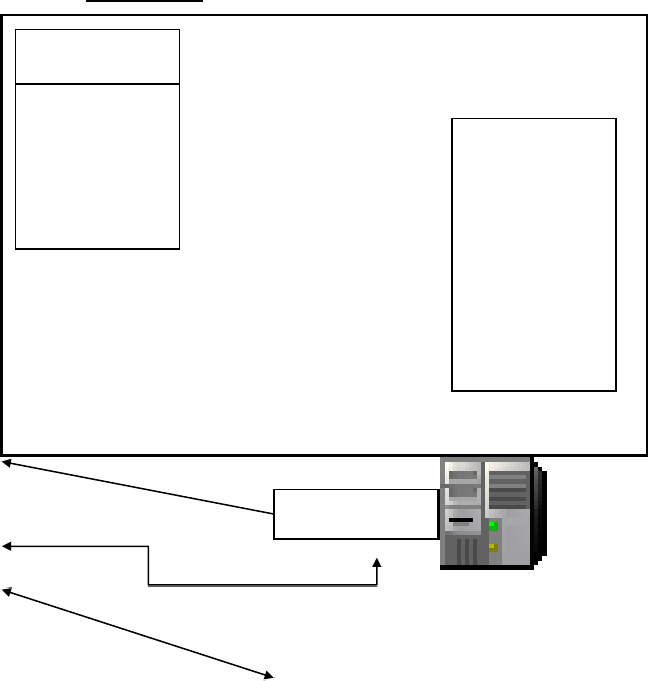
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Function n ( )

**Java class file**





Coding (Main)

Login Servlet: package project;import java.io.IOException;import java.io.PrintWriter;import java.sql.Connection;import java.sql.ResultSet;import java.sql.Statement;import javax.servlet.RequestDispatcher;import javax.servlet.ServletException;import javax.servlet.http.HttpServlet;import javax.servlet.http.HttpServletRequest;import javax.servlet.http.HttpServletResponse;import javax.servlet.http.HttpSession; public class Login extends HttpServlet{ protected void processRequest(HttpServletRequest request, HttpServletResponse response)throws ServletException, IOException{response.setContentType("text/html;charset=UTF-8");PrintWriter out = response.getWriter();String email=request.getParameter("email");String password=request.getParameter("pass");String getmail=null,getpass=null;int i=0;try{

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Connection con=Dbconnect.getConnect();Statement st=con.createStatement();String q="select \* from login";ResultSet rs=st.executeQuery(q);while(rs.next()){getmail=rs.getString("email");getpass=rs.getString("password");if(email.equals(getmail) && password.equals(getpass)){i=1; break;}}if(i==1){HttpSession ses=request.getSession();ses.setAttribute("email", email);RequestDispatcher rdp=request.getRequestDispatcher("Home.jsp");rdp.forward(request, response);}else{RequestDispatcher rdp=request.getRequestDispatcher("loginerror.jsp");rdp.forward(request, response);}out.println("<html>");out.println("<head>");

out.println("<title>Servlet Login</title>");out.println("</head>");out.println("<body>");out.println("<h1>Servlet Login at " + request.getContextPath() + "</h1>");out.println("</body>");out.println("</html>");}catch(Exception e){out.println("exception in register servlet "+e);}finally{out.close();}}

Database Connectivity File:

package project;import java.sql.Connection;import java.sql.DriverManager; public class Dbconnect{ public static Connection con=null; public static Connection getConnect(){try

{Class.forName("com.mysql.jdbc.Driver");con=DriverManager.getConnection("jdbc:mysql://localhost:3306/jobs","root","root");}catch(Exception e){System.out.println("EXCEPTION IN CONNECT :- "+e);}return con;}}

Job Post Servlet:

package project;import java.io.IOException;import java.io.PrintWriter;import java.sql.Connection;import java.sql.DriverManager;import java.sql.Statement;import javax.servlet.RequestDispatcher;import javax.servlet.ServletException;import javax.servlet.http.HttpServlet;import javax.servlet.http.HttpServletRequest;import javax.servlet.http.HttpServletResponse; public class jobpost extends HttpServlet{

protected void processRequest(HttpServletRequest request, HttpServletResponseresponse) throws ServletException, IOException{response.setContentType("text/html;charset=UTF-8");PrintWriter out = response.getWriter();String driver="com.mysql.jdbc.Driver";String url="jdbc:mysql://localhost:3306/";String database="jobs";String username="root";String pass="root";String profile=request.getParameter("profile");String id=request.getParameter("jobid");String email=request.getParameter("email");String company=request.getParameter("company");String place=request.getParameter("place");String experience=request.getParameter("experience");String salary=request.getParameter("salary");String day=request.getParameter("day");String month=request.getParameter("month");String year=request.getParameter("year");String industry=request.getParameter("industry");String details=request.getParameter("description");String date= day + "-" + month + "-" + year;String insertquery="INSERT INTO jobs.jobpost (profile, id, company, place,experience, salary, `date`, description, industry, email) VALUES ('"+profile+"', '"+id+"','"+company+"','"+place+"','"+experience+"','"+salary+"','"+date+"','"+details+"','"+industry+"','"+email+"')";try{Connection c=Dbconnect.getConnect();

Statement st=c.createStatement();st.executeUpdate(insertquery);RequestDispatcher rdp=request.getRequestDispatcher("sucjobpost.jsp");rdp.forward(request,response);out.println("<html>");out.println("<head>");out.println("<title>Servlet register</title>");out.println("</head>");out.println("<body>");out.println("<h1>Servlet register at " + request.getContextPath() + "</h1>");out.println("</body>");out.println("</html>");}catch(Exception e){out.println("Exception : " + e);}finally {out.close();}}}

Modify Account Servlet:

package project;import java.io.IOException;import java.io.PrintWriter;

import java.sql.Connection;import java.sql.DriverManager;import java.sql.Statement;import javax.servlet.RequestDispatcher;import javax.servlet.ServletException;import javax.servlet.http.HttpServlet;import javax.servlet.http.HttpServletRequest;import javax.servlet.http.HttpServletResponse;import javax.servlet.http.HttpSession; public class editaccount extends HttpServlet{ protected void processRequest(HttpServletRequest request, HttpServletResponseresponse) throws ServletException, IOException{response.setContentType("text/html;charset=UTF-8");PrintWriter out = response.getWriter();String driver="com.mysql.jdbc.Driver";String url="jdbc:mysql://localhost:3306/";String database="jobs";String username="root";String pass="root";String mail=request.getParameter("mail");String email=request.getParameter("email");String firstname=request.getParameter("firstname");String lastname=request.getParameter("lastname");String location=request.getParameter("location");String mobileno=request.getParameter("mobileno");String address=request.getParameter("address");String gender=request.getParameter("gender");

String industry=request.getParameter("industry");String function=request.getParameter("function");String skills=request.getParameter("skills");String modquery="update registeration set email='"+email+"',firstname='"+firstname+"',lastname='"+lastname+"',location='"+location+"',mobileno='"+mobileno+"',address='"+address+"',industry='"+industry+"',function='"+function+"',skills='"+skills+"' where email= '"+mail+"' ";String mod="update login set email='"+email+"' where email='"+mail+"'";try {/\*\* TODO output your page here. You may use following sample code.\*/Connection c=Dbconnect.getConnect();Statement st=c.createStatement();Statement st1=c.createStatement();st.executeUpdate(modquery);st1.executeUpdate(mod);HttpSession ses=request.getSession();ses.setAttribute("email", email);RequestDispatcher rdp=request.getRequestDispatcher("Home.jsp");rdp.forward(request, response);out.println("<html>");out.println("<head>");out.println("<title>Servlet register</title>");out.println("</head>");out.println("<body>");

out.println("email: " + mail + "<br/>");out.println("<h1>Servlet register at " + request.getContextPath() + "</h1>");out.println("</body>");out.println("</html>");}catch(Exception e){out.println("Exception : " + e);}finally {out.close();}}}

**CHAPTER 10**

**TESTING**

10.1 System Testing: -

Black box testing method was used for system testing. The black box testingusually demonstrates that software functions are operational; that the input is properlyaccepted and the output is correctly produced; and that integrity of external information(databases) is maintained.

**Why testing is done**

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Testing is the process of running a system with the intention of findingerrors.

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Testing enhances the integrity of a system by detecting deviations indesign and errors in the system.

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Testing aims at detecting error-prone areas. This helps in the prevention of errors in a system.

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Testing also add value to the product by confirming to the user requirements.

**Causes of Errors**

The most common causes of errors in a software system are:

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**Communication gap between the developer and the business decision**

**maker:**

Acommunication gap between the developer and the business decision maker is normallydue to subtle differences between them. The differences can be classified into five broad areas: Thought process, Background and Experience, Interest, Priorities,Language.

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

**Time provided to a developer to complete the project:**

A common source of errorsin projects comes from time constraints in delivering a product. To keep to theschedule, features can be cut. To keep the features, the schedule can be slipped. Failingto adjust the feature set or schedule when problems are discovered can lead to rushedwork and flawed systems.



**Over Commitment by the developer:**

High enthusiasm can lead to over commitment by the developer. In these situations, developers are usually unable to adhere todeadlines or quality due to lack of resources or required skills onthe team.

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**Insufficient testing and quality control:**

Insufficient testing is also a major source of breakdown of e-commerce systems during operations, as testing must be done duringall phases of development.

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**Inadequate requirements gathering:**

A short time to market results in developersstarting work on the Web site development without truly understanding the businessand technical requirements. Also, developers may create client-side scripts usinglanguage that may not work on some client browsers.

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**Keeping pace with the fast changing Technology:**

New technologies are constantlyintroduced. There may not be adequate time to develop expertise in the newtechnologies. This is a problem for two reasons. First, the technology may not be properly implemented. Second, the technology may not integrate well with the existingenvironment.

**Testing Principles**

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To discover as yet undiscovered errors.

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All tests should be tracea

ble to customer‘s requirement.

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Tests should be planned long before the testing actually begins.

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Testing should begin ―in the small‖ & progress towards ―testing in the large‖.



Exhaustive Testing is not possible.

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To be most effective training should be conducted by an Independent Third Party

**Testing Objectives**

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Testing is a process of executing a program with the intent of finding errors.

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A good test case is one that has a high probability of finding an as yet undiscoverederror.

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A successful test is one that uncovers an as yet undiscovered error.

**Kinds of Testing:**

**Black Box Testing- Not**

based on any knowledge of internal designs or code. Tests are based on requirements and functionality.

**White Box Testing-**

Based on the knowledge of the internal logic

of an application‘s code.

Tests are based on coverage of code statements, branches, paths and statements.

**Unit Testing-**

The most ‗micro‘ scale of testing; to test particular functions and code

modules. Typically done by the programmer and not by the testers, as it requires detailedknowledge of the internal program design and code. Not always easily done unless theapplication has a well-designed architecture with tight code; may require developing testdriver modules or test harnesses.

**Integration Testing-**

Testing of combined parts of an application to determine if they

function together correctly. The ‗parts‘ can be code modules, individual applications, client

and server applications on a network, etc. This type of testing is especially relevant toclient/ server and distributed systems.

**Functional Testing-**

Black-box type testing geared to functional requirements of an

application; testers should do this type of testing. This doesn‘t mean that the programmersshouldn‘t check that their code works before

releasing it.

**Regression Testing-**

Re-testing after fixes or modifications of the software or itsenvironment. It is difficult to determine how much re testing is needed, especially near theend of the development cycle. Automated testing tools can be especially useful for thistype of testing.

**Acceptance Testing-**

Final testing based on the specifications of the end user or customer or based on use by end-users/ customers over some limited period of time.

**User Acceptance Testing-**

Determining if software is satisfactory to an end user customer.

**Table 10.1:- Tests Conducted on the System: -**

**Testing Phase**

**Objectives**

UnitTesting

The various functions within each program and the program blocks aretested for proper working.

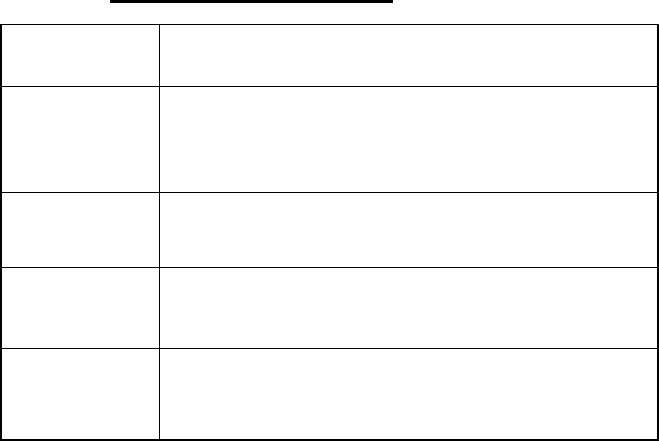
Module Testing

A module is composed of various programs related to that module.Integration Testing

Integration testing is done to test the functionality and interfacing between the modules.

Acceptance Testing

Acceptance testing is done after implementation to check if the systemruns successfully in the customer environment/site.



**CHAPTER 1**

**IMPLEMENTATION & MAINTAINENCE**

**11.1 Implementation:-**

Implementation uses the design document to produce code. Demonstration that the program satisfies its specifications validates the code. Typically, sample runs of the program demonstrating the behavior for expected data values and boundary values arerequired. Small programs are written using the model: -Write/Compile/ Test. As programs get more complicated, testing and debugging alone may not beenough to produce reliable code. Instead, we have to write programs in a manner that willhelp insure that errors are caught or avoided.

**Top-Down Implementation: -**

Top down implementation begins with the user-invoked module and workstoward the modules that do not call any other modules. The implementation may precededepth-first or breadth-first.

**Bottom-Up Implementation: -**

Implementation begins with modules that do not call any other modules andworks toward the main program. Test harness (see below) is used to test individualmodules. The main module constitutes the final test harness.

Stub Programming:

Stub programming is the implementation analogue of top-down and stepwise refinement. Itsupports incremental program development by allowing forerror and improvement. A stub program is a stripped-down, skeleton version of a final program. It doesn't implement

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details of the algorithm or fulfill all the job requirements. However, it does contain roughversions of all subprograms and their parameter lists. Furthermore, it can be compiled andrun. Extensive use of procedures and parameter are the difference between stub programsand prototypes. Quick and dirty prototypes should be improved--they should be rewritten.A stub program helps demonstrates that a program's structure is plausible. Its proceduresand functions are unsophisticated versions of their final forms, but they allow limited use of the entire program. In particular, it may work for a limited data set. Often the high-level procedures are ready to call lower-level code, even if the more detailed subprogramshaven't even been written. Such sections of code are commented out. The comment brackets can be moved, call-by-call, as the underlying procedures are actually written.

**Incremental Program Development: -**

As program become more complex, changes have a tendency to introduceunexpected effects. Incremental programming tries to isolate the effects of changes. We addnew features in preference to adding new functions, and add new function rather thanwriting new programs. The program implementation model becomes:------ Define types/compile/fix;------ Add load and dump functions/compile/test;------ Add first processing function/compile/test/fix;------ Add features/compile/test/fix;------ Add second processing function/compile/test/fix;------ Keep adding features/and compiling/and testing/ and fixing.

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**11.2 Maintenance: -**

Once the software is delivered and deployed, then maintenance phase starts.Software requires maintenance because there are some residual errors remaining in thesystem that must be removed as they discovered. Maintenance involves understanding theexisting software (code and related documents), understanding the effect of change, makingthe changes, testing the new changes, and retesting the old parts that were not changed. Thecomplexity of the maintenance task makes maintenance the most costly activity in the lifeof software product.It is believed that almost all software that is developed has residual errors, or bugs, in them.These errors need to be removed when discovered that leads to the software change. This iscalled Corrective Maintenance. Corrective maintenance means repairing, processing or performance failures or making alterations because of previously ill-defined problems.Software undergoes change frequently even without bugs because the software must beupgraded and enhanced to include more features and provide more services. This alsorequires modification of the software. The changed software changes the environment,

which in turn requires further change. This phenomenon is called the ―

*law of software*

evaluation”

. Maintenance due to this phenomenon is called

*adaptive maintenance*

.Adaptive maintenance means changing the program function. Perfect maintenance means

enhancing the performance or modifying the programs according to the user‘s additional or

changing needs. The keys to reduce the need for maintenance are:1.

More accurately defining the

user‘s requirement during system development.

2.

Preparation of system documentation in a better way.3.

Using more effective ways for designing processing logic and communicating it to project team members.4.

Making better use of existing tools and techniques.5.

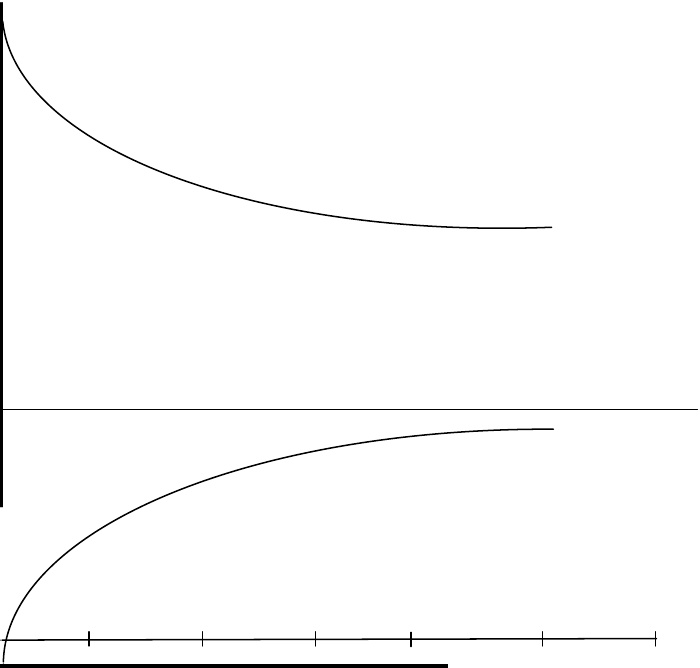
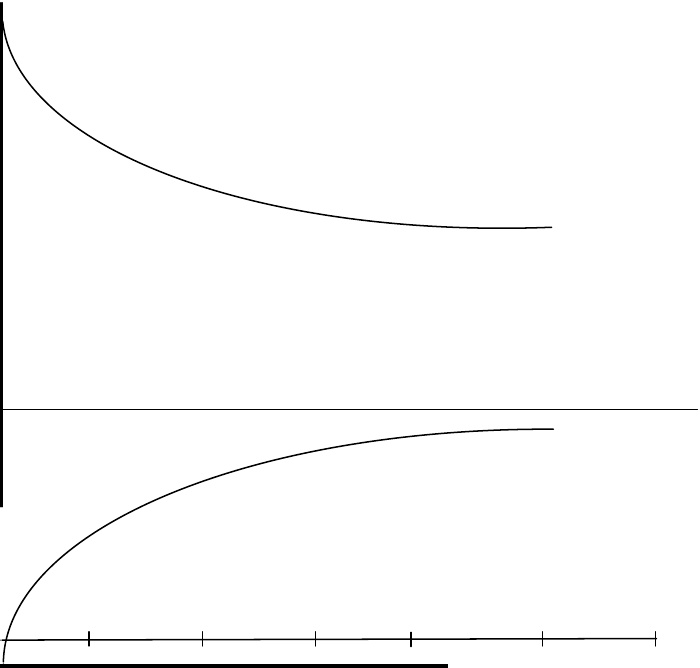
Managing the system engineering process effectively.

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**11.3 COST ESTIMATION OF THE PROJECT: -**

The objective of the cost estimation is to enable the client or developer to perform a cost-benefit analysis and for project monitoring and control. When the product isdelivered, the cost can be accurately determined, as all the data about the project and theresource spent can be fully known by then. The obtainable accuracy of the estimates as itvaries with the different phases is shown in below figure: -

XFeasibility Requirement System Detailed Coding and AcceptedAnalysis Design Design Testing Software



(Figure

–

Accuracy of cost estimation)(Figure

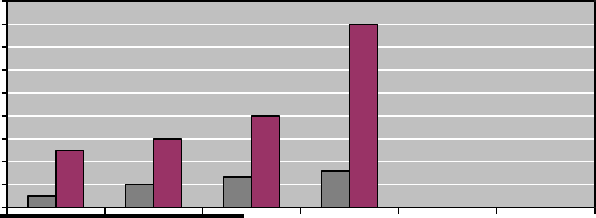
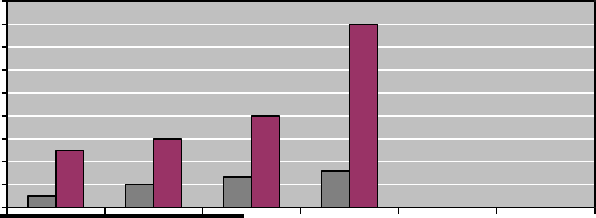
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Graph of Accuracy of Cost Estimation)

**Cost Of Correcting Errors: -**

According to the established S/W Engineering standard of estimating thecost of correcting errors the phase wise distribution of occurrences of errors is as given below: -Requirement Analysis 20%Design 30%Coding 50%The cost of correcting errors of different phases is not the same and depends on when theerror is detected and corrected.One can perform cost estimation at any point in the software life cycle. As thecost of the project depends on the nature and characteristics of the project, at any point, theaccuracy of the estimate will depend on the amount of reliable information we have aboutthe final product. The figure depicted below shows the accuracy of the cost estimation.

**00.511.522.533.544.5FeasibilityReq. Ana.Sys. Des.Det. Des.Code & T.Accep. S/w**



On Size estimation of Schedule and Cost of the Project: this approach impliesthat size is the primary factor for cost; other factors have lesser effect. Here we will discussone such model called the Constructive Cost Model (COCOMO) developed by Boehm.This model also estimates the total effort in terms of person-months of the technical projectstaff. The basic steps of this model are as follows: -

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Obtain the initial estimate of the development effort from the estimate of thousands of delivered lines of source code (KDLOC).



Determine a set of multiplying factors from different attributes of the project.



Adjust the effort estimate by multiplying the initial estimate with all themultiplying factors.The initial estimate also called nominal estimate is determined by an equation of the form used in the static single-variable models, using KDLOC as the measure of size. Todetermine the initial effort Ei in person-months the equation used is of the typeEi = a\*(KDLOC)

b

In COCOMO model the values of constants a and b are different with differenttype of projects. As our project is Organic type the values of a and b are 3.2 and 1.05respectively. The total thousand delivered code (KDLOC) of our system has been estimatedas around 2.In order to determine the multiplying factors commonly known as cost driver attributes we have taken rating of these attributes according to our requirements. Fromthese, the effort adjustment factor (EAF) of our project has been estimated as 1.16. Now the final efforts estimate, E, of our project is obtained by multiplying the initialestimate by the EAF.i.e., E = EAF\*EiThe project duration is estimated for an Organic project by the formulaD = 2.5 \* E

0.38

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