

# **Placement Management System**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**Ahmedabad 382481**

**May 2014**

# **Placement Management System**

## **Major Project**

Submitted in partial fulfillment of the requirements

For the degree of

**Bachelors of Technology in Information Technology**

By

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## **CERTIFICATE**

This is to certify that the Major Project entitled Placement Management System submitted by Mehul Ranavasiya (10bit047) towards the partial fulfillment of the requirements for the degree of Bachelors of Technology in Information Technology of Nirma University of Science and Technology, Ahmedabad is the record of work carried out by them under my supervision and guidance. In my opinion, the submitted work has reached a level required for being accepted for examination. The results embodied in this minor project, to the best of my knowledge, haven't been submitted to any other university or institution for award of any degree or diploma.

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This is to certify that the Major Project entitled Placement Management System submitted by Devashish Vaghela (10BCE095) towards the partial fulfillment of the requirements for the degree of Bachelors of Technology in Computer Engineering of Nirma University of Science and Technology, Ahmedabad is the record of work carried out by them under my supervision and guidance. In my opinion, the submitted work has reached a level required for being accepted for examination. The results embodied in this minor project, to the best of my knowledge, haven't been submitted to any other university or institution for award of any degree or diploma.

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## ACKNOWLEDGEMENT

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We offer our special thanks to our Project guide **Dr. Madhuri Bhavsar**, Sr Associate Professor & Section-Head IT, Department of Computer Science & Engineering, Institute of Technology, Nirma University, Ahmedabad without whose help and support throughout this project would not have been this success.

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## **ABSTRACT**

The project named "Placement Management System", a student/company information system is a web based system. The project is developed on the basis of "III Cell" being presently used in the University for storing and retrieving the information of students and companies who are registered in III Cell. The III Cell maintains a large database of students wherein all the information of student including the personal records and the academic performance in terms of the SPI and PPI is stored and company information including profile of company, eligibility criteria and facilities it provide etc. The software retrieves this data and displays as per the user requirement.

The Placement Management System is developed as an attempt to take a record of company and students by restricting such a large database to that of a particular class of students or company. The System provides the facility of viewing both the personal and academic information of the student and company it can also search for eligible students and company and also insertion and deletion of records by the administrator. Eligible students will receive an email including the details of the company and also they will receive a sms on their registered mobile number in which the date-time and location will be provided.

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## **INTRODUCTION**

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### **1.1 ABOUT THE ORAGANIZATION**

BISAG, formerly known as Remote Sensing and Communication Centre (RESECO), has been renamed after the great Indian Mathematician of the 12th century, "Bhaskaracharya"

BISAG is a State level nodal agency to facilitate the use of spatial and geo-spatial technologies for the planning and developmental activities pertaining to Agriculture, Land and Water Resource Management, Wasteland/Watershed Development, Forestry, Disaster Management, Infrastructure and Education.

The Institute started its operations in April 1997 and was renamed as " Bhaskaracharya Institute for Space Applications and Geo-informatics " in December 2003.

### **1.1.1 Introduction of the organization.**

BISAG provides specialized services and solutions in implementing map-based GeoSpatial Information Systems. BISAG undertakes all services for the entire process of implementing an enterprise level GIS system. These services include GIS database design and development, map creation/updation and finishing, data migration/conversion and format translation, software development and customisation, systems integration and technical consulting. BISAG also provides complete GIS solutions, which bundle hardware, and software with GIS systems development services.

BISAG provides a full complement of specialized services in implementing end-to-end GeoSpatial Technology applications in the areas of Ground Control Survey, Digital Photogrammetry, Digital Terrain / Elevation Models and Contouring, Vector Data Capture, Digital Orthophotography and Ortho-mosaicing, Image Analysis and Interpretation for Thematic Mapping, Cadastral / Parcel Mapping, GIS Database Design and Development, Map Creation / Updation and Finishing, Data Migration/Conversion and Format Translation, Software Development and Customization, Geodatabase Modeling as well as high-end Domain & GeoSpatial Technical Consulting and Support.

BISAG has strengthened its range of high-end GeoSpatial services in large-scale mapping by using advanced Photogrammetry and D-GPS technologies to cover elevation modelling, surface modelling and true ortho-photo generation.

BISAG offers comprehensive GIS/PHOTOGRAMMETRIC solutions over large geographical areas. These include solutions and services in the areas of mapping, cartography, imaging, photogrammetry and utility / environment resource management. BISAG provides solutions based on Remote Sensing, using Multi-spectral data, for specific applications like agricultural crop monitoring, watershed management, forest fire mapping etc.

BISAG also offers leading-edge Mapping - GIS solutions for disaster management and specialized needs of Public Safety agencies like police, fire and ambulance services. Additionally, a full complement of e-governance solutions is also offered, to address varying GIS and MIS needs of governments and municipal corporations.

## **1.2 THE SYSTEM**

### **1.2.1 Overview**

This project is aimed at developing an web application for the Training and Placement Department of the College. The system is a web application that can be accessed throughout the organization with proper login provided. This system can be used as a web application for the Training and Placement Officers (TPO) of the college to manage the student information with regard to placement. Students logging should be able to upload their information in the form of a CV. The key feature of this project is that it is a onetime registration. Our project provides the facility of maintaining the details of the students. It also provides a requested list of candidates to recruit the students based on given query. Administrator logging in may also search any information put up by the students. This project will aid colleges to practice full IT deployment. This will also help in fast access procedures in placement related activities.

### **1.2.2 ABOUT PRESENT SYSTEM**

In Various colleges, training and placement officers have to manage the students profile and documents of students for their training and placement manually.

Placement Officer have to collect the information of various companies who want to recruit students and notify students time to time about them.

Placement Officer have to arrange profiles of students according to various streams and notify them according to company requirements.

If any modifications or updates are required in the profile of any student, it has to searched and to be done it manually.



### **1.2.3 ABOUT THE PROJECT**

This project is to facilitate students in college, company to register and communicate with Placement Office. The users can access easily to this and the data can be retrieved easily in no time. In the main page there are options for a new register, a registered student to directly login using username and password, submit resume. In the student registration form, we can give personal details, educational qualifications, and professional skills and upload resume. The job details of the placed students will be provided by the administrator. The administrator plays an important role in our project. They provide approval of student registration and updating. In this project we create a search engine for administrator, who can search everything about the student and company.

#### **1.2.4 OBJECTIVES OF THE PROJECT**

Computers and information technology has a major influence on the society and the society is becoming more and more dependent on technology. Going on is an era of simplifying almost all complicated works using computers. The last few years have witnessed a tremendous increase in the capabilities and use of computers. Manual processing makes the process slow and other problems such as inconsistency and ambiguity on operations. The proposed system intends user-friendly operations which may resolve ambiguity. By considering all this factors, the applications produced, which performs the social service simply and effectively.

### **1.2.5 SCOPE OF THE PROJECT**

Our project has a big scope to do. We can store information of all the students. CV's are categorized according to various streams. Various companies can access the information. Students can maintain their information and can update it. Notifications are sent to students about the companies. Students can access previous information about placement.

### **1.3 INTRODUCTION TO THE PROGRAMMING ENVIRONMENT**

The project is developed core java and MySQL.

Java is a programming language originally developed by Sun Microsystems and released in 1995. James Gosling, Patrick Naughton, Chris Warth, Ed Frank and Mike Sheridan developed Java at Sun Microsystems, Inc. in 1991. This Language was initially called "Oak" but was renamed "Java" in 1995.

The language derives much of its syntax from C and C++ but has a simpler object model and fewer low-level facilities. From C, Java derives its syntax. Many of Java's object oriented features were influenced by C++. The major feature of Java is that it is platform independent. Java applications are typically compiled to byte code that can run on any Java virtual machine(JVM) regardless of computer architecture.

#### **Java Features**

1. Platform Independent : The Write-Once-Run-Anywhere ideal has not been achieved (tuning for different platforms usually required), but closer than with other languages.
2. Object Oriented : Java is pure object oriented throughout i.e. there is no coding outside of class definitions, including main(). There is an extensive class library available in the core language packages.
3. Compiler/Interpreter Combo: Code is compiled to byte codes that are interpreted by a Java virtual machines (JVM). This provides portability to any machine for which a virtual machine has been written. The two steps of compilation and interpretation allow for extensive code checking and improved security.
4. Robust: Exception handling built-in, strong type checking (that is, all data must be declared an explicit type), local variables must be initialized.

5. Several Dangerous Features of C and C++ Eliminated: No memory pointers are used. No pre-processors defined. Array index limit checking.

6. Security:

- No memory pointers.
- Programs run inside the virtual machine sandbox.
- Array index limit checking

7. Dynamic Binding: The linking of data and methods to where they are located, is done at run-time. New classes can be loaded while a program is running. Linking is done on the fly. Even if libraries are recompiled, there is no need to recompile code that uses classes in those libraries. This differs from C++, which uses static binding. This can result in fragile classes for cases where linked code is changed and memory pointers then point to the wrong addresses.

8. Good Performance: Interpretation of byte codes slowed performance in early versions, but advanced virtual machines with adaptive and just-in-time compilation and other techniques now typically provide performance up to 50% to 100% the speed of C++ programs.

9. Threading: Light weight processes, called threads, can easily be spun off to perform multiprocessing. We can take advantage of multiprocessors where available. Great for multimedia displays.

10. Built-in Networking: Java was designed with networking in mind and comes with many classes to develop sophisticated Internet communications.

Features such as eliminating memory pointers and by checking array limits greatly help to remove program bugs. These and the other features can lead to a big speedup in program development compared to C/C++ programming.

MySQL :

MySQL is the world's most popular open source database software, with over 100 million copies of its software downloaded or distributed throughout its history. With its superior speed, reliability, and ease of use, MySQL has become the preferred choice for Web, Web 2.0, SaaS, ISV, Telecom companies and forward-thinking corporate IT Managers because it eliminates the major problems associated with downtime, maintenance and administration for modern, online applications.

Many of the world's largest and fastest-growing organizations use MySQL to save time and money powering their high-volume Web sites, critical business systems, and packaged software — including industry leaders such as Yahoo!, Alcatel-Lucent, Google, Nokia, YouTube, Wikipedia, and Booking.com.

The flagship MySQL offering is MySQL Enterprise, a comprehensive set of production-tested software, proactive monitoring tools, and premium support services available in an affordable annual subscription.

MySQL is a key part of LAMP (Linux, Apache, MySQL, PHP / Perl / Python), the fast-growing open source enterprise software stack. More and more companies are using LAMP as an alternative to expensive proprietary software stacks because of its lower cost and freedom from platform lock-in.

MySQL was originally founded and developed in Sweden by two Swedes and a Finn: David Axmark, Allan Larsson and Michael "Monty" Widenius, who had worked together since the 1980's. More historical information on MySQL is available on Wikipedia.

#### PhpMyAdmin:

phpMyAdmin is a free software tool written in PHP, intended to handle the administration of MySQL over the Web. phpMyAdmin supports a wide range of operations on MySQL, MariaDB and Drizzle. Frequently used operations (managing databases, tables, columns, relations, indexes, users, permissions, etc) can be performed via the user interface, while you still have the ability to directly execute any SQL statement.

phpMyAdmin comes with a wide range of documentation and users are welcome to update our wiki pages to share ideas and howtos for various operations. The phpMyAdmin team will try to help you if you face any problem; you can use a variety of support channels to get help.

phpMyAdmin is also very deeply documented in a book written by one of the developers – Mastering phpMyAdmin for Effective MySQL Management, which is available in English and Spanish.

To ease usage to a wide range of people, phpMyAdmin is being translated into 72 languages and supports both LTR and RTL languages.

phpMyAdmin has won several awards. Among others, it was chosen as the best PHP application in various awards and has won every year the SourceForge.net Community Choice Awards as "Best Tool or Utility for SysAdmins".

phpMyAdmin is a fifteen-year-old project with a stable and flexible code base; you can find out more about the project and its history. When the project turned 15, we published a celebration page.

#### Features

- Intuitive web interface
- Support for most MySQL features: browse and drop databases, tables, views, fields and indexes create, copy, drop, rename and alter databases, tables, fields and indexes maintenance server, databases and tables, with proposals on server configuration execute, edit and bookmark any SQL-statement, even batch-queries manage MySQL users and privileges manage stored procedures and triggers
- Import data from CSV and SQL Export data to various formats: CSV, SQL, XML, PDF, ISO/IEC 26300 - OpenDocument Text and Spreadsheet, Word, LATEX and others
- Administering multiple servers



- Creating PDF graphics of your database layout
- Creating complex queries using Query-by-example (QBE)
- Searching globally in a database or a subset of it
- Transforming stored data into any format using a set of predefined functions, like displaying BLOB-data as image or download-link
- And much more...

## SYSTEM ANALYSIS

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### 2.1 FEASIBILITY STUDY

Feasibility Study is a preliminary study undertaken to determine and document a project's viability. The term feasibility study is also used to refer to the resulting document. These results of this study are used to make a decision whether to proceed with the project, or table it. If it indeed leads to a project being approved, it will — before the real work of the proposed project starts — be used to ascertain the likelihood of the project's success. It is an analysis of possible alternative solutions to a problem and a recommendation on the best alternative.

It, for example, can decide whether an order processing be carried out by a new system more efficiently than the previous one.

### **2.1.1 Operational feasibility**

It is to find out whether the current work practices and procedures support a new system.

Also social factors i.e. how the organizational changes will affect the working lives of those affected by the system

### **2.1.2 Technical feasibility**

This involves questions such as whether the technology needed for the system exists, how difficult it will be to build, and whether the firm has enough experience using that technology. The assessment is based on an outline design of system requirements in terms of Input, Processes, Output, Fields, Programs, and Procedures. This can be qualified in terms of volumes of data, trends, frequency of updating in order to give an introduction to the technical system. The application is the fact that it has been developed on Windows XP platform and a high configuration of 1GB RAM on Intel Pentium dual core processor. This is technically feasible

### **2.1.3 Financial and Economic feasibility**

Establishing the cost-effectiveness of the proposed system i.e. if the benefits do not outweigh the costs then it is not worth going ahead.

In the fast paced world today there is a great need of online social networking facilities. Thus the benefits of this project in the current scenario make it economically feasible

### **2.1.4 Handling Infeasible Projects**

We did not face any infeasibility during this project because we used Netbeans IDE 7.4 to build this project. We installed it in laptop easily because it is available free of cost. Whenever we got errors or difficulties in project, our project guide helped and provided the way to proceed. We completed project before deadline successfully.

## **2.2 REQUIRMENT ANALYSIS**

We are overcoming the difficulty of student details which were manual in the current system and here we generate detailed information about the students which will save our time to inform each and every batch and section and student profile is maintained.

### **2.2.1 Functional Requirements**

This section describes the functional requirements of the system for those requirements which are expressed in the natural language style. A faculty member should be able to login to the system through the first page of the application, and mention his required roll number and he should get the details of the student with that roll number. An administrator can login into his account and he will update the student information.

### **2.2.2 Non Functional Requirements**

#### Usability

This section includes all of those requirements that effect usability.

- We get the response within seconds.
- The software must have a simple, user-friendly interface so customers can save time and confusion.

#### Reliability

- The system is more reliable because of the qualities that are inherited from the chosen platform java. The code built by using java is more reliable.

#### Supportability

- The system is designed to be the cross platform supportable. The system is supported on a wide range of hardware and any software platform which is having JVM built into the system. This application is being developed using J2EE; hence it is extremely portable.

#### Implementation

- The system is implemented in web environment. The apache tomcat is used as the web server and windows Xp professional is used as the platform.

#### Interface

- The user interface is based on the web browser. The application is developed using JSP and HTML along with DHTML.
- The Interface design is aimed at a flexible front-end communication to provide the user with clear information in navigating a user-friendly interface is planned.

### **2.2.3 Performance Requirements**

- The completely separate business logic at server side from the student interface ensures good performance.
- The system exhibits high performance because it is well optimized. The business logic is clearly separate from the UI.
- We get the response within seconds.

### **2.2.4 Hardware & Software requirements**

Hardware : Processor Intel dual core and above

Operating System : Windows 7, Windows 8

Internet Connection : Existing telephone lines, Data card.

Browser: Google chrome latest version, IExplorer 10;

Database : MY SQL .

Performance : The turn-around time of the project will be medium.

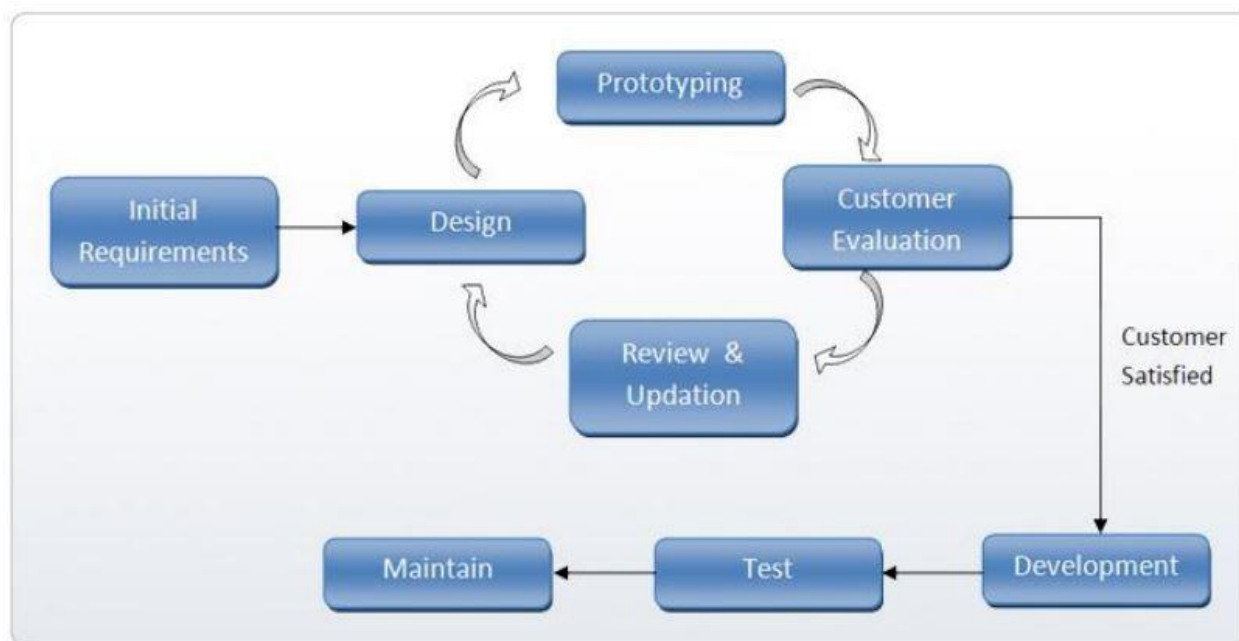
Software :

- MY SQL: It is a relational database management system. As a database it's a software product whose primary function is to store & retrieve data as requested by other software applications, be it those on the same computer or those running on another computer across a network (including the internet).
- J2EE 6: Jsp or Java Server page is a server-side technology; Java Server Pages are an extension to the Java servlet technology that

was developed by Sun. JSPs have dynamic scripting capability that works in tandem with HTML code. MVC is latest architecture we used in our project for better coding and debugging. Model is our database View is jsp and controller is servlet i.e. bean.

- Netbeans 7.4: NetBeans is an integrated development environment (IDE) for developing primarily with Java, but also with other languages, in particular PHP, C/C++, and HTML5.[3] It is also an application platform framework for Java desktop applications and others. The NetBeans IDE is written in Java and can run on Windows, OS X, Linux, Solaris and other platforms supporting a compatible JVM.

### 2.2.5 Prototype Model





### 3.1 Entity Relationship Diagram

An Entity Relationship Diagram (ERD) is a graphical tool to express the overall structure of a database. It is based on a perception of a real world which consists of a set of basic objects.

- An entity is a person, place, thing or event of interest to the organization and about which data are captured, stored or processed.
- The attributes are various kinds of data that describes an entity.
- An association of several entities in an Entity-Relationship model is called relationship.

An ERD consists of the following major components:

Rectangles:



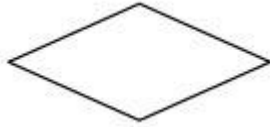
Used for representing entity types

Ellipses :



Used for representing attributes

Diamond :



Used for representing relationship types

Lines : 

Used for linking attributes to entity types

### **3.1.1 ER Diagram for the web application**



## **3.2 Database Design & Normalization**









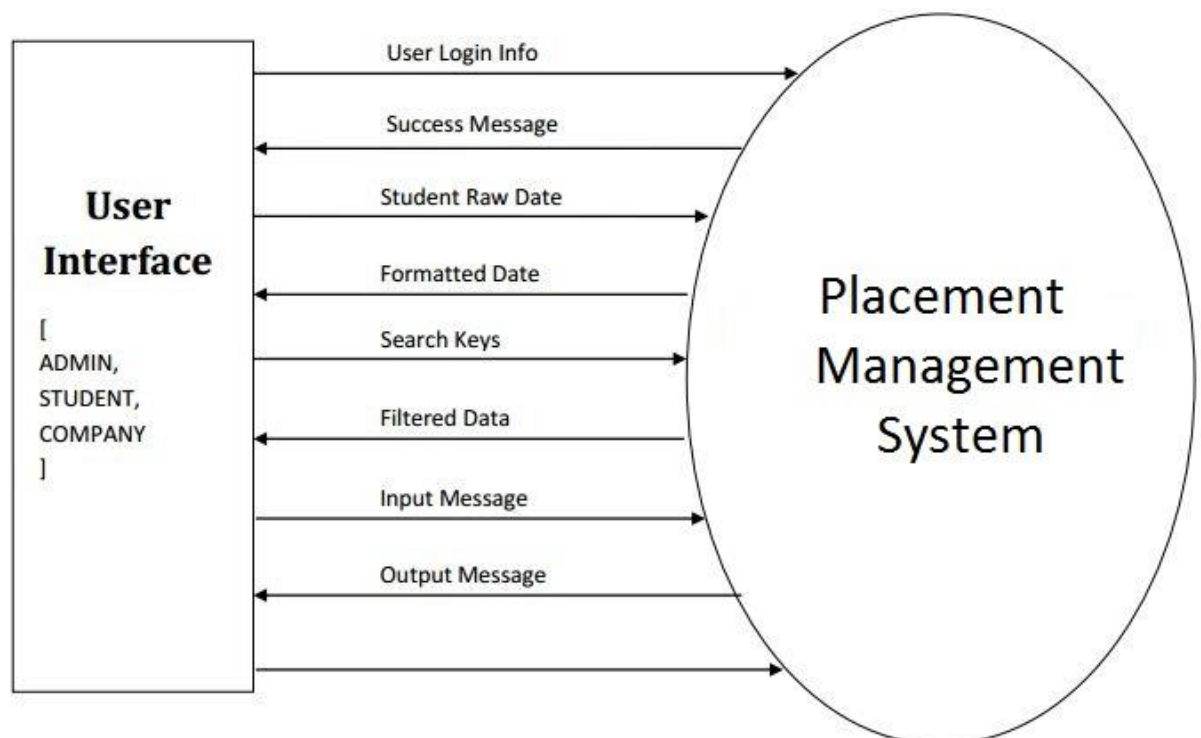
## DATA FLOW DIAGRAM

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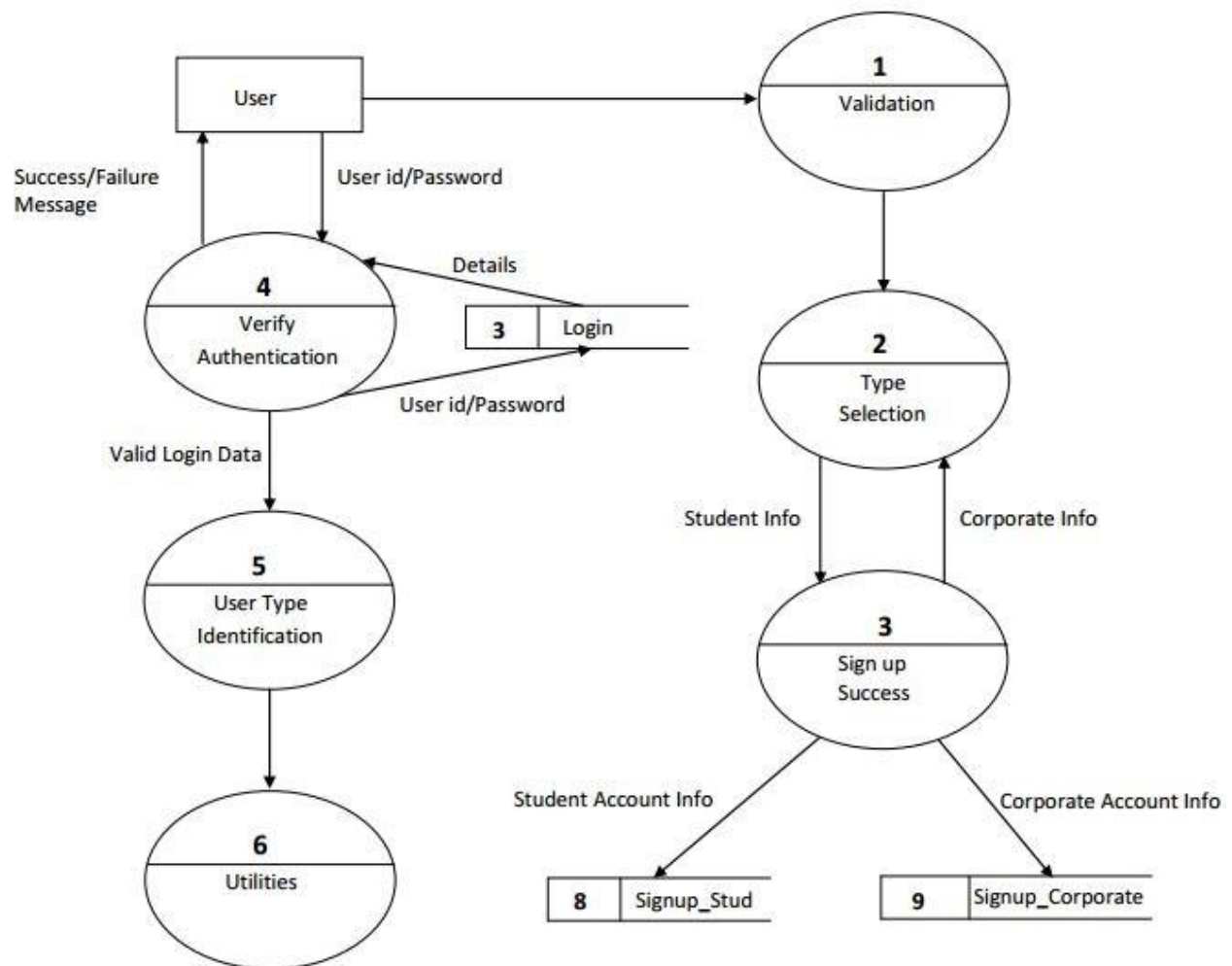
A data flow diagram (DFD) is a graphical tool used to describe and analyze the movement of data through a system by depicting the flow of data, storage of data, source or destination of data and the processes that respond to change in data. The DFD is one of the most important tools used by the system analysts to model system components, namely

- System Process
- Data Store
- The information flows in the system
- Any external entities that interact with the system (source or destination of the data)

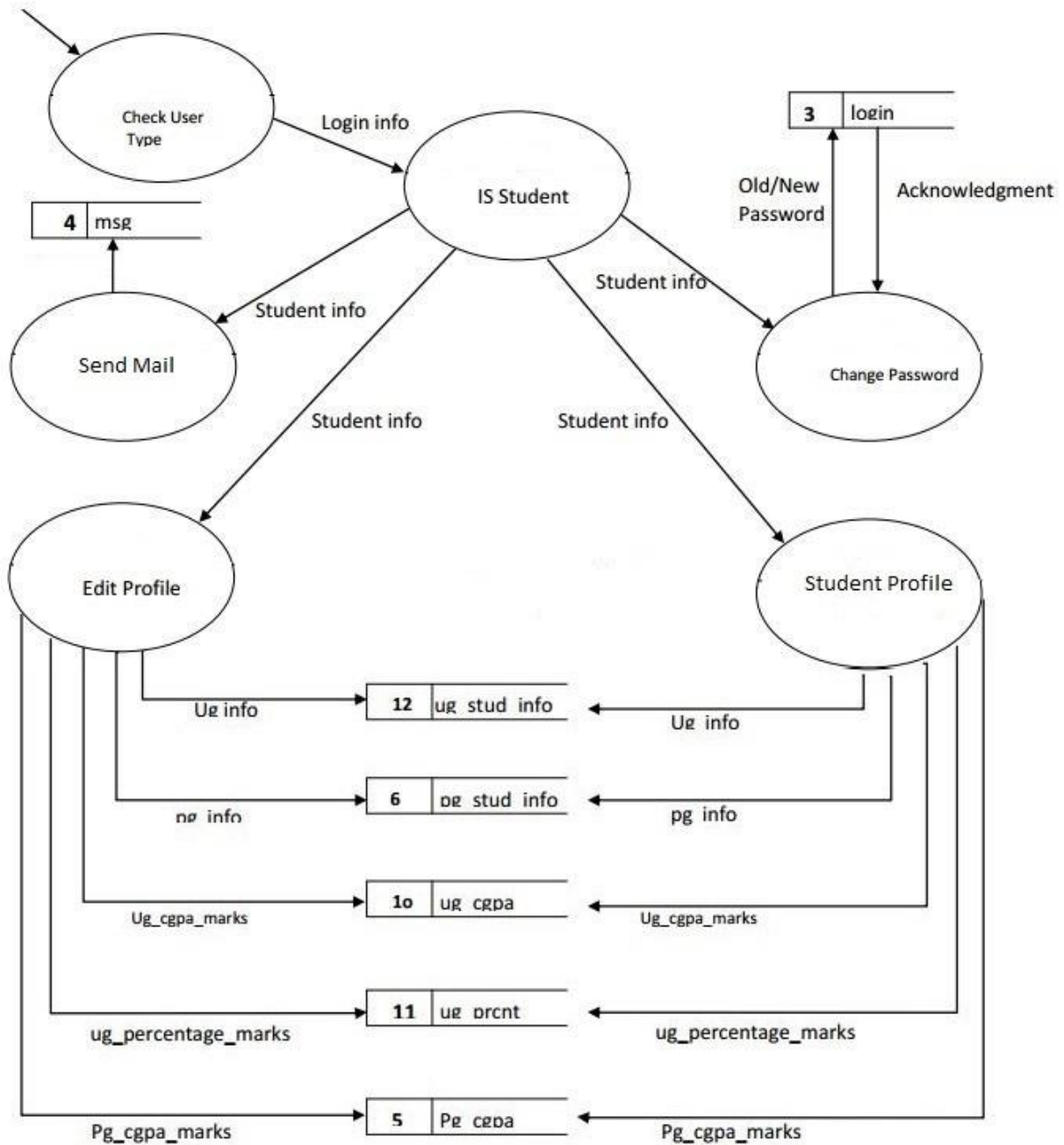
### 4.1 Context Level DFD



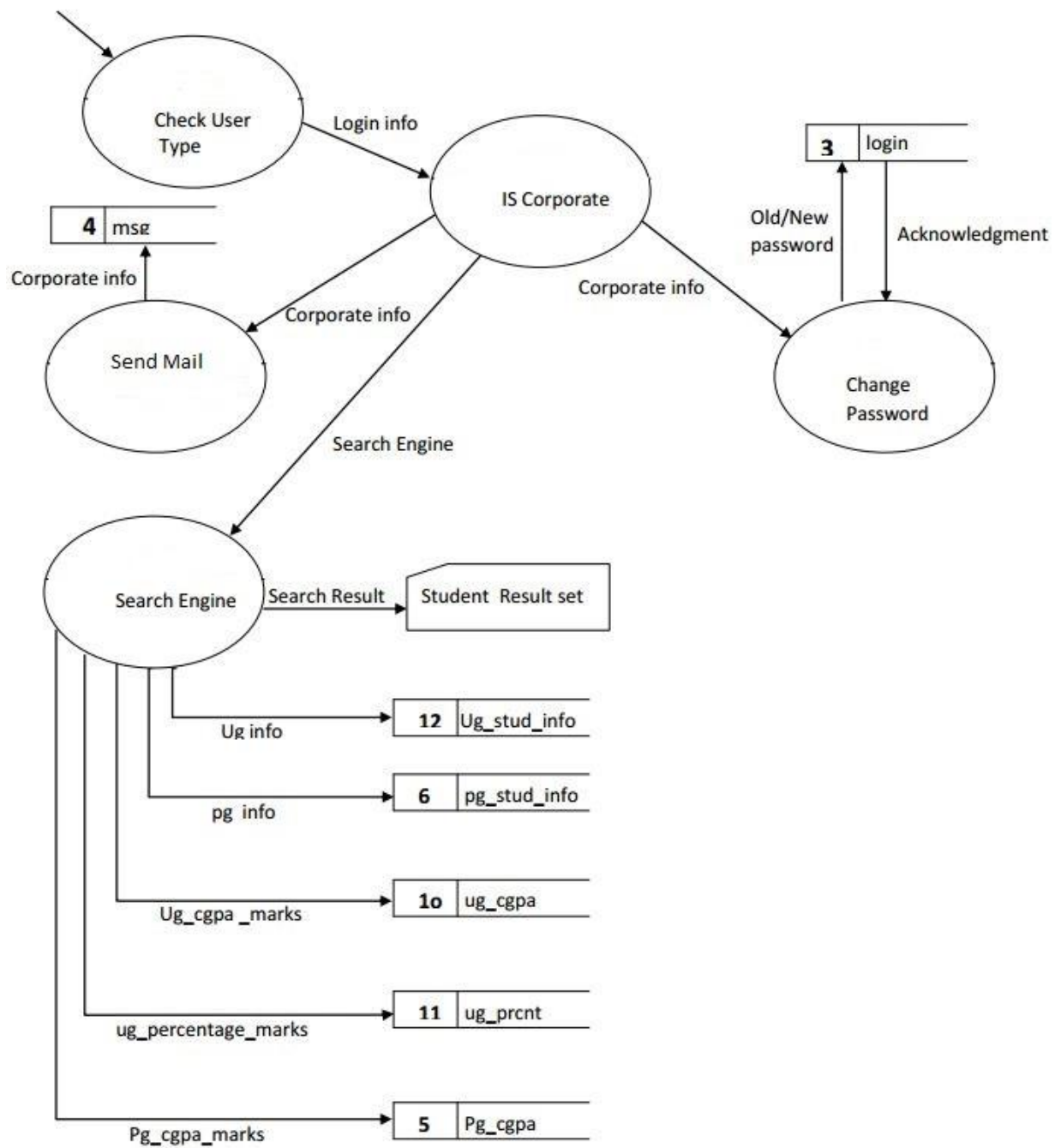
## 4.2 LEVEL 1 DFD



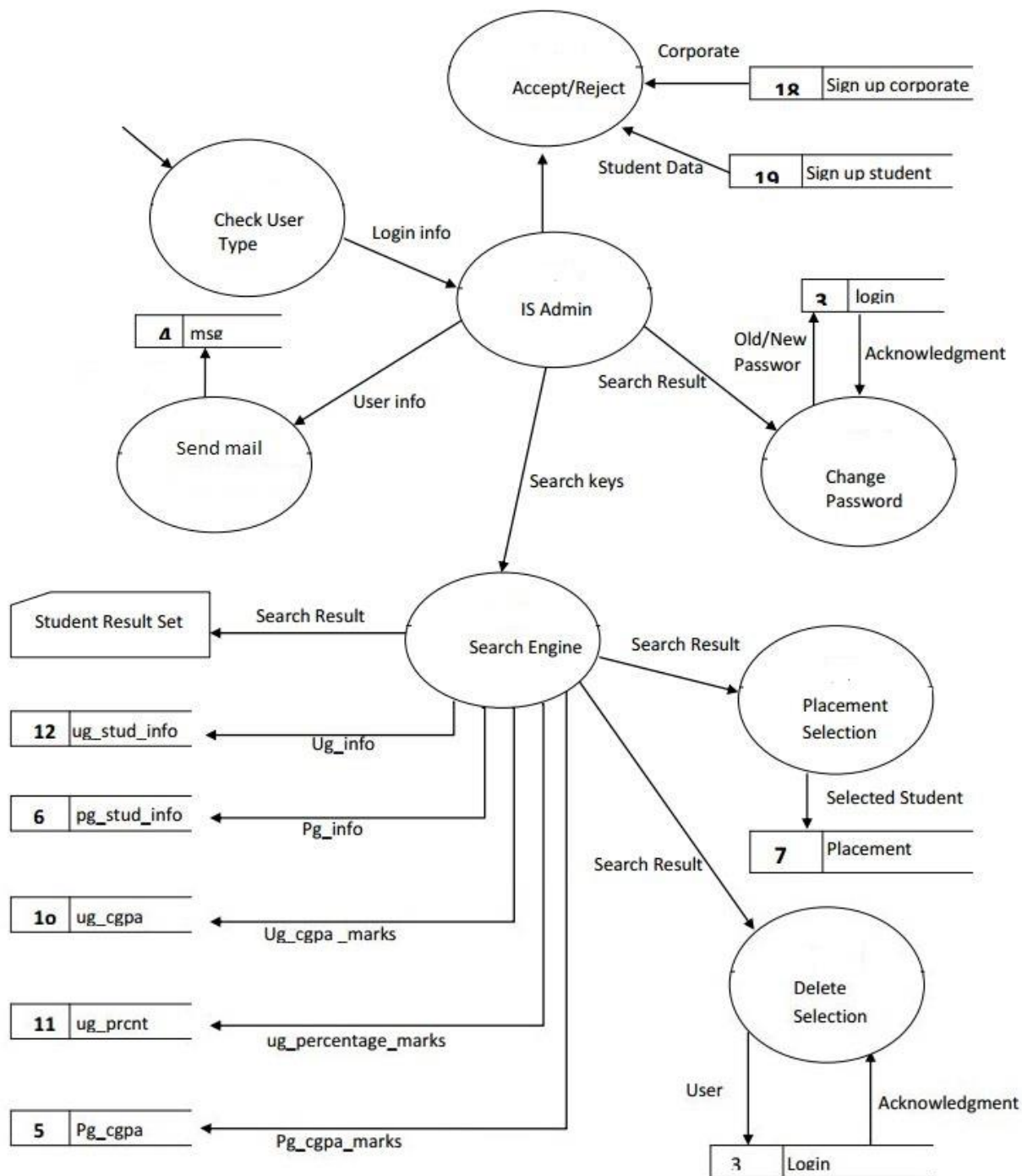
### 4.3 LEVEL 2 DFD FOR STUDENT



#### 4.4 LEVEL 2 DFD FOR COMPANY



## 4.5 LEVEL 2 DFD FOR TPO



## SYSTEM DESIGN

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Design is the first step in the development phase for any techniques and principles for the purpose of defining a device, a process or system in sufficient detail to permit its physical realization.

Once the software requirements have been analyzed and specified the software design involves three technical activities - design, coding, implementation and testing that are required to build and verify the software.

The design activities are of main importance in this phase, because in this activity, decisions ultimately affecting the success of the software implementation and its ease of maintenance are made. These decisions have the final bearing upon reliability and maintainability of the system. Design is the only way to accurately translate the customer's requirements into finished software or a system.

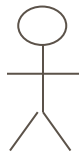
Design is the place where quality is fostered in development. Software design is a process through which requirements are translated into a representation of software. Software design is conducted in two steps. Preliminary design is concerned with the transformation of requirements into data.

## 5.1 UML Diagrams

### 5.1.1 Introduction

Actor:

A coherent set of roles that users of use cases play when interacting with the use cases.



Use case:

A description of sequence of actions, including variants, that a system performs that yields an observable result of value of an actor.



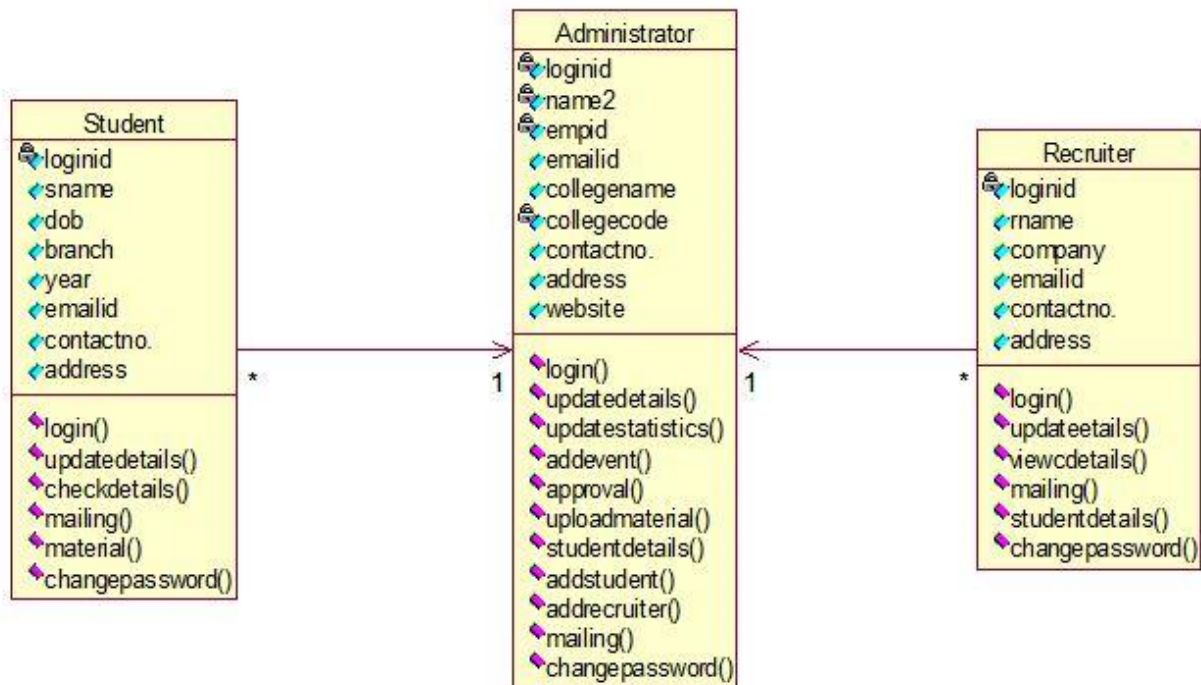
UML stands for Unified Modeling Language. UML is a language for specifying, visualizing and documenting the system. This is the step while developing any product after analysis. The goal from this is to produce a model of the entities involved in the project which later need to be built. The representation of the entities that are to be used in the product being developed need to be designed.

There are various kinds of methods in software design:

They are as follows:

- Use case Diagram
- Sequence Diagram
- Activity Diagram

## 5.1 Class Diagram

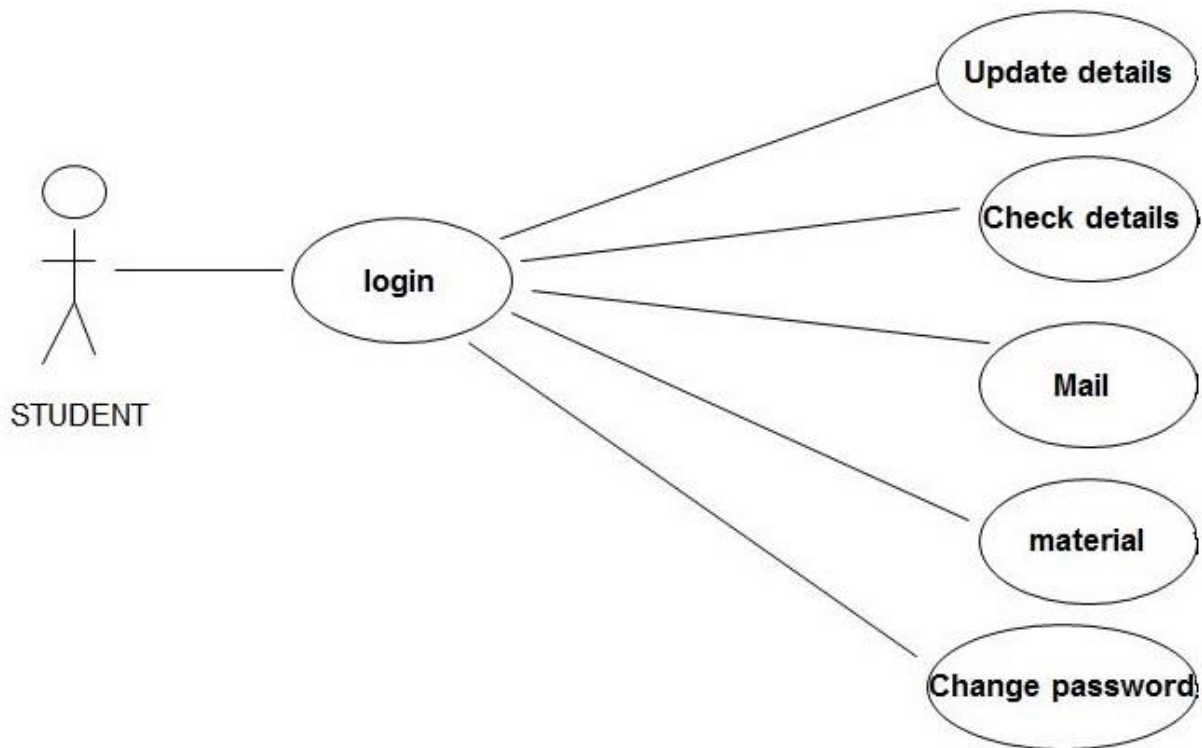




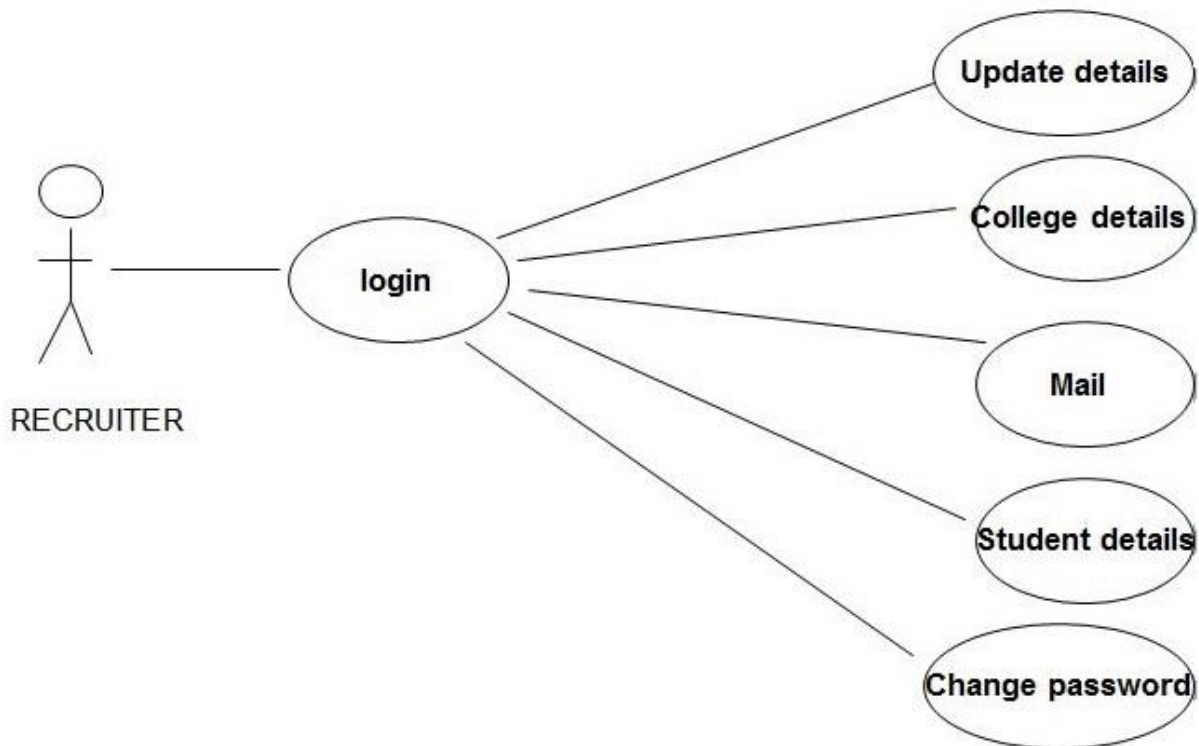
## 5.2 Usecase Diagram

A Use case is a description of set of sequence of actions. Graphically it is rendered as an ellipse with solid line including only its name. Use case diagram is a behavioral diagram that shows a set of use cases and actors and their relationship. It is an association between the use cases and actors. An actor represents a real-world object.

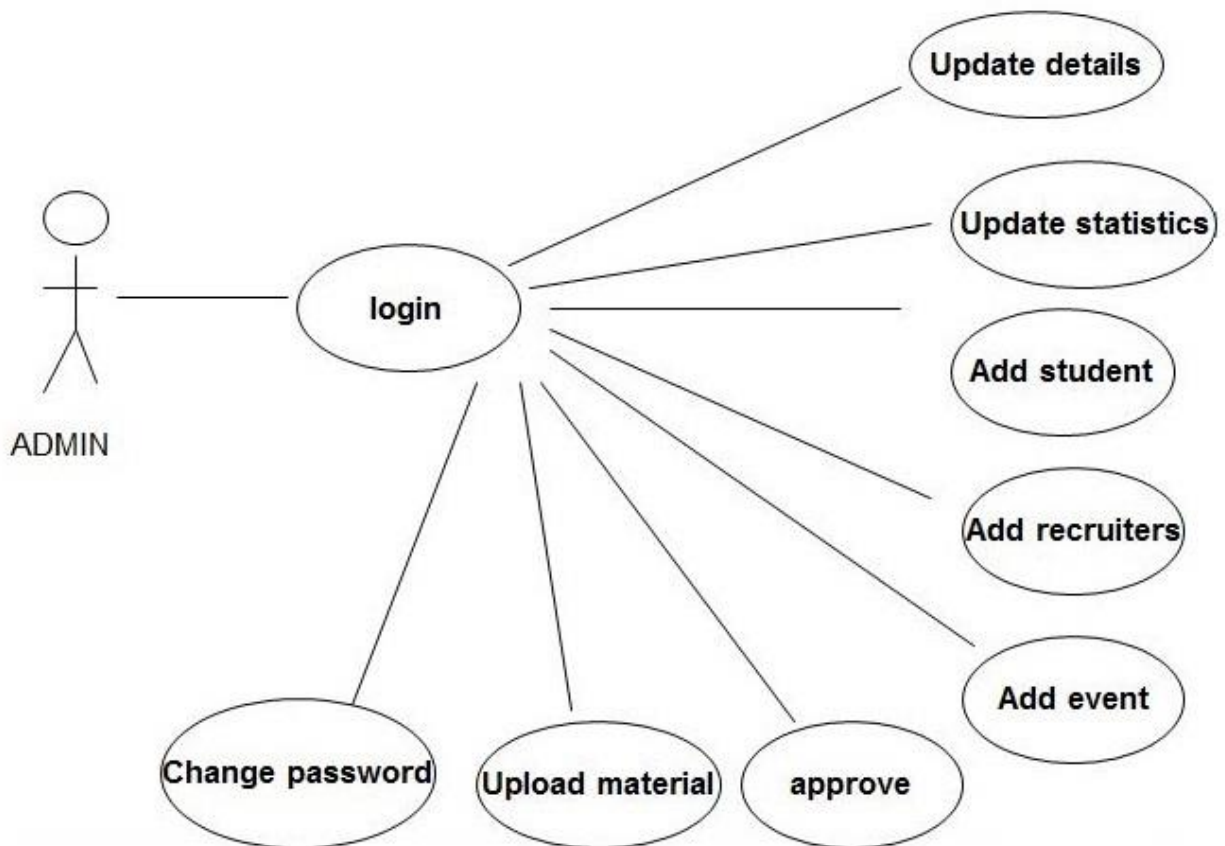
### 5.2.1 Use case Diagram for Student



### 5.2.2 Use case Diagram for Company person



### 5.2.3 Use case Diagram for Admin

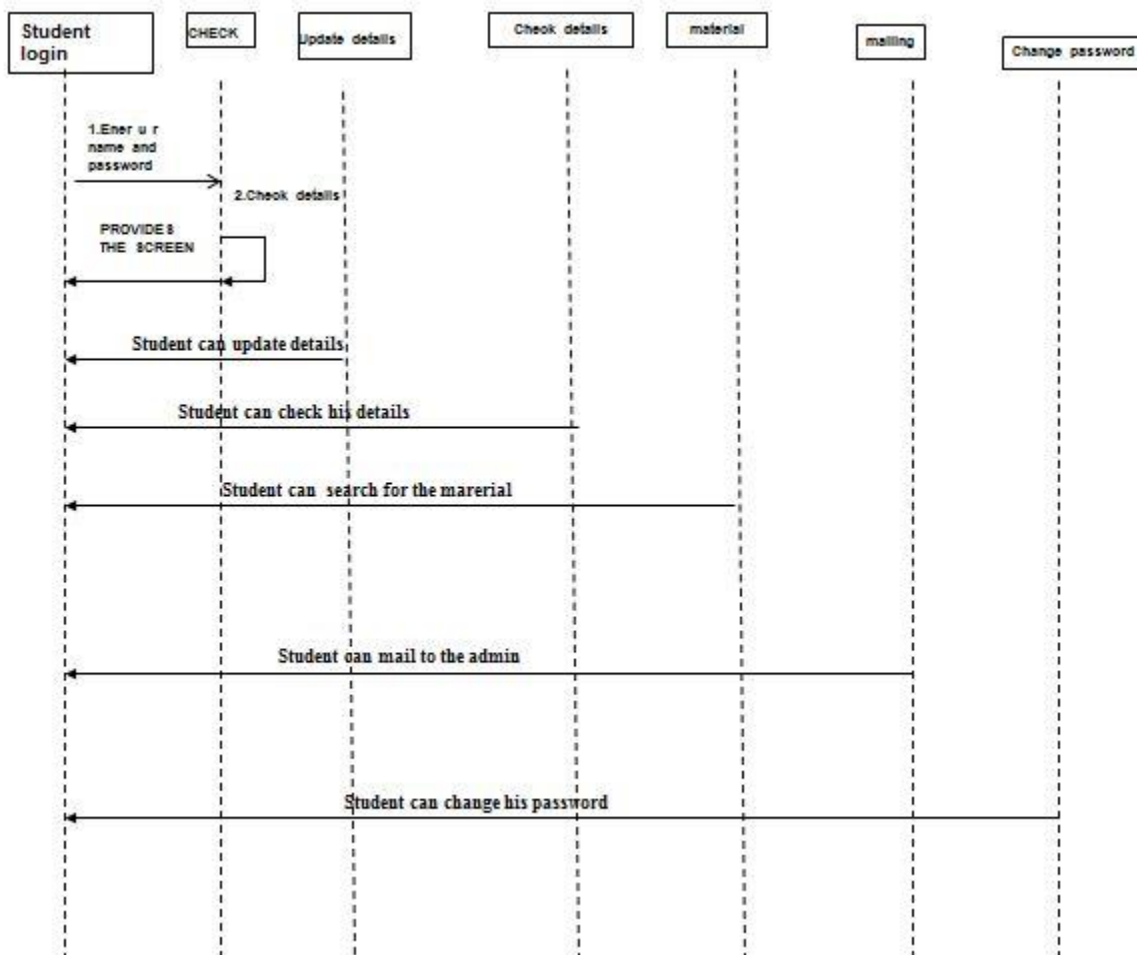


## 5.3 Sequence Diagram

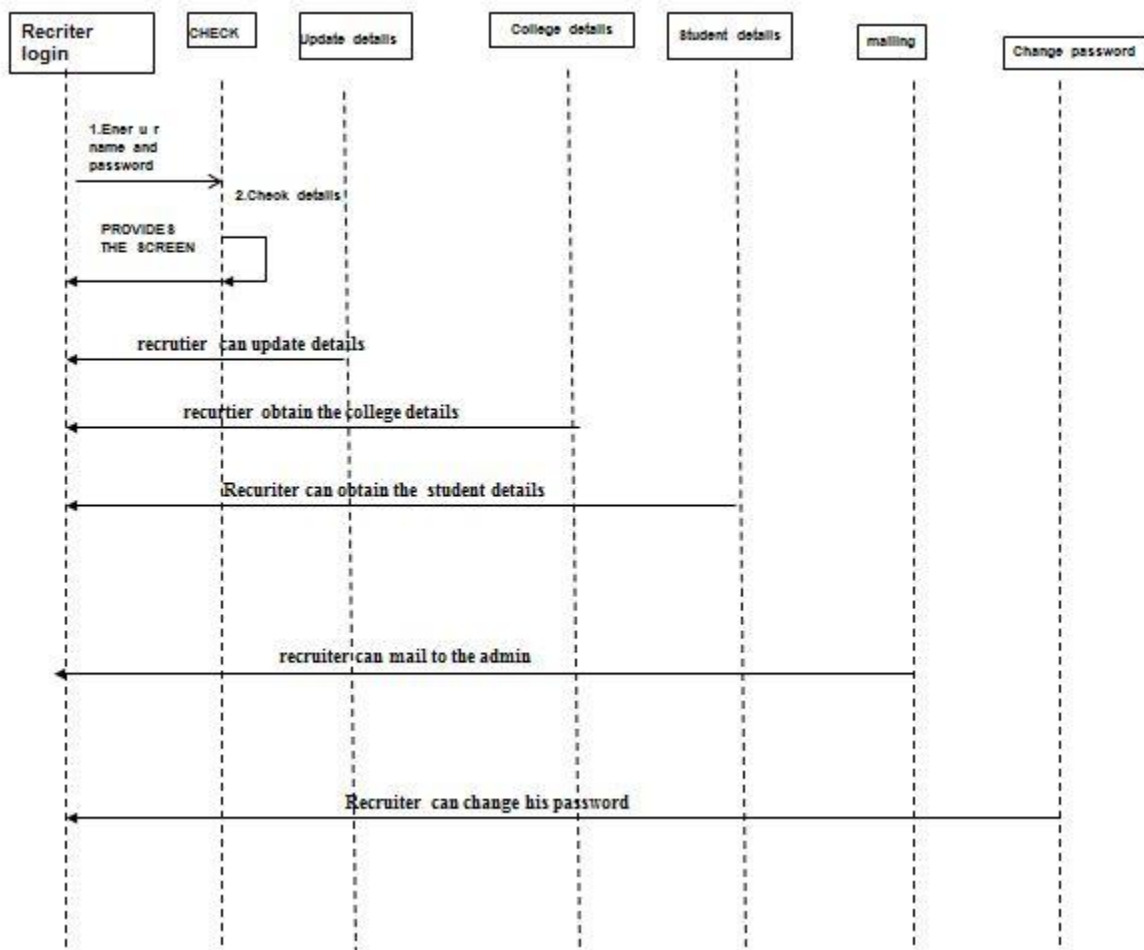
Sequence diagram and collaboration diagram are called INTERACTION DIAGRAMS. An interaction diagram shows an interaction, consisting of set of objects and their relationship including the messages that may be dispatched among them.

A sequence diagram is an introduction that empathizes the time ordering of messages. Graphically a sequence diagram is a table that shows objects arranged along the X-axis and messages ordered in increasing time along the Y-axis

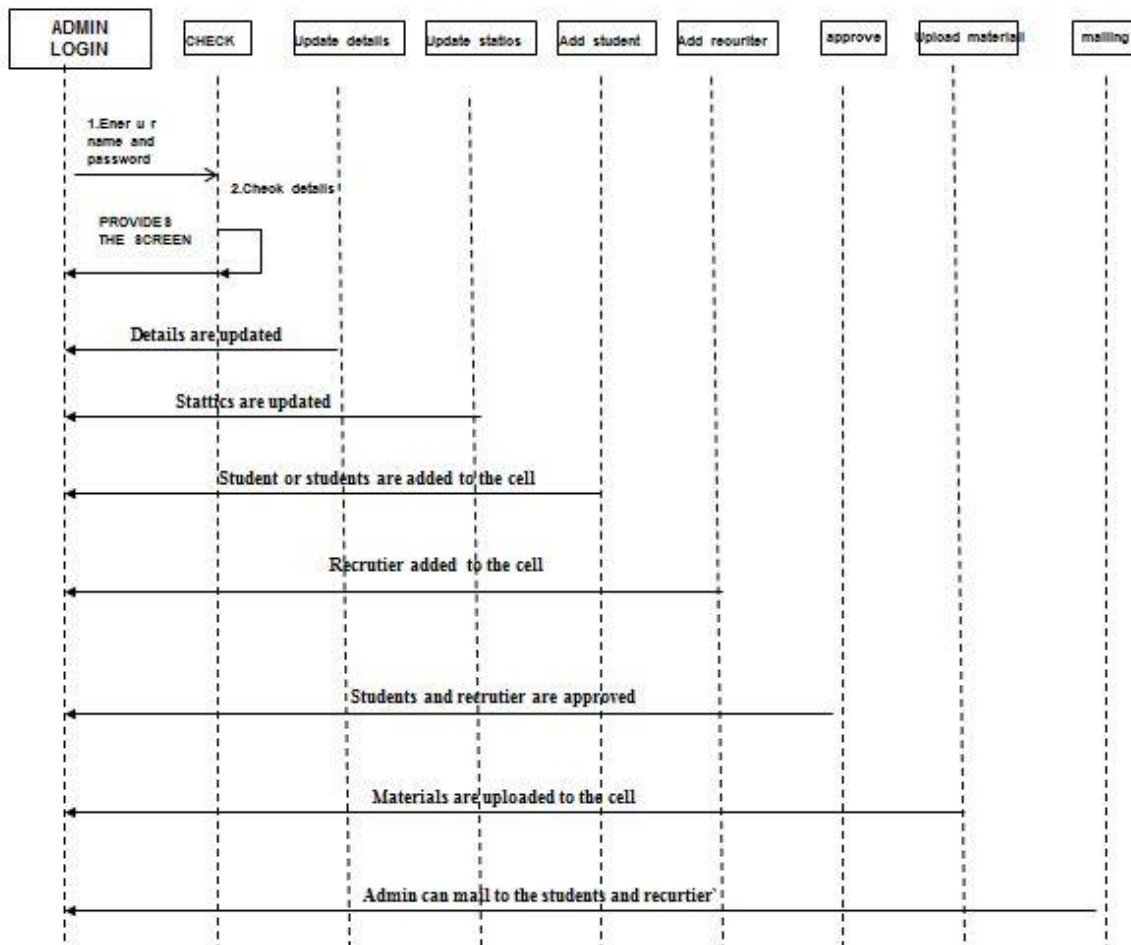
### 5.3.1 Sequence Diagram for Student



### 5.3.2 Sequence Diagram for Company person



### 5.3.3 Sequence Diagram for Admin



## **5.4 Data dictionary**

### **5.4.1 Database tables**





## **5.5 User Interface Design**

Features and used specifications

- Form based authentication
- database connection
- Logging
- Bootstrap

### **5.5.1 Utilities according to specific user**

1. Admin: -

- Admin has the supreme power of the application.
- Admin provides approval for student and corporate registration.
- Admin is responsible for maintaining the whole system.
- Use search engine for searching any data about student with various filter parameters.
- Admin can delete any profile.
- Admin can send mail to student and company.

2. Student: -

- Student of the college is the user of this application.
- New student needs to sign up with basic details.
- Reregistered student can login using unique username and password.
- Student can submit resume and update profile information.
- Student can download their profile as PDF format.

### 3. Company:-

Another type of member of this application is corporate.

- To communicate with Placement Officer, Company needs to signup.
- After approved by Placement Officer Company can search the all of the students' information.
- Company can mail to Placement Officer

### 4. Common features:-

- Everyone can see some common pages e.g. statistics.jsp, home.jsp etc.
- Every registered user can change their password and upload new profile picture.

### 5. Process of registration for the users:-

A Student or company who wants to join the application must have to fill a form for their registration which contains the information of the user.

A unique username and password is assigned to every user so that the condition of consistency satisfied. Some options are provided for the user so that they can use the application. They are as follows:-Login:-To use the application a user must have to login. When user click on the login option a form containing fields for the username and password appear. The user has to fill the information and if the username and the password are correct then he/she is allowed to use the application. If the username and the password filled by the user is not correct then a notice appear to the user regarding this condition and he/she can't use the application

### **5.5.2 SCREEN SHOTS**

#### **HOME PAGE:**

This is the home page of our project. In this page new user that means student or company needs to signup. Existing user can login with their proper username and password. This is also login page of Placement Officer.

#### ADMIN HOME PAGE:

After login this page will be the home page for Placement Officer. In this page Placement Officer can see notifications, search students and recruiters. Placement Officer can also send message to students or company, can change password and profile picture.

#### SERACH UTILITY FOR ADMIN:

This is the most important part of our project. Placement Officer can everything about the student. For example: - Student name, department, year, semester marks, ug students, pg students, placed students etc. Placement Officer can also delete the student's record

STUDENT HOME PAGE:

COMPANY PERSON HOME PAGE:

EMAIL UTILITY:



GRIDVIEW OF STUDENT DETAILS:

GRIDVIEW OF COMPANY DETAILS:

PDF FILE GENERATION:

Testing is the stage of implementation, which is aimed at ensuring that the system works accurately and efficiently before live operation commences. The logical design and physical design is thoroughly and continually examined on paper to ensure that they will work when implemented.

Thus the system test in implementation was a confirmation that all is correct and an opportunity to show the users that the system works.

Testing of the online classified system was performed in three stages which are as follows :-

- Unit Testing
- Integration Testing
- System Testing

### **Unit Testing:**

Unit testing is under taken when a module has been coded and successfully reviewed. This can be done by two methods:

- a) Black Box testing
- b) Equivalence Class Partitioning

#### **a) Black Box Testing**

Test cases are designed from an examination of the input/output values only and no knowledge of designing or coding is required the following are the two main approaches of designing black-box test cases.

## **b) Equivalence Class Partitioning**

The domain of input values to a program is partitioned into a set of equivalence classes. This partitioning is done on such way that the behavior of the program is similar to every boundary value analysis. Boundary value analysis leads to selection of the test cases at the boundaries of different equivalence classes.

Testing done by : Team Member

In our project particularly, first we create the login form & then by running the form we conclude & tested that whether it runs properly or not. So such a way we perform the Unit Testing & in this way we have done the testing to all the forms.

## **Integration Testing:**

During integration testing different modules of the system are integrated using integration plan. The integration plan specifies the steps and the order in which modules are combined to realize the full system.

Purpose:

- To test whether the module performs its intended task.
- Once all the modules have been integrated and tested, system testing can start.

In this project the Login module, Candidate & Recruiter registration module, Edit candidate & recruiter module, List ad module were integrated & tested that the system is running properly or not. Thus with the following way we performed Integration Testing.

**System Testing:**

System tests are designed to validate a fully developed system with a view to assuring that it meets its requirements. There are three types of system testing which are as follows :-

**Alpha Testing:**

- The initial testing of a computer program or system under actual usage conditions, it can be done in-house by the vendor, or outside by a customer or third party tester.
- Acceptance Testing performed by the customer in a controlled environment at the developer's site. The software used by the customer in a setting approximating the target environment with the developer observing and recording errors and usage problems.

**Beta Testing :**

Beta Testing is done after alpha testing. The main purpose of Beta Testing are as follows:-

- Testing done by the potential or existing users, customers and end users at the external site without developers involvement is known as beta testing.
- It is operation testing i.e. it tests if the software satisfies the business or operational needs of the customers and end users.
- Beta Testing is done for external acceptance testing of COTS(Commercial off the Shelf) software.

## **Test Case Design :**

Any engineered product (and most other things) can be tested in one of the following two ways.

Knowing the specified function that a product has been designed to perform, tests can be conducted to demonstrate each function is fully operational.

Knowing the internal working of a product, tests can be conducted to ensure that “all gears mesh”, that is the internal operation of the product performs according to the specification and all internal components have been adequately exercised.

## **Different Methods of Testing :**

### **White Box Testing :**

White-box testing is a methodology used to ensure and validate the internal framework, mechanisms, objects and components of a software application. White-box testing verifies code according to design specifications and uncovers application vulnerabilities.

White-box testing is also known as transparent box testing, clear box testing, structural testing and glass box testing. Glass box and clear box indicate that internal mechanisms are visible to a software engineering team.

White-box testing advantages include:

- Enables test case reusability and delivers greater stability
- Facilitates code optimization
- Facilitates finding of the locations of hidden errors in early phases of development
- Facilitates effective application testing
- Removes unnecessary lines of code

### **Regression Testing :**

It is a type of software testing i.e. carried out by software testers as functional regression tests & developers as Unit Regression Tests. Objective of regression tests are to find defects that got introduced to detect fixes or introduction of new features. Regression tests are ideal candidate for automation.

**Accessibility Testing :**

This is a formal type of software testing that helps to determine whether the software can be used by people with disability. There are also companies & consultants that provide website accessibility audits.

**Ad-hoc Testing :**

Ad hoc testing is an informal and improvisational approach to assessing the viability of a product. An ad-hoc is usually only conducted once unless a defect is found.

Commonly used in software development, ad hoc testing is performed without a plan of action and any actions taken are not typically documented. Testers may not have detailed knowledge of product requirements. Ad hoc testing is also referred to as random testing and monkey testing.

**Tester:**

Testing done by Members of the team.

**Testing tool debugging****Validation :**

- User id & password cannot be blank while logging into the site.
- In the edit profile page or the new user account page there are some mandatory fields like login id, password, vacancy no, name, resume title, company name etc. which cannot be left blank.
- In the modify password page user have to specify the login id as well as the old password & the new password.
- In the email id field '@' characters are mandator



## **MAINTENANCE**

Maintenance of a typical software product requires much more effort than the effort necessary to develop the product itself. The relative effort of development of a typical software product to its maintenance effort is roughly in the 40:60 ratios. Maintenance involves performing any one or more of the following three kinds of activities:

- Correcting errors that were not discovered during the product development phase. This is called 'Corrective Maintenance'.
- Improving the implementation of the system, and enhancing the functionalities of the system according to the customer's requirements. This is called 'Perfective maintenance'.
- Porting the software to work in a new environment. For example, porting may be required to get the software to work on a new computer platform or with a new operating system. This is called 'Adaptive Maintenance'.

## **FURTHER ENHANCEMENTS**

### **Future scope of the project:**

Though our project is itself matured enough but still betterment is always an open door. In this case also we can add some features to this software to make this software more reliable.

These are as follows:-

- Firstly, during the development of the project my prime object was to keep the hardware & software requirement as minimum as possible so that it supports maximum user base.
- Secondly, the searching procedure should be very strong like placement officer can search student as fast as possible.
- Thirdly, modify the project with better approach with more graphics.
- Fourthly, the back-up procedure can be incorporated to make sure of the database integrity.
- Fifthly, recruiter can visit any time through this application and communicate with Placement officer.
- Sixthly, Placement officer can contact with both student and company through message. Student and company can also send message to Placement officer

## **CONCLUSION**

From a proper analysis of positive points and constraints on the component, it can be safely concluded that the product is a highly efficient GUI based component. This component can be easily plugged in many other systems. Also the component is user friendly. Generally the TPO's of the Colleges has to face a lot of problems in management of the Students information. This all information has to be managed manually. So, there is a need to develop a system that can solve the mentioned problem. This software comes with just that solution.

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