STUDENT FEES MANAGEMENT SYSTEM

A

PROJECT REPORT

Submitted for the partial fulfillment for the award

of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

From

UTTARAKHAND TECHNICAL UNIVERSITY

Submitted by

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Finally, as one of the team members, I would like to appreciate all my group members for their support and coordination, I hope we will achieve more in our future endeavours.

College Roll No **:180410101010** University Roll No **:180410101010**

SHIVALIK COLLEGE OF ENGINEEING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that **Mr. Aman Agarwal** Has satisfactorily completed in the project work entitled " **FEES MANAGEMENT SYSTEM** " for the award of degree of Bachelor of Technology from Uttrakhand Technical University, Dehradun under the supervision of **Mr. Ankur Sharma** This report embodies the result of original work and study carried out by the students themselves during the year 2022

(Project Guide) Project Coordinator Head of the Department

External examiners Internal examiners

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SHIVALIK COLLEGE OF ENGINEEING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that **Mr. Aditya Gautam** Has satisfactorily completed in the project work entitled " **FEES MANAGEMENT SYSTEM** " for the award of degree of Bachelor of Technology from Uttrakhand Technical University, Dehradun under the supervision of **Mr. Ankur Sharma** This report embodies the result of original work and study carried out by the students themselves during the year 2022.

(Project Guide) Project Coordinator Head of the Department

External examiners Internal examiners

CHAPTER-1

INTRODUCTION

The “Student Fees Management System” has been developed to override the problem prevailing in the practicing manual system. This software is supported top eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.The application is reduced as much as possible to avoid error while entering the data. Its also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all its proves it is user-friendly. Student Fees Management System , as decribed above, can lead to error free, secure, reliable and fast management system. It can assist the user to concerntrate on their other activities rather to concerntrate on the record keeping. Thus it will help organization in better utilization of resources.Every organization, wheather big or small, has challenged to overcome and managing the information of course, student, semester, payments, fees structure. Every Student Fees Management System has different needs, therefore we design exclusive employee management system that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals.

1.2 OBJECTIVE

The main objective of the Project on Student Fees Management System is to manage the details of student, courses, semester, fee structure. It manges all the information about student, payments, fees structure, students. The project is totally built at accounts and registrar ends and thus only these administrator is guaranteed the access. However some modules are different for both. The purpose of this project is to build an application program to reduce the manual work for managing the student, course, payments, fees structure. It tracks all the information about students, semester, courses, fees details etc.

Functionalities provided by Student Fees Management System are as follows:

- Providing the searching facilities based on various factors. Such as student, semester, fees structure etc.
- It tracks all the information course, fees structure, semester etc.
- Manage the fees structure.
- Manage the information of course.
- Shows the information and description of the student, course.
- To increase efficiency of managing the student, course.
- Manage the information of student.
- Manage student dues, excess fee.
- Editing, adding and updating of records is improved which results in proper resource management of student data.

1.3 SCOPE

It may help coll collecting perfect management in details. In a very short time, the collection will be obvious, simple and sensible. It will help a person to know the management of passed year perfectly and vividly. It also helps in current all works relative to Student Fees Management System. It will also reduced the cost of collecting the management and collection procedure will go on smoothly.

Our Project aims at Business process automation, i.e. we have tried to computerized various processes of Student Fees Management System.

- In computer system the person has to fill the various forms and number of copies of the forms can be easily generated at a time.
- In computer system, it is not necessary to create the manifest but we can directly print it, which saves our time.
- To assist the staff in capturing the effort spent on their respective working areas.
- To utilize resources in an efficient manner by increasing their productivity through automation.
- The system generates types of information that can be used for various purposes.
- It satisfy the user requirements.
- Be easy to understand by the user and operator.
- Be easy to operate.
- Have a good user interface.
- Be expandable.

- Delievered on schedule within the bud.

CHAPTER-2

OVERVIEW

2.1 REPORTS

- It generates the report on student, course, fee structure, excess fee, due fees.
- Provide filter reports on Excess fee, Due fees, Course fee, Semester etc.
- You can easily export PDF for the Student, Semester, Fee Structure etc.
- Application also provide excel export for Course, Fees.
- You can also export the report into csv format for Student, Course, Fees.

2.2 MODULES

- Login Module: Used for managing the login details.
- Regestration Module: Used for student registration.
- Forgot Module: Used for forgot password.
- Reset Module: Used for reset password.
- Courses Module: Used for CRUD operation in course and add its fees structure
- All Student Module: View all students and used for search, promote, pay fees.
- Fee Structure Module: View course fee structure and used for update course fee structure.
- View Report Module: Used for view and generate diffrents reports of students according to

filters and export in pdf and in excel format.

- Fee Receipt Module: It genearate and print fee receipt after submitting fees.
- Fee Print: It prints fee structure of the course.

2.3 INPUT DATA,VALIDATIONS & PROJECT FEATURES

- All the fields such as course, password, student, create fee structure are validated and does not take invalid values.
- It stores admin encrypted password while regester.
- Each form for Student, Course, Payment mode cannot accept blank value fields.
- Avoiding errors in data.
- Controlling amount of input.
- Integration of all the forms in the system.
- Validations for user input.
- Actual testing done manually.
- Checking of the coding standards to be maintained during coding.
- Modifications done for the errors found during testing.
- Preparation of the test cases.
- Preparation of the possible test data with all the validation checks.

Features of Student Fees management System

- Creating and Changing issues at ease.
- Query issue list to any depth.
- Reporting & Charting in more comprehensive way.
- Accuracy in work.
- Easy and fast retrievel of information.
- Well designed reports.
- Work became very speedy.
- Easy to update information.
- Robust database back-end.
- Contain better storage capacity.
- Simple Status and resolution.
- Access of any information individually.
- Decrease the load of the person involve in existing manual system.
- User Accounts to control the access and maintain security.

CHAPTER-3

PROJECT PLANNING

Software project plan can be viewed as the following:

1. Within the organization: How the project is to be implemented? What are various contraints (time, cose, staff)? What is market strategy?

2. With respect to the customer: Weekly or timely meetings with the customer with presentation or status reports. Customers feedback is also taken and further modification and development are done. Project milestones and delieverables are also presented to the customer.

For a successful software project, the following steps can be followed

1. Select a project

- Identifying's project's aims and objectives
- Understanding requirements and specification
- Methods of analysis, design and implementation
- Testing Techniques
- Documentation

2. Project milestones and deliverables

3. Budget allocation

- Exceeding limit with control

2. Project Estimates

- Cost
- Time
- Size of code
- Duration

3. Resource Allocation

- Hardware
- Software
- Previous relevant project information
- Digital library

4. Risk Management

- Risk avoidance
- Risk detection

3.1 PROJECT SCHEDULING

It is a mechanism that is used to communicate and know about that tasks are needed and has to be done or performed and which organizational resources will be given or allocated to these tasks and in what time duration or time frame work is needed to be performed. Effective project scheduling leads to success of project, reduced cost, and increased customer satisfaction. Scheduling in project management means to list out activities, deliverables, and milestones within a project that are delivered.

3.2 COST ESTIMATION OF THE PROJECT

System cost comprises a small percentage of overall computer-based system cost. There are number of factors, which are considered, that can affect the ultimate cost of the software such as- human, technical, Hardware and software availability etc.

The main point that was considered during the cost estimation of the project was its sizing. In spite of complete software sizing, function point and approximate line of code were also used to "size" each element of the software and their costing.

The cost estimation done by us for Project also depends upon the baseline metrics collected from the past projects and these were used in conjuction with estimation variables to develop cost and effort projections.

We have basically estimated this project mainly on two bases-

1. **Effort Estimation –** This refers to the total man-hours required for the development of the project. It even includes the time required for doing documentation and user manual.

2. **Hardware Required Estimation –** This includes the cost of the PCs and the hardware cost required for development of this project.

CHAPTER-4

3.1 SOFTWARE REQUIREMENT SPECIFICATION

The Software Requirements Specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavirol description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

The proposed system has the following requirements

- System needs store information about new entry of student.
- System needs to help the internal staff to keep information of course and find them as per various queries.
- System need to maintain quantity record.
- System need to keep the record of course.
- System need to perform update and delete the record.
- System also needs a search area.
- It also needs a security system to prevent data.

3.2 FEASIBILITY STUDY

After doing the project Student Fees Management System, study and analyzing all the existing or required functionalities of the system, the next task is to do the feasibility study for the project.

All projects are feasible – given unlimited resources and infinite time. Feasibility study includes consideration of all the possible ways to provide a solution to the given problem. The proposed solution should satisfy all the user requirements and should be flexible enough so that future changes can be easily done based on the future upcoming requirements.

A. Economic Feasibility

This is a very important aspect to be considered while developing a project. We decided the technology based on minimum possible cost factor.

- All hardware and software cost has to be borne by the organization.

- Overall we have estimated that the benefits the organization is going to receive from the proposed system will surely overcome the initial costs and the later on running cost for system.

B. Technical Feasibility

This includes the study of function, performance and contraints that may affect the ability to achieve an acceptable system. For this feasibility study, we studied complete functionality to be provided in the sytem, as described in the System Requiremnt Specification(SRS), and checked if everything was possible using different types of frontend and backend platformst.

C. Operational Feasibility

No doubt the proposed system is fully GUI based that is very user friendly and all inputs to be taken all self-explanatory even to a layman. Besides, a proper training has been conducted to let know the essence of the system to the users so that they feel comfortable with new system. As far our study is concerned the clients are comfortable and happy as the system has cut down their loads and doing.

CHAPTER-5

SYSTEM ANALYSIS

System analysis is the process of gathering and interpreting facts, diagnosing problems and the information about the student fees management system to recommend improvements on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutest details and analyzed. The system analyst play the role of the interrogator and dwell deep into the working of the present system. The system is viewed as a whole and input to the system are identified. The output from the organizations are traced to the various processes. System analyses is concerned with becaming aware of the problems, identifying the relavent and decisional variables, analyzing and synthesizing the various factors and determining an optimal or atleast a satisfactory solution or pogram of action. A detailed study of the processes must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This sytem is called the existing system. Now the existing system is subjected to close study and problems areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solution are given as proposals. The proposal is reviwed on user user request and suitable changes are made. This is loop that ends as the user is satisfied with proposal. Preliminary study is the process of gathering and interpreting facts, using the information for further studies on the system. Preminary study is problem solving activity that requires intense communication between the system users and sytem developers. It does various feasibility studies. In these study a rough figure of the system activities can be obtained, from which the decision about the strategies to be followed for effective system study and analysis can be taken.

5.1 EXISTING SYSTEM

In the existing system the exams are done only manually but in proposed system we have to computerized the exams using this application.

1. Lack of security data.
2. More man power.
3. Time consuming.
4. Consume large volume of pare work.
5. Needs manual calculations.
6. No direct role for the higher officials.

5.2 PROPOSED SYSTEM

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of existing system. The system provides proper security and reduces the manual work.

1. Security of data.
2. Ensure data accuracy.
3. Proper control of the higher officials.

4. Minimize manual entry.

5. Greater efficiency

6. Better service.

7. User friendliness and interactive.

8. Minimum time required.

CHAPTER-6

SYSTEM DESIGN

In this phase, a logical system is built which fulfills the given requirements. Design a phase of software development deals with transforming the client's requiremnts into a logically working system. Normally, design is performed in the following two steps:

1. **Primary Design Phase:**

In this phase, the system is designed at block level. The blocks are created on the basis of analysis done in the problem identification phase. Different blocks are created for different functions emphasis is put on the minimizing the information flow between blocks. Thus, all activities which require more interaction are kept in one block.

2. **Secondary Design Phase:**

In this phase the detailed design of every block is performed.

The General tasks involved in the design of every block is performed

1. Design various blocks for overall system processes.

2. Design smaller, compacted and workable modules in each block.

3. Design various database structures.

4. Specify details of programs to achieve desired functionality.

5. Design the form of inputs, and outputs of the system.

6. Perform documentation of design.

7. System reviews.

6.1 USER INTERFACE DESIGN

User interface Design is concerned with the dialogue between a user and the computer. It is concerned with everything from starting the system or logging into the system to the eventually presentation of desired inputs and outputs. The overall flow of screens and messages is called a dialogue.

The Following steps are various guidelines for user interface design:

1. The System user should always be aware of what to do next.
2. The screen should be formatted so that various types of information, instructions and messages always appears in the same general display area.
3. Message, instructions or information should be displayed long enough to allow the system user to read them.
4. Use display attributes sparingly.
5. Default values for fields and answers to be entered by the user should be specified.
6. A user should not be allowed to proceed without correcting an error.
7. The System user should never get an operating system message or fatal error.

CHAPTER-7

REQUIREMENT AND TECHNOLOGY OVERVIEW

7.1 HARDWARE & SOFTWARE REQUIREMENT

In this step we analyzed the processing capabilities of the system and hardware requirement on which the proposed system would be developed.

Machine specifications in which this software is developed:

- Intel i5 8th generation processor.
- 8 GB RAM.
- > 2 TB space.

Minimum machine Specifications needed to run this software:

- Intel i3 generation 3 processor or equivalent or higher.
- 2 GB RAM or higher.
- Minimum 100 gb should be free (recommended).
- 20 Gb hard disk

Software Requirements:

- MS WINDOWS 7/8/10/LINUX/MACINTOSH.
- XAMPP(if you want to test on your local machine).

- JDK 18.0.1.1 should be installed in machine.
- JAVA 8 should be installed in machine.
- Netbeans IDE

7.2 TECHNOLOGY OVERVIEW

The technology selected for implementing the project is JAVA 8. The development was done in a "windows" environment using Netbeans IDE and XAMPP server to test software on local machine.

- JAVA 8
- MYSQL
- XAMPP

A) JAVA

Java is a **programming language** and a **platform**. Java is a high level, robust, object-oriented and secure programming language.

Java was developed by *Sun Microsystems* (which is now the subsidiary of Oracle) in the year 1995. *James Gosling* is known as the father of Java. Before Java, its name was *Oak*. Since Oak was already a registered company, so James Gosling and his team changed the name from Oak to Java.

Platform: Any hardware or software environment in which a program runs, is known as a platform. Since Java has a runtime environment (JRE) and API, it is called a platform.

According to Sun, 3 billion devices run Java. There are many devices where Java is currently used. Some of them are as follows:

1. Desktop Applications such as acrobat reader, media player, antivirus, etc.
2. Web Applications such as irctc.co.in, javatpoint.com, etc.
3. Enterprise Applications such as banking applications.
4. Mobile
5. Embedded System
6. Smart Card
7. Robotics
8. Games, etc.

Types of Java Applications

There are mainly 4 types of applications that can be created using Java programming:

1) Standalone Application

Standalone applications are also known as desktop applications or window-based applications. These are traditional software that we need to install on every machine. Examples of standalone application are Media player, antivirus, etc. AWT and Swing are used in Java for creating standalone applications.

2) Web Application

An application that runs on the server side and creates a dynamic page is called a web application. Currently, Servlet, JSP, Struts, Spring, Hibernate, JSF, etc. technologies are used for creating web applications in Java.

3) Enterprise Application

An application that is distributed in nature, such as banking applications, etc. is called an enterprise application. It has advantages like high-level security, load balancing, and clustering. In Java, EJB is used for creating enterprise applications.

4) Mobile Application

An application which is created for mobile devices is called a mobile application. Currently, Android and Java ME are used for creating mobile applications.

Java Platforms / Editions

There are 4 platforms or editions of Java:

1) Java SE (Java Standard Edition)

It is a Java programming platform. It includes Java programming APIs such as java.lang, java.io, java.net, java.util, java.sql, java.math etc. It includes core topics like OOPs, String, Regex, Exception, Inner classes, Multithreading, I/O Stream, Networking, AWT, Swing, Reflection, Collection, etc.

2) Java EE (Java Enterprise Edition)

It is an enterprise platform that is mainly used to develop web and enterprise applications. It is built on top of the Java SE platform. It includes topics like Servlet, JSP, Web Services, EJB, JPA, etc.

3) Java ME (Java Micro Edition)

It is a micro platform that is dedicated to mobile applications.

4) JavaFX

It is used to develop rich internet applications. It uses a lightweight user interface API.

B) JAVA 8

JAVA 8 is a major feature release of JAVA programming language development. Its initial version was released on 18 March 2014. With the Java 8 release, Java provided supports for functional programming, new JavaScript engine, new APIs for date time manipulation, new streaming API, etc.

New Features

- **Lambda expression** − Adds functional processing capability to Java.
- **Method references** − Referencing functions by their names instead of invoking them directly. Using functions as parameter.
- **Default method** − Interface to have default method implementation.
- **New tools** − New compiler tools and utilities are added like 'jdeps' to figure out dependencies.
- **Stream API** − New stream API to facilitate pipeline processing.
- **Date Time API** − Improved date time API.
- **Optional** − Emphasis on best practices to handle null values properly.
- **Nashorn, JavaScript Engine** − A Java-based engine to execute JavaScript code.

C) Java Lambda Expressions

Lambda expression is a new and important feature of Java which was included in Java SE 8. It provides a clear and concise way to represent one method interface using an expression. It is very useful in collection library. It helps to iterate, filter and extract data from collection.

The Lambda expression is used to provide the implementation of an interface which has functional interface. It saves a lot of code. In case of lambda expression, we don't need to define the method again for providing the implementation. Here, we just write the implementation code.

Java lambda expression is treated as a function, so compiler does not create .class file.

Functional Interface

Lambda expression provides implementation of *functional interface*. An interface which has only one abstract method is called functional interface. Java provides an anotation *@FunctionalInterface*, which is used to declare an interface as functional interface.

Why use Lambda Expression

1. To provide the implementation of Functional interface.

2. Less coding.

Java Lambda Expression Syntax

1. (argument-list) -> {body}

Java lambda expression is consisted of three components.

1) Argument-list: It can be empty or non-empty as well.

2) Arrow-token: It is used to link arguments-list and body of expression.

3) Body: It contains expressions and statements for lambda expression.

No Parameter Syntax

```
() -> {
//Body of no parameter lambda
}
```

One Parameter Syntax

```
(p1) -> {
//Body of single parameter lambda
}
```

Two Parameter Syntax

```
(p1,p2) -> {
//Body of multiple parameter lambda
}
```

D) DATABASE

A database is an application that stores the organized collection of records. It can be accessed and manage by the user very easily. It allows us to organize data into tables, rows, columns, and indexes to find the relevant information very quickly. Each database contains distinct API for performing database operations such as creating, managing, accessing, and searching the data it stores. Today, many databases available like MySQL, Sybase, Oracle, MongoDB, PostgreSQL, SQL Server, etc.

Relational DBMS

A relational database management system (RDBMS) is a collection of programs and capabilities that enable IT teams and others to create, update, administer and otherwise interact with a relational database. RDBMSes store data in the form of tables, with most commercial relational database management systems using Structured Query Language (SQL) to access the database. However, since SQL was invented after the initial development of the relational model, it is not necessary for RDBMS use.

The RDBMS is the most popular database system among organizations across the world. It provides a dependable method of storing and retrieving large amounts of data while offering a combination of system performance and ease of implementation.

RDBMS vs. DBMS

In general, databases store sets of data that can be queried for use in other applications. A database management system supports the development, administration and use of database platforms.

An RDBMS is a type of database management system (DBMS) that stores data in a row-based table structure which connects related data elements. An RDBMS includes functions that maintain the security, accuracy, integrity and consistency of the data. This is different than the file storage used in a DBMS.

MYSQL

MySQL is currently the most popular database management system software used for managing the relational database. It is open-source database software, which is supported by Oracle

Company. It is fast, scalable, and easy to use database management system in comparison with Microsoft SQL Server and Oracle Database. It is commonly used in conjunction with PHP scripts for creating powerful and dynamic server-side or web-based enterprise applications.

It is developed, marketed, and supported by **MySQL AB, a Swedish company**, and written in C programming language and C++ programming language. The official pronunciation of MySQL is not the My Sequel; it is ***My Ess Que Ell****. However, you can pronounce it in your way.* Many small and big companies use MySQL. MySQL supports many Operating Systems like Windows, Linux, MacOS, etc. with C, C++, and Java languages.

MySQL is a Relational Database Management System (RDBMS) software that provides many things, which are as follows:

- It allows us to implement database operations on tables, rows, columns, and indexes.
- It defines the database relationship in the form of tables (collection of rows and columns), also known as relations.
- It provides the Referential Integrity between rows or columns of various tables.
- It allows us to updates the table indexes automatically.
- It uses many SQL queries and combines useful information from multiple tables for the end-users.

How MySQL Works?

MySQL follows the working of Client-Server Architecture. This model is designed for the end-users called clients to access the resources from a central computer known as a server using network services. Here, the clients make requests through a graphical user interface (GUI), and the server will give the desired output as soon as the instructions are matched. The process of MySQL environment is the same as the client-server model.

The core of the MySQL database is the MySQL Server. This server is available as a separate program and responsible for handling all the database instructions, statements, or commands. The working of MySQL database with MySQL Server are as follows:

1. MySQL creates a database that allows you to build many tables to store and manipulate data and defining the relationship between each table.

2. Clients make requests through the GUI screen or command prompt by using specific SQL expressions on MySQL.

3. Finally, the server application will respond with the requested expressions and produce the desired result on the client-side.

A client can use any MySQL GUI. But, it is making sure that your GUI should be lighter and user-friendly to make your data management activities faster and easier. Some of the most widely used MySQL GUIs are MySQL Workbench, SequelPro, DBVisualizer, and the Navicat DB Admin Tool. Some GUIs are commercial, while some are free with limited functionality, and some are only compatible with MacOS. Thus, you can choose the GUI according to your needs.

Reasons for popularity

MySQL is becoming so popular because of these following reasons:

- MySQL is an open-source database, so you don't have to pay a single penny to use it.

- MySQL is a very powerful program that can handle a large set of functionality of the most expensive and powerful database packages.

- MySQL is customizable because it is an open-source database, and the open-source GPL license facilitates programmers to modify the SQL software according to their own specific environment.

- MySQL is quicker than other databases, so it can work well even with the large data set.

- MySQL supports many operating systems with many languages like PHP, PERL, C, C++, JAVA, etc.

- MySQL uses a standard form of the well-known SQL data language.

- MySQL is very friendly with PHP, the most popular language for web development.

- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).

History of MySQL

The project of MySQL was started in 1979 when MySQL's inventor **Michael Widenius** developed an in-house database tool called **UNIREG** for managing databases. After that, UNIREG has been rewritten in several different languages and extended to handle big databases. After some time, Michael Widenius contacted **David Hughes**, the author of mSQL, to see if Hughes would be interested in connecting mSQL to UNIREG's B+ ISAM handler to provide indexing to mSQL. That's the way MySQL came into existence.

PREPARE STATEMENTS

The PreparedStatement interface is a subinterface of Statement. It is used to execute parameterized query.

Let's see the example of parameterized query:

String sql="insert into emp values(?,?,?)";

As you can see, we are passing parameter (?) for the values. Its value will be set by calling the setter methods of PreparedStatement.

Why use PreparedStatement?

Improves performance: The performance of the application will be faster if you use PreparedStatement interface because query is compiled only once.

How to get the instance of PreparedStatement?

The prepareStatement() method of Connection interface is used to return the object of PreparedStatement.

Syntax:

public PreparedStatement prepareStatement(String query) **throws** SQLException{

E) XAMPP

XAMPP is one of the widely used cross-platform web servers, which helps developers to create and test their programs on a local webserver. It was developed by the **Apache Friends**, and its native source code can be revised or modified by the audience. It consists of **Apache HTTP**

Server, MariaDB, and interpreter for the different programming languages like PHP and Perl. It is available in 11 languages and supported by different platforms such as the IA-32 package of Windows & x64 package of macOS and Linux.

What is XAMPP?

XAMPP is an abbreviation where ***X stands for Cross-Platform, A stands for Apache, M stands for MYSQL, and the Ps stand for PHP and Perl***, respectively. It is an open-source package of web solutions that includes Apache distribution for many servers and command-line executables along with modules such as Apache server, MariaDB, PHP, and Perl.

XAMPP helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server. It is a platform that furnishes a suitable environment to test and verify the working of projects based on Apache, Perl, MySQL database, and PHP through the system of the host itself. Among these technologies, Perl is a programming language used for web development, PHP is a backend scripting language, and MariaDB is the most vividly used database developed by MySQL.

CHAPTER-8

WORKING

8.1 FLOW CHART

This is the blueprint of our project and the logic behind flow chat is something like that…..

A flowchart is a type of diagram that represents an algorithm, workflow or process. Theflowchar shows the steps as boxes of various kinds, and their order by connecting the boxeswith arrows. This diagrammatic representation illustrates a solution model to a given problem.

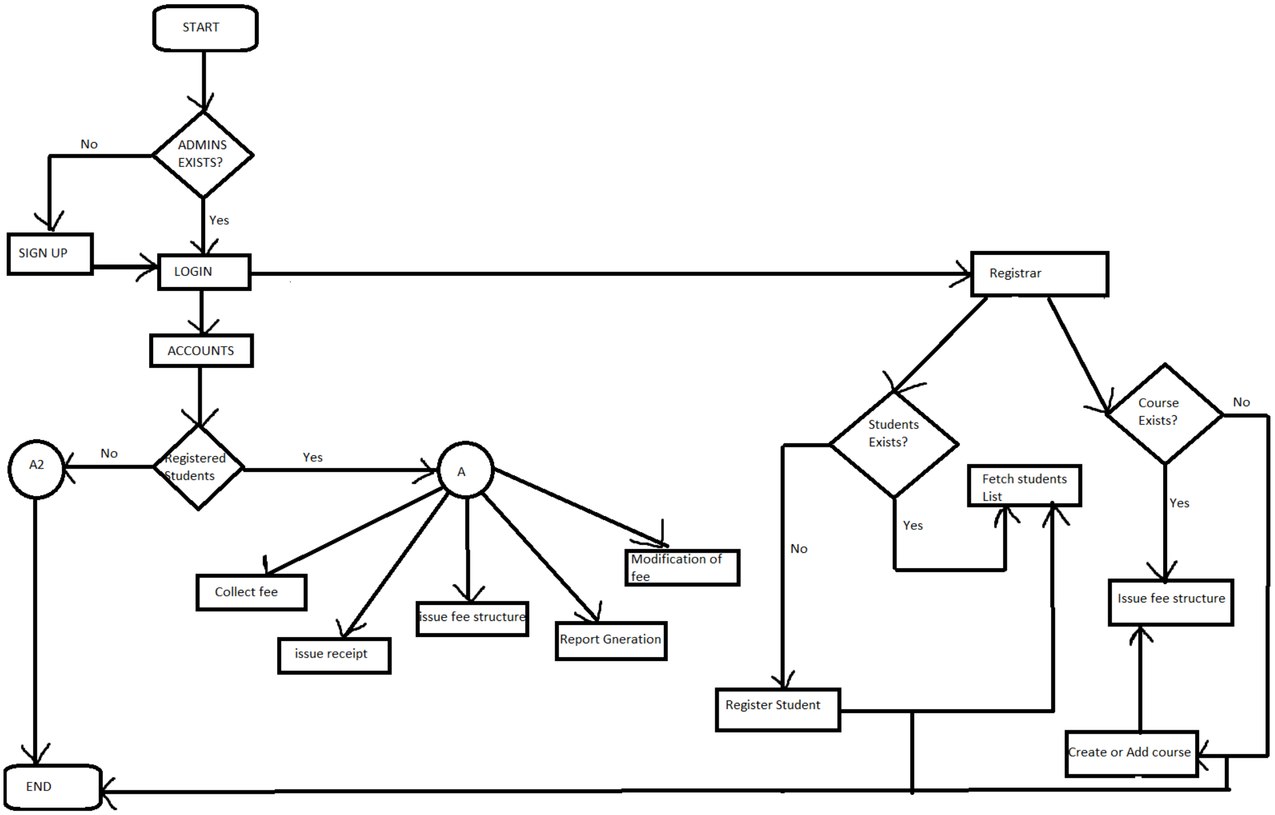


Fig-1

8.2 WORKING MODULES

LOGIN–

In this module, Admins(Registrar or accountant) can login their account. After successfully login they are responsible for register student, create fee structure, add course, update course, delete course, update fee structure, extract reports, submit fees, generate fee slips etc.

SIGN UP-

In this module, Institutes need to register admins first according to their role. Form is validated so form will not accept any invalid /blank/ null values.

FORGOT PASSWORD-

In this module, if admins forgot their password then they need to enter their mail id after that they will receive OTP in their email id which they need to enter in form for verification.

RESET PASSWORD-

After verification of code admins are able to change their password by entering new password and after that they need to enter their new password one more time for confirming.

STUDENT REGISTRATION-

This module is only for registrar new students according to their course.

VIEW STUDENTS-

This module is only access by registrar and registrar can fetch students according to their course. Registrar can also print and export list of students in pdf and excel according to their courses.

COURSES-

In this module admins can add, update, view and delete courses. They can also create fee structure year wisely of a particular course.

FEE STRUCTURE-

In this module admin can view and update courses fee structure. Admins can also search a particular course to know about its fee structure. Admins can also print and export fee structure in pdf.

ABOUT-

This module tells about software, owner’s permissions.

LOGOUT-

This block simply logout admins from the application.

ALL STUDENTS-

In this module accountant can view and promote student. Accountant can also search, marked and generate fee slip easily.

FEE RECORD-

In this module accountant can print,export in pdf and exports reports in excel according to filters. By this accountant is able to generate different reports like excess fee, due fees etc.

CHAPTER-9

CODE

In this phase, we start build the entire system by writing code using the chosen programming language. In the coding phase, tasks are divided into units or modules and assigned to the team. It is the longest phase of our project.

All the code we write for this project is available in the following link:

- https://github.com/Aman954/FDAMS

9.1 GIT

Git is a distributed version control system and open-source software. It enables developers to manage many versions of a source code with ease. You can use it to figure out who did what, when, and why. Git has become a must-have tool for any developer nowadays, and knowing Git commands is required for developers to fully utilize Git. There are hundreds of Git commands, but just a few are used regularly.

git init

This command turns a directory into an empty Git repository. This is the first step in creating a repository. After running git init, adding and committing files/directories is possible.

git add

Adds files in the to the staging area for Git. Before a file is available to commit to a repository, the file needs to be added to the Git index (staging area). There are a few different ways to use git add, by adding entire directories, specific files, or all unstaged files.

git remote

To connect a local repository with a remote repository. A remote repository can have a name set to avoid having to remember the URL of the repository.

git push

Sends local commits to the remote repository. *git push* requires two parameters: the remote repository and the branch that the push is for.

CHAPTER-10

SECURITY TESTING

Testing is valid for the success of any software. No system design is ever perfect. Testing is also carried in two phases. First phase is during the software engineering that is during the module creation, second phase is after the completion of software. This is system testing which verifies that the whole set of programs hanged together.

10.1 White Box Testing-

White box testing techniques analyze the internal structures the used data structures, internal design, code structure and the working of the software rather than just the functionality as in black box testing. It is also called glass box testing or clear box testing or structural testing.

10.2 Black Box Testing-

Black box testing is a technique of software testing which examines the functionality of software without peering into its internal structure or coding. The primary source of black box testing is a specification of requirements that is stated by the customer.

In this method, tester selects a function and gives input value to examine its functionality, and checks whether the function is giving expected output or not. If the function produces correct output, then it is passed in testing, otherwise failed.

10.3 Alpha Testing-

Alpha Testing is a type of software testing performed to identify bugs before releasing the product to real users or to the public. Alpha Testing is one of the **user acceptance testing**. This is referred to as an alpha testing only because it is done early on, near the end of the development of the software. Alpha testing is commonly performed by homestead software engineers or quality assurance staffs. It is the last testing stage before the software is released into the real world.

10.4 Beta Testing-

Beta testing is a type of **U**ser **A**cceptance **T**esting among the most crucial testing, which performed before the release of the software. Beta Testing is a type of Field Test. This testing performs at the end of the ***software*** testing life cycle. This type of testing can be considered as external user acceptance testing. It is a type of salient testing. Real users perform this testing. This testing executed after the alpha testing. In this the new version, beta testing is released to a limited audience to check the accessibility, usability, and functionality, and more.

10.5 Unit Testing-

Unit testing involves the testing of each unit or an individual component of the software application. It is the first level of functional testing. The aim behind unit testing is to validate unit components with its performance.

A unit is a single testable part of a software system and tested during the development phase of the application software.

The purpose of unit testing is to test the correctness of isolated code. A unit component is an individual function or code of the application.

10.6 Integration Testing-

Integration testing is the second level of the software testing process comes after unit testing. In this testing, units or individual components of the software are tested in a group. The focus of the integration testing level is to expose defects at the time of interaction between integrated components or units.

Unit testing uses modules for testing purpose, and these modules are combined and tested in integration testing. The Software is developed with a number of software modules that are coded by different coders or programmers. The goal of integration testing is to check the correctness of communication among all the modules.

10.7 Validation Testing-

The process of evaluating software during the development process or at the end of the development process to determine whether it satisfies specified business requirements.

Validation Testing ensures that the product actually meets the client's needs. It can also be defined as to demonstrate that the product fulfills its intended use when deployed on appropriate environment.

10.8 System Testing-

A computer system consists of a group of software to perform the various tasks, but only software cannot perform the task; for that software must be interfaced with compatible hardware. System testing is a series of different type of tests with the purpose to exercise and examine the full working of an integrated software computer system against requirements.

CHAPTER-11

SCREENSHOTS

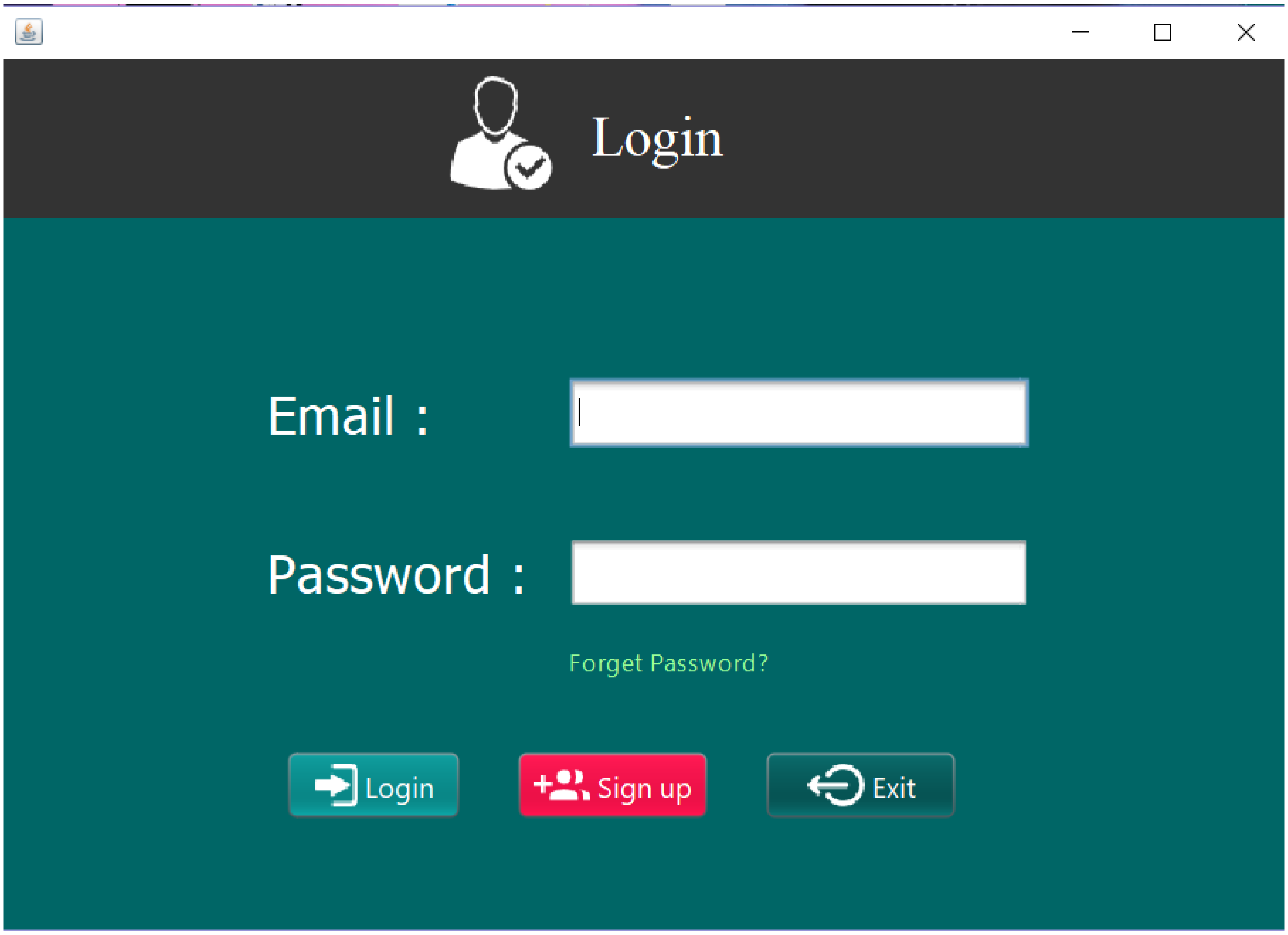
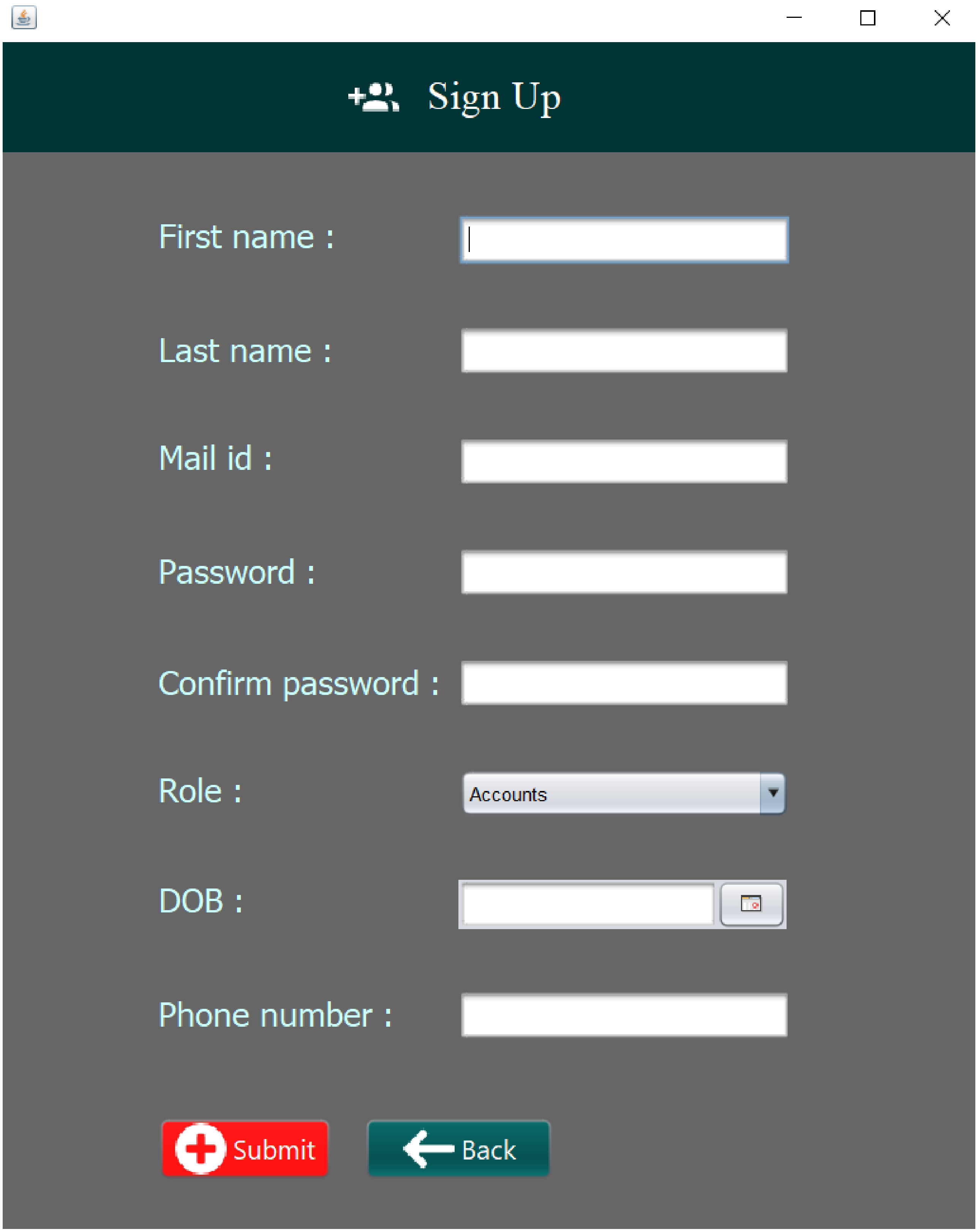


Fig-2 (Login)


Sign Up

First name :

Last name :

Mail id :

Password :

Confirm password :

Role : Accounts

DOB :

Phone number :

Fig-3 (Registration)

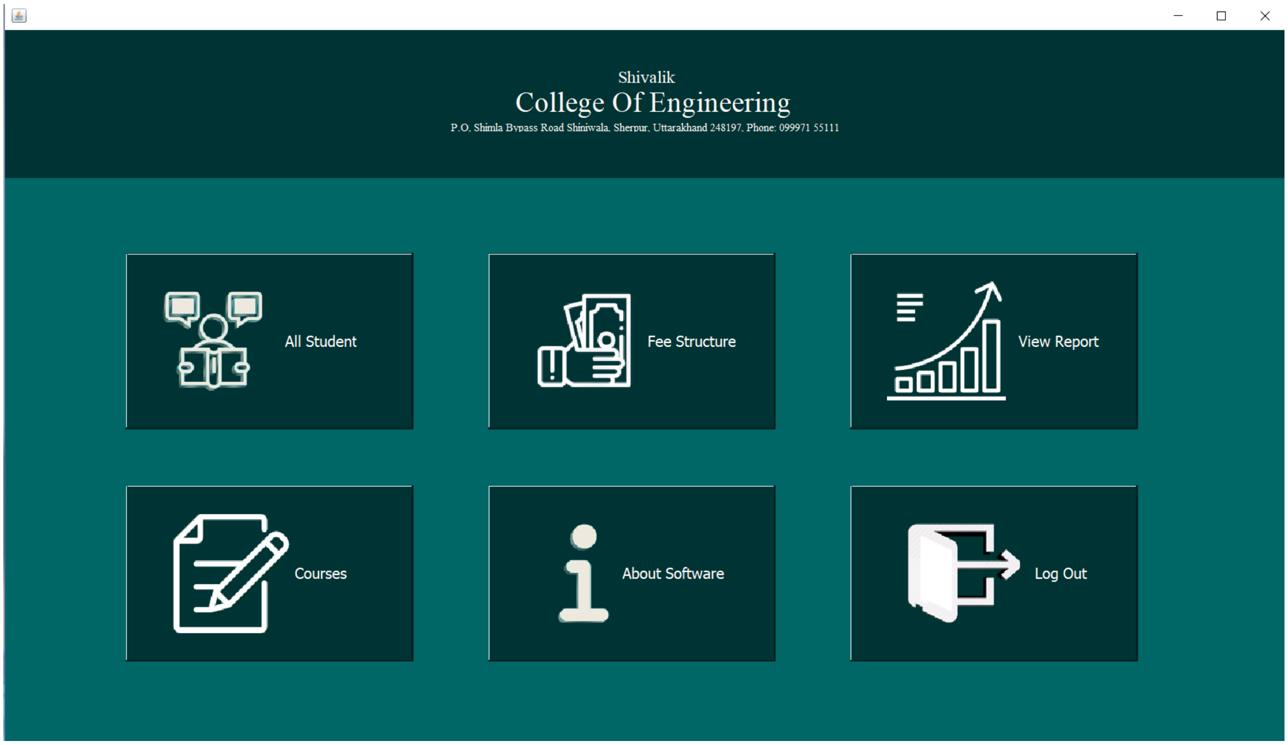


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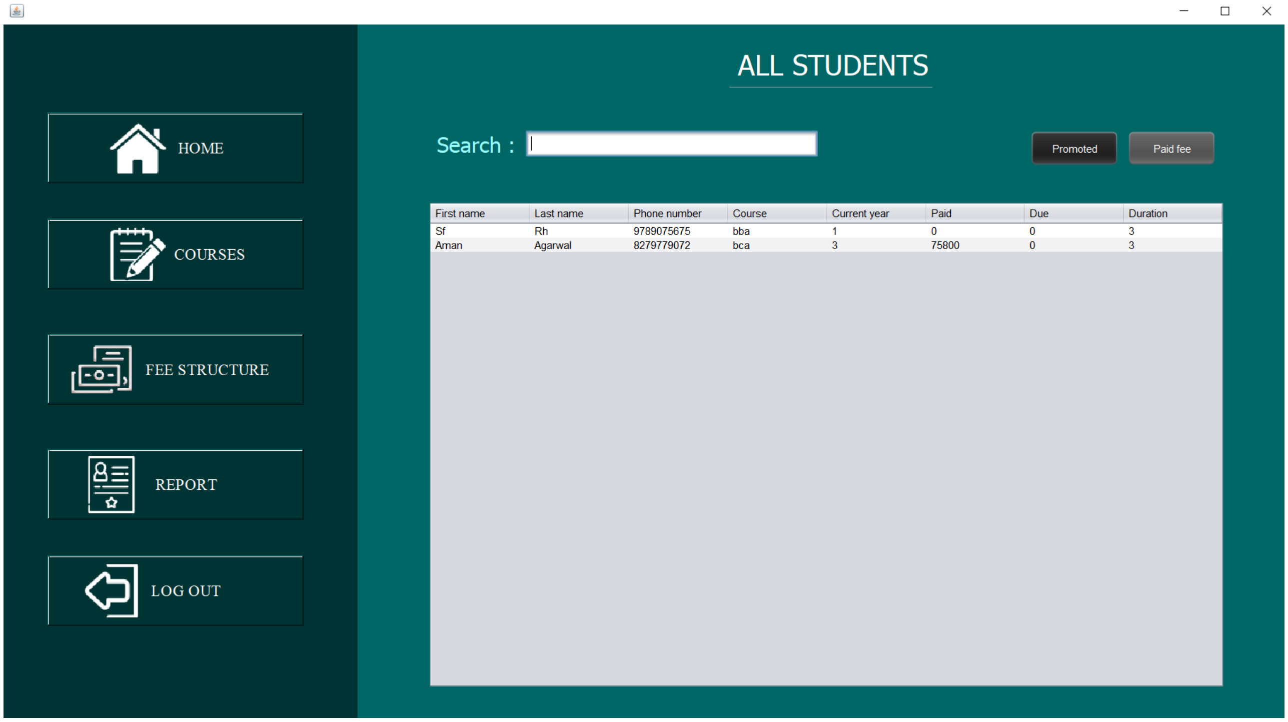
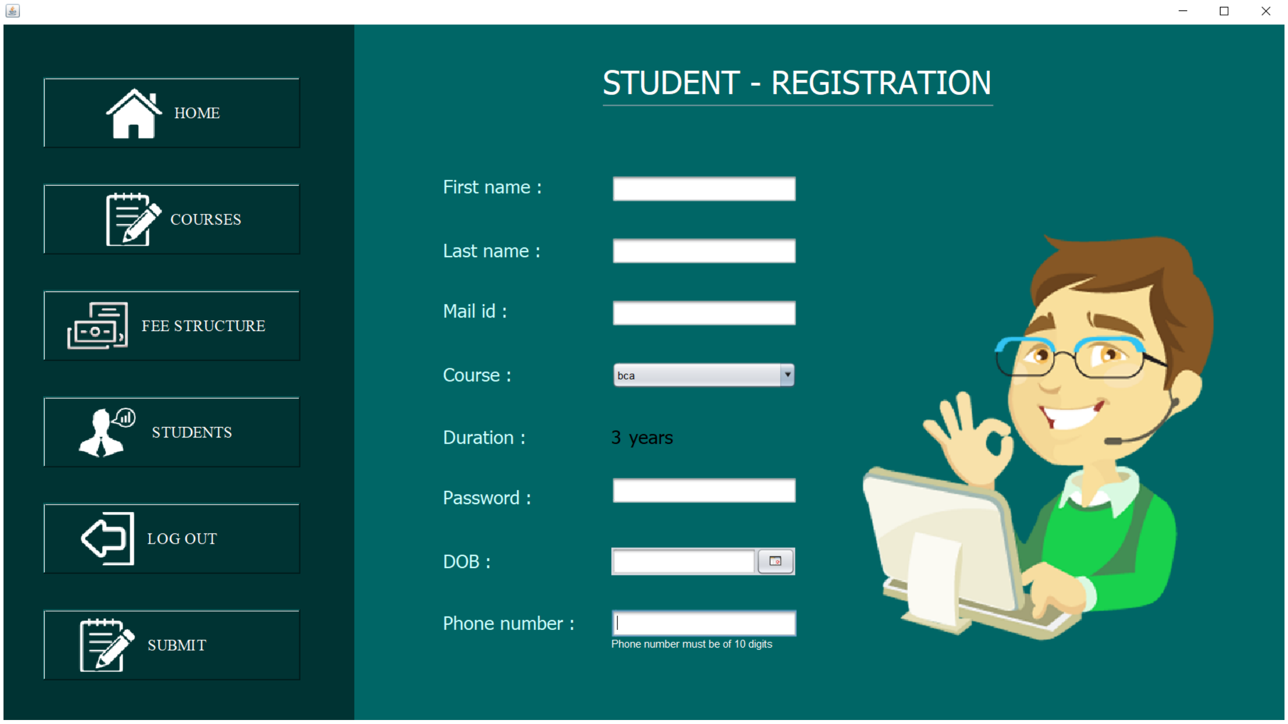
Fig-4 (Home)



ALL STUDENTS

First name	Last name	Phone number	Course	Current year	Paid	Due	Duration
Sf	Rh	9789075675	bba	1	0	0	3
Aman	Agarwal	8279779072	bca	3	75800	0	3

Fig-5 (All Student)



STUDENT - REGISTRATION

First name :

Last name :

Mail id :

Course : bca

Duration : 3 years

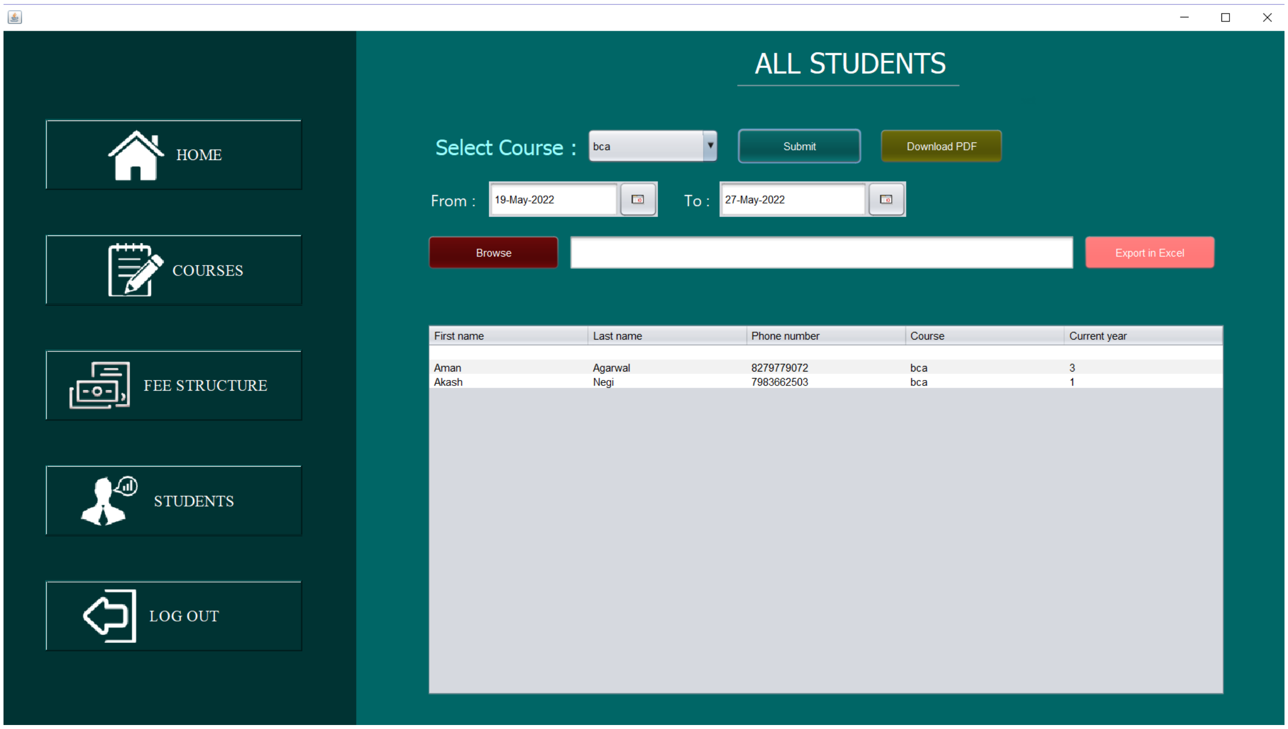
Password :

DOB :

Phone number :

Phone number must be of 10 digits

Fig-6 (Student Registration)



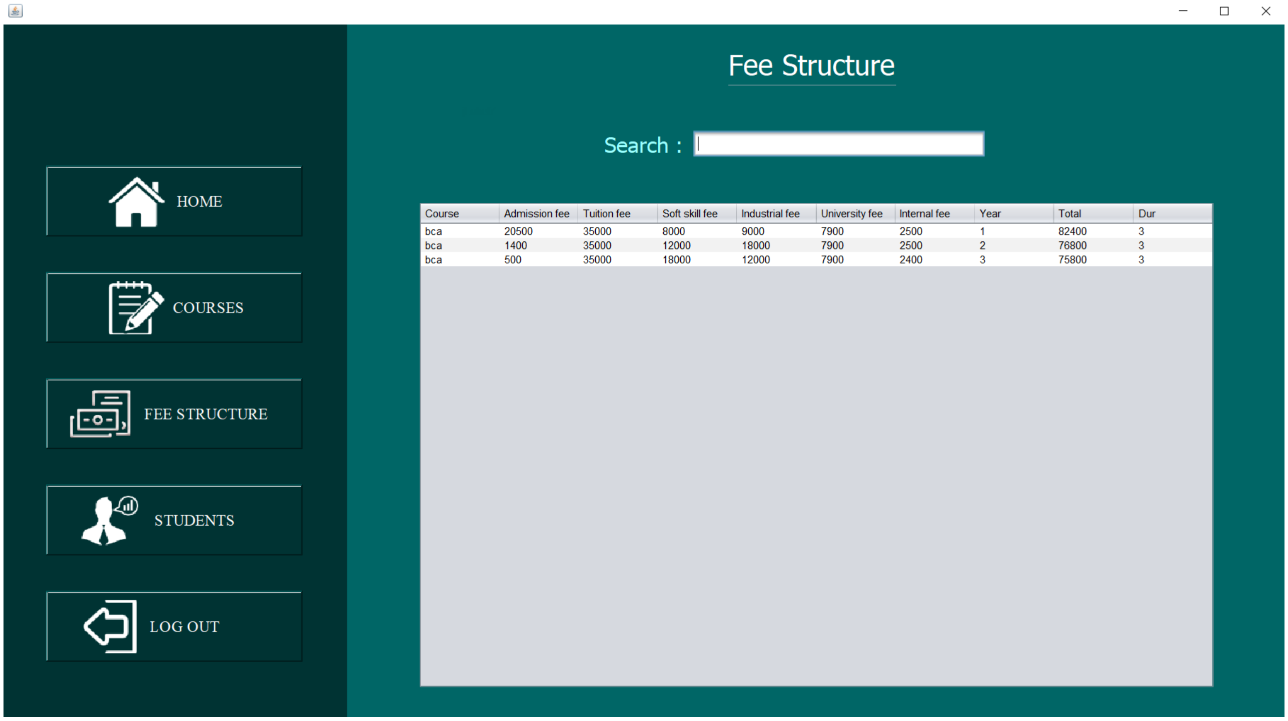
ALL STUDENTS

Select Course : bca

From : 19-May-2022 To : 27-May-2022

First name	Last name	Phone number	Course	Current year
Aman	Agarwal	8279779072	bca	3
Akash	Negi	7983662503	bca	1

Fig-7 (Student Report)

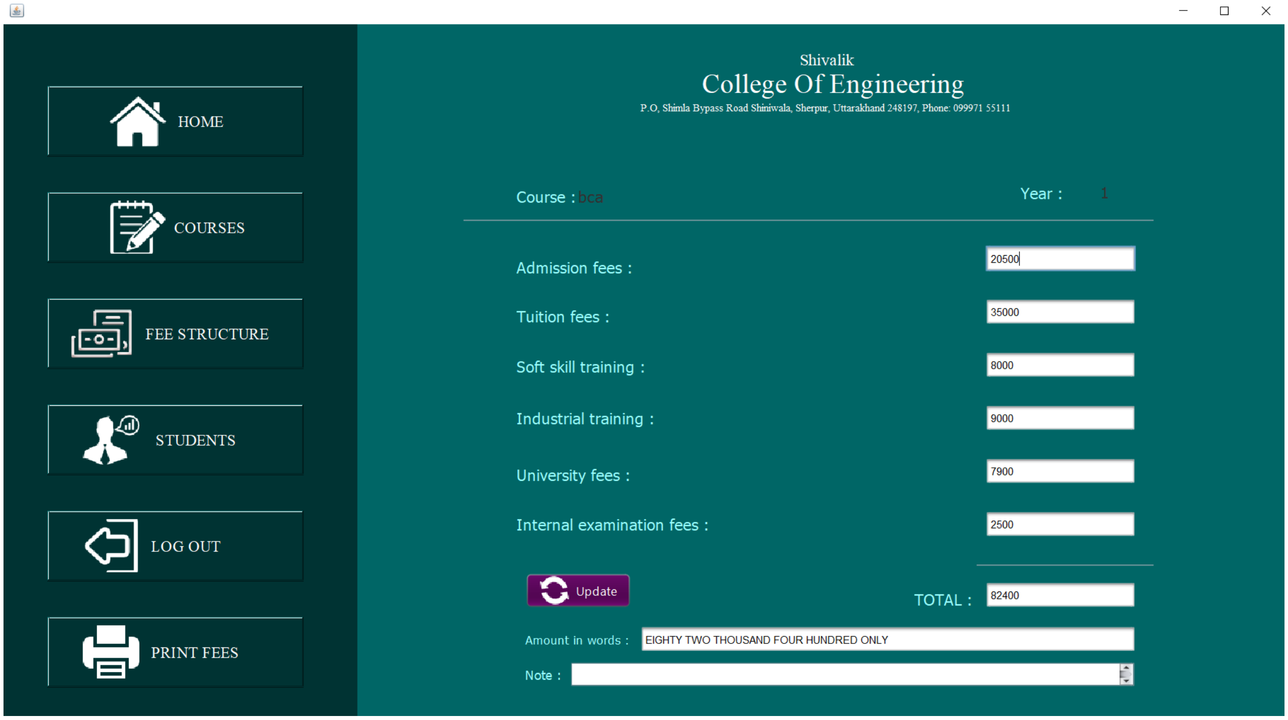


Fee Structure

Search :

Course	Admission fee	Tuition fee	Soft skill fee	Industrial fee	University fee	Internal fee	Year	Total	Dur
bca	20500	35000	8000	9000	7900	2500	1	82400	3
bca	1400	35000	12000	18000	7900	2500	2	76800	3
bca	500	35000	18000	12000	7900	2400	3	75800	3

Fig-8 (View Fee Structure)



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Course : bca

Year : 1

Admission fees : 20500

Tuition fees : 35000

Soft skill training : 8000

Industrial training : 9000

University fees : 7900

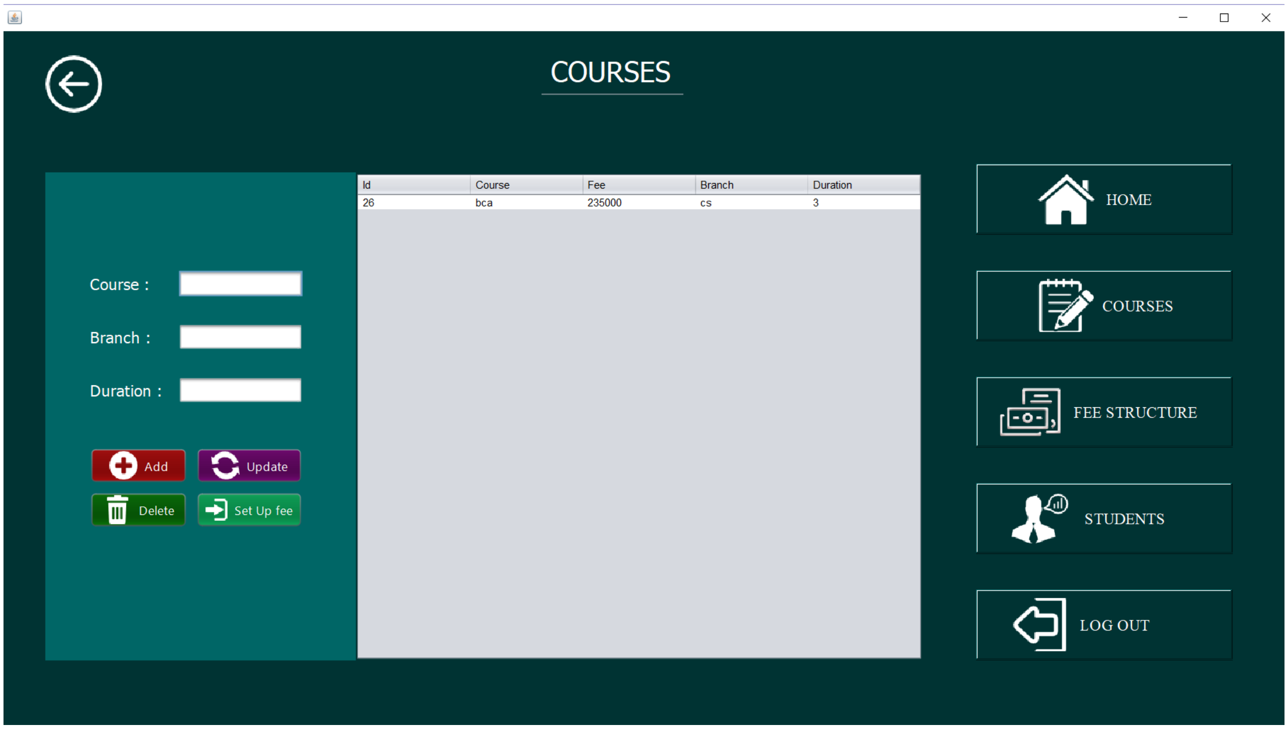
Internal examination fees : 2500

TOTAL : 82400

Amount in words : EIGHTY TWO THOUSAND FOUR HUNDRED ONLY

Note :

Fig-9 (Fee Update)



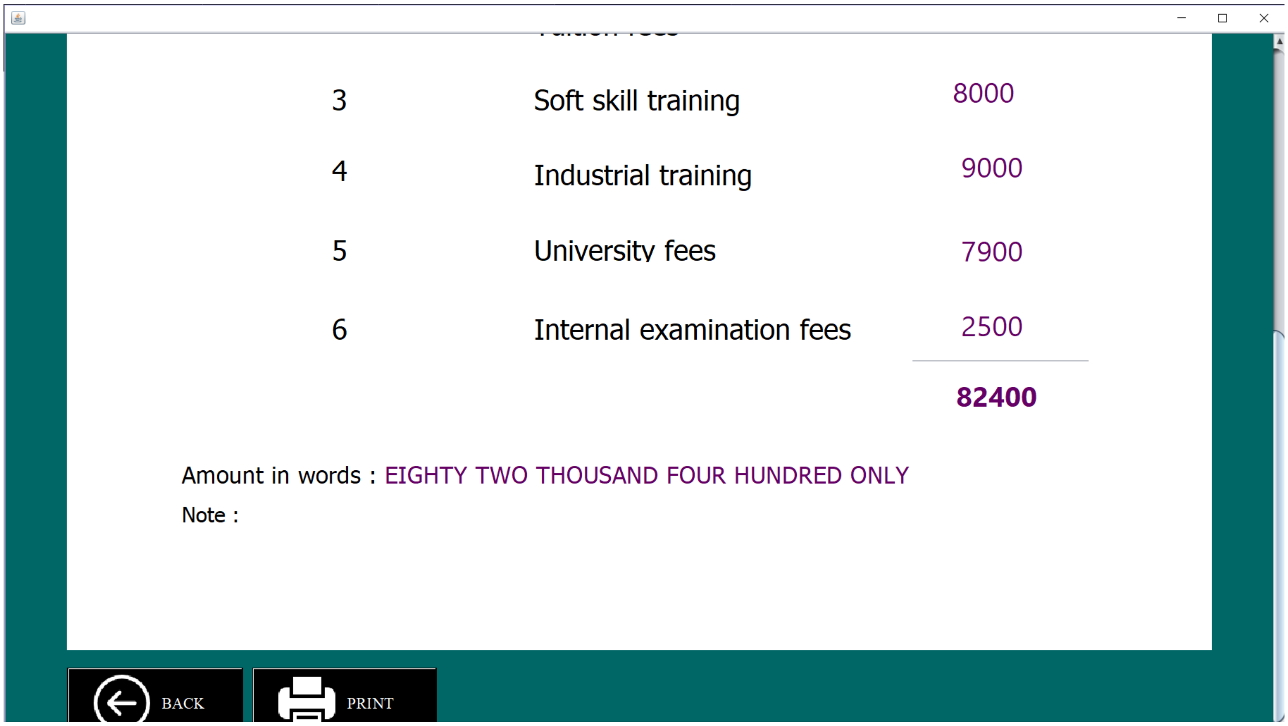
Id	Course	Fee	Branch	Duration
26	bca	235000	cs	3

Course :

Branch :

Duration :

Fig-10 (Courses)

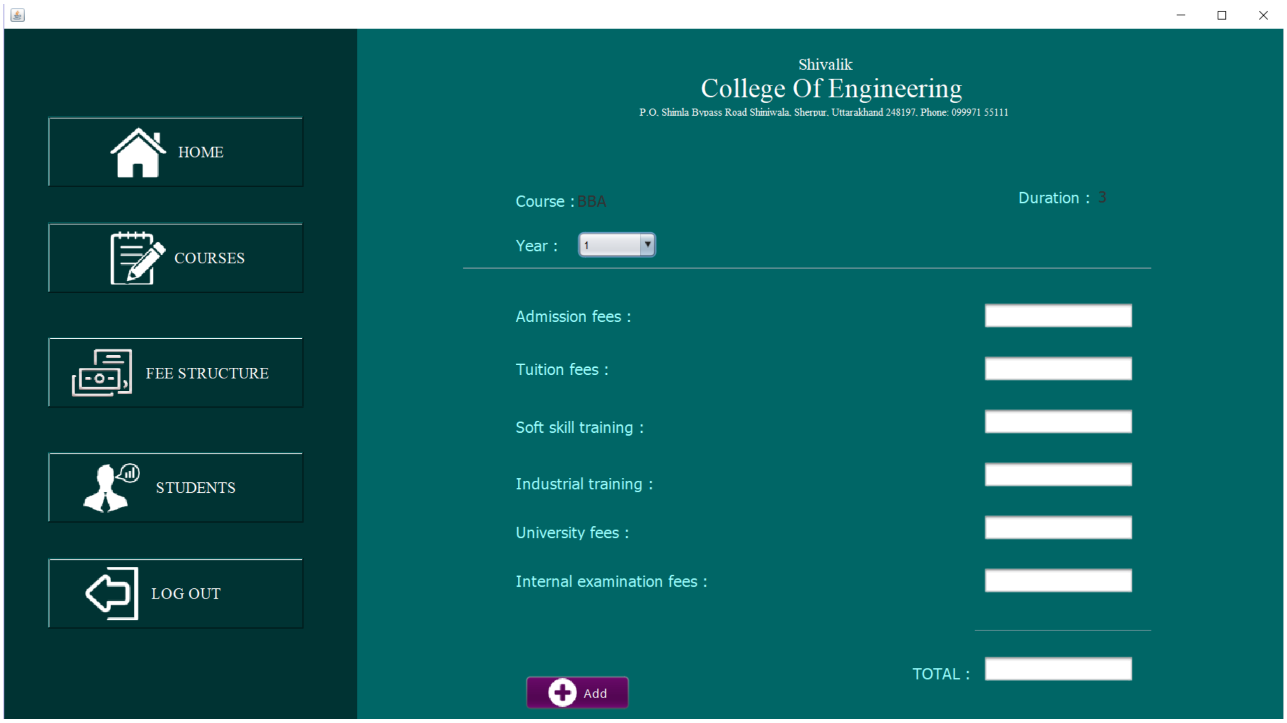


3	Soft skill training	8000
4	Industrial training	9000
5	University fees	7900
6	Internal examination fees	2500
		82400

Amount in words : EIGHTY TWO THOUSAND FOUR HUNDRED ONLY

Note :

Fig-11 (Fee Structure slip)



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Course : BBA

Duration : 3

Year : 1

Admission fees :

Tuition fees :

Soft skill training :

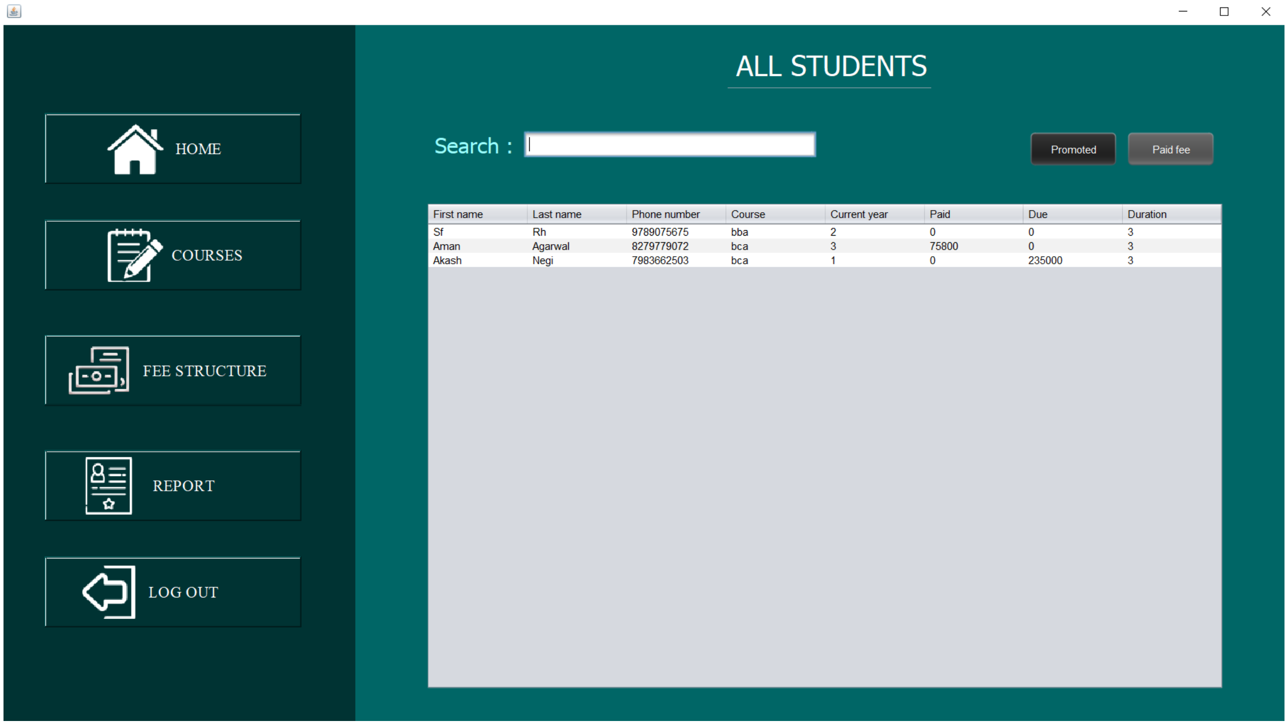
Industrial training :

University fees :

Internal examination fees :

TOTAL :

Fig-12 (Fee Collect)

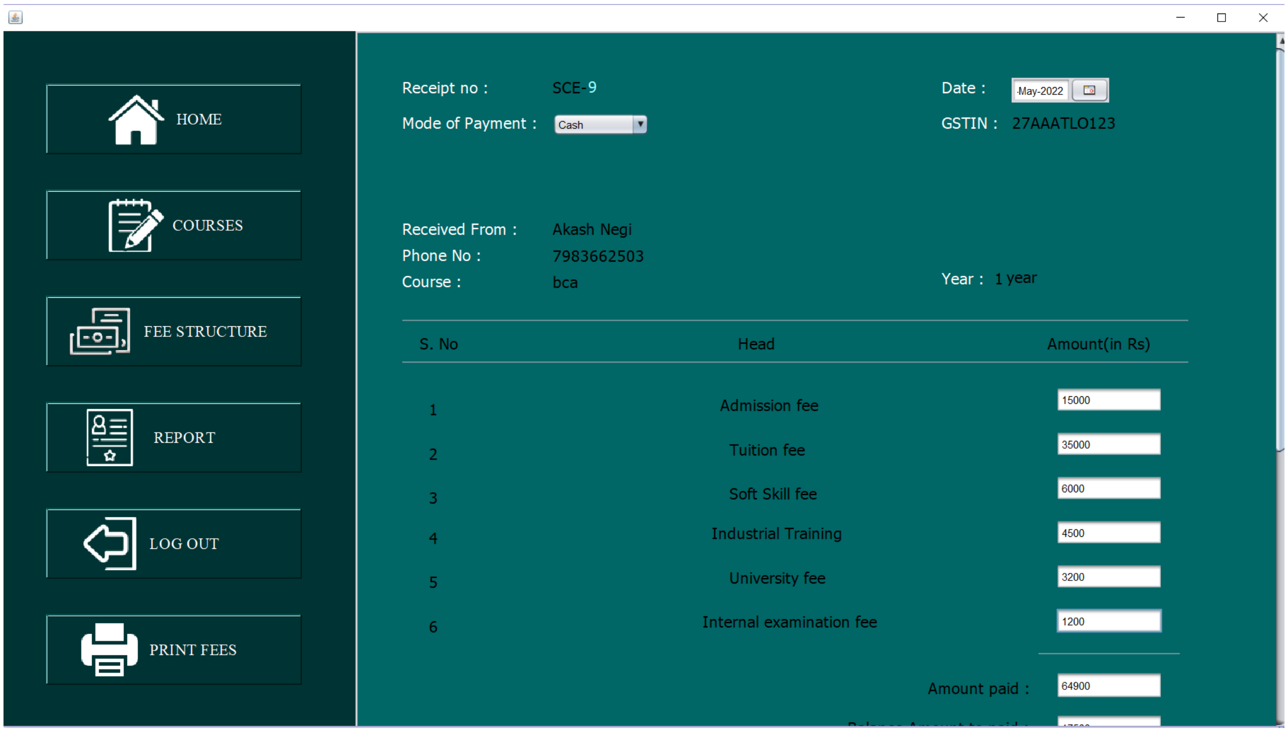


ALL STUDENTS

Search :

First name	Last name	Phone number	Course	Current year	Paid	Due	Duration
Sf	Rh	9789075675	bba	2	0	0	3
Aman	Agarwal	8279779072	bca	3	75800	0	3
Akash	Negi	7983662503	bca	1	0	235000	3

Fig-13(student fee module)



Receipt no : SCE-9

Date : May-2022

Mode of Payment : Cash

GSTIN : 27AAATLO123

Received From : Akash Negi

Phone No : 7983662503

Course : bca

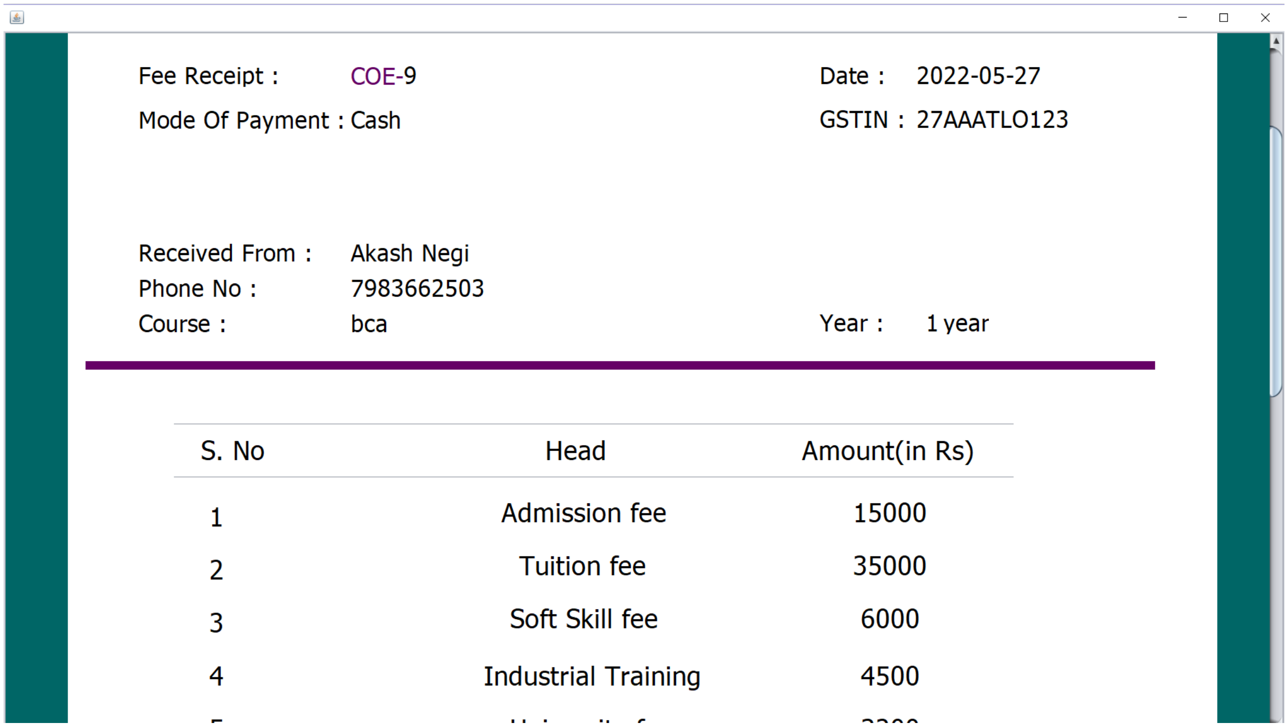
Year : 1 year

S. No	Head	Amount(in Rs)
1	Admission fee	15000
2	Tuition fee	35000
3	Soft Skill fee	6000
4	Industrial Training	4500
5	University fee	3200
6	Internal examination fee	1200

Amount paid : 64900

Balance Amount to paid : 17500

Fig-14 (collect fee)



Fee Receipt : COE-9

Date : 2022-05-27

Mode Of Payment : Cash

GSTIN : 27AAATLO123

Received From : Akash Negi

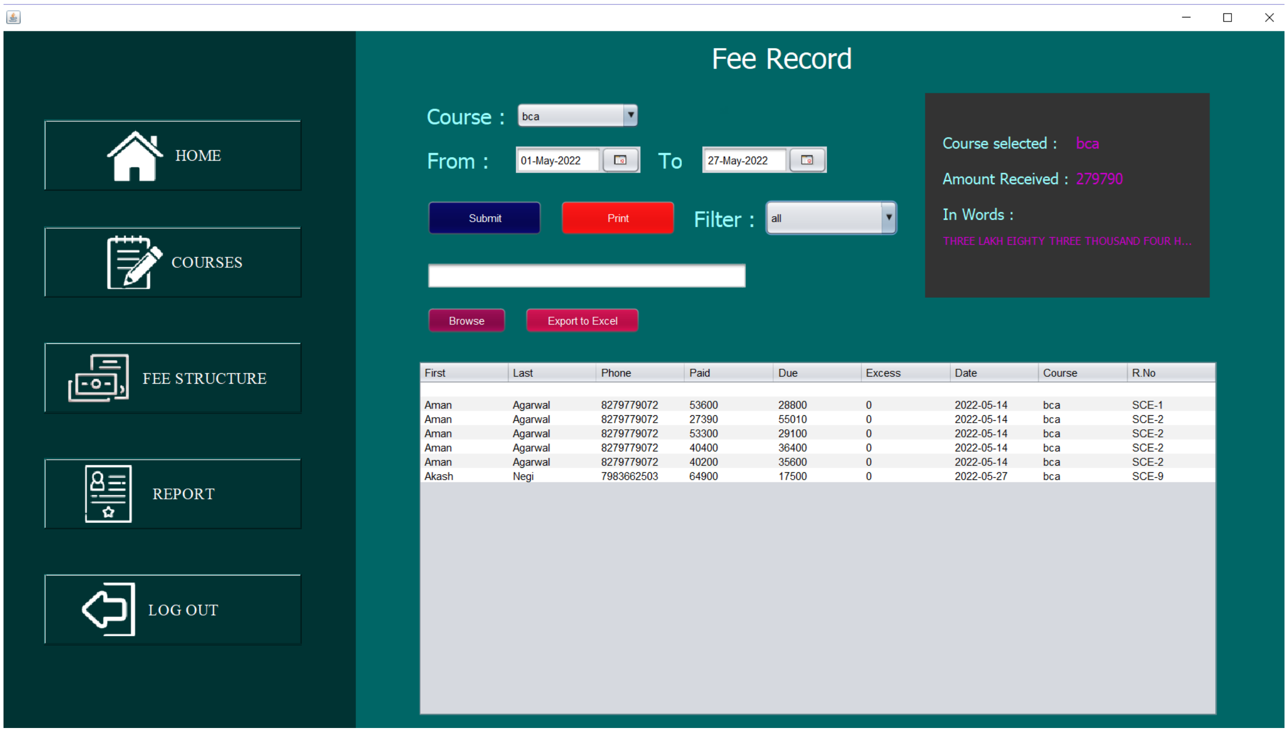
Phone No : 7983662503

Course : bca

Year : 1 year

S. No	Head	Amount(in Rs)
1	Admission fee	15000
2	Tuition fee	35000
3	Soft Skill fee	6000
4	Industrial Training	4500
5	University fee	3200

Fig-15 (fee slip)



Fee Record

Course : bca

From : 01-May-2022 To 27-May-2022

Filter : all

Course selected : bca

Amount Received : 279790

In Words :

THREE LAKH EIGHTY THREE THOUSAND FOUR H...

First	Last	Phone	Paid	Due	Excess	Date	Course	R.No
Aman	Agarwal	8279779072	53600	28800	0	2022-05-14	bca	SCE-1
Aman	Agarwal	8279779072	27390	55010	0	2022-05-14	bca	SCE-2
Aman	Agarwal	8279779072	53300	29100	0	2022-05-14	bca	SCE-2
Aman	Agarwal	8279779072	40400	36400	0	2022-05-14	bca	SCE-2
Aman	Agarwal	8279779072	40200	35600	0	2022-05-14	bca	SCE-2
Akash	Negi	7983662503	64900	17500	0	2022-05-27	bca	SCE-9

Fig-16 (fee report)

CHAPTER-12

CONCLUSSION

Our project is only a humble venture to satisfy the needs to manage their project work. Several user friendly coding have also adopted . This package shall prove to be a powerful package in satisfying all the requirements of the School or college. The objective of software planning is to provide aframework that enables the manager to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses.

At the end it is concluded that we have made effort on following points..

- A description of the background and context of the project and its relation to work already done in the area.
- Made statement of the aims and objective of the project.
- The description of Purpose, Scope, and applicability
- We define the problem on which we are working in the project.
- We describe the requirements specifications of the system and the actions that can be done on these things.
- We understand the problem domain and produced a model of the system, which describe operations that can be performed on the system.
- We designed user interface and security issues related to the system.

12.1 FUTURE SCOPE

In a nutshell, it can be suumarized that the future scope of the project circles around maintaining information regarding:

- We can add online payment options in future.
- We can give more advance software for Student Fees Management System including more facilities.
- Create the master and slave database structure to reduce the overload of the database queries.
- Implement the backup mechanism for tacking backup of codebase and database on regular basis.
- Integrate multiple load balancers to distribute the loads of the system.

The above mentioned points are the enhancements which can be done to increase the applicability and usage of this project. Here we can maintain the records of students and course. also, it can be seen that now-a-days the players are versatile, i.e. so there is a scope for introducing a method to maintain the Student Fees Mangement System. Enhancement can be done to maintain all the Student, Course, Semester, Fees.

We have left all the options open so that if there is any other future requirement in the system by the user for the enhancement of the system then it is possible to implement them. In the last we would like to thanks all the persons involved in the development of the system directly or indirectly. We hope that the project will serve its purpose for which it is develop there by understanding success of process.

12.2 LIMITATIONS

Although I have put my best efforts to make the software flexible, easy to operate but limitations cannot be ruled out even by me. Though the software presents a broad range of options to its users some intricate options could not be covered into it; partly because of logistic and partly due to lack of sophistication. Paucity of time was also major contraints, thsu it was not possible to make the software foolproof and dynamic. Lack of time also compelled me to ignore some part such as storing old results of the candidate etc.

Considerable efforts have made the software easy to operate even for the people not relatable to the field of computers but it is acknowledged that a layman may find it a bit problematic at the first instance. The user is provided help at each step for his convenience in working with the software.

List of limitations which is available in the Student Fees Management System:

- Online payment option is unavailable for now.
- Excel export has not been developed for Course due to some criticality.
- Offline reports of students, fees, course cannot be generated due to batch mode execution.

CHAPTER 13

REFRENCES

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- https://stackoverflow.com
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