



**RAJALAKSHMI  
ENGINEERING COLLEGE**

An AUTONOMOUS Institution  
Affiliated to ANNA UNIVERSITY, Chennai

**CS23333 OBJECT ORIENTED PROGRAMMING  
USING JAVA LAB**

**UNIVERSITY MANAGEMENT SYSTEM  
A MINI PROJECT REPORT**

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RAJALAKSHMI ENGINEERING COLLEGE (AUTONOMOUS) THANDALAM  
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## **BONAFIDE CERTIFICATE**

Certified that this project report “**UNIVERSITY MANAGEMENT SYSTEM** ” is the Bonafide work of “**MAHESH KUMAR J R (231501092), KARTICKEEYAAN M (231501074), PRAGADEESH KUMAR D (231501117), NITHESH KUMAR S(231501114)** ” who carried out the project work under my supervision.

Submitted for the Practical Examination held on \_\_\_\_\_

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# ABSTRACT

This paper outlines the design, implementation, and functionality of a **University Management System (UMS)**, a web-based application developed to automate and optimize various academic and administrative operations in a university setting. Leveraging the robustness of a **MySQL database**, the system effectively organizes and manages key data such as student information, faculty profiles, course registrations, and academic schedules.

The application is built using **Java** and features an intuitive user interface that facilitates efficient interactions among students, faculty, and administrators. Core features of the system include:

- **User Account Management:** Secure login and sign-up functionality with unique credentials for all users.
- **Course Enrollment:** Students can browse and register for courses, while administrators manage course offerings and faculty assignments.
- **Academic Records:** Updating and maintaining grades, attendance, and other academic details for students.
- **Schedule Management:** Organizing class schedules, exam timetables, and faculty availability to ensure smooth academic operations.

The UMS aims to reduce manual administrative effort, streamline communication, and provide actionable insights through data-driven dashboards. By automating repetitive tasks and improving operational efficiency, the system addresses challenges such as data inconsistency, time inefficiencies, and user dissatisfaction. Its scalable and modular design ensures adaptability to different university requirements, fostering enhanced collaboration and productivity across the institution.

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# CHAPTER 1

## 1.1 INTRODUCTION

The University Management System is an innovative platform designed to provide students, faculty, and administrators with a seamless experience in managing academic and administrative processes. With the growing reliance on digital platforms in education, this system streamlines activities such as student registrations, course enrollments, and schedule management, all within a user-friendly interface.

This project focuses on enhancing the convenience and accessibility of university services for all stakeholders, enabling them to efficiently manage academic operations through the following features:

- **User Registration and Login:**

Students, faculty, and administrators can register securely and log in to access personalized features, including viewing schedules, academic records, and notifications.

- **Dynamic Course Search:**

Users can explore available courses and schedules, filtering results by department, semester, and faculty.

- **Interactive Enrollment Management:**

Students can view course availability in real time, select their preferred courses, and add them to their schedule. The system ensures real-time updates to avoid conflicts.

- **Customizable Profile Management:**

Users can update their personal details, academic preferences, and communication settings to ensure a tailored experience.

- **Academic and Administrative Notifications:**

Users receive timely updates about class schedules, deadlines, and institutional announcements. Automated email notifications provide updates on:

- Successful account registration.
- Enrollment confirmations.
- Schedule changes or faculty adjustments.
- Event reminders and other institutional updates.

By digitizing traditional university processes, the University Management System offers unparalleled convenience, saving time and effort for users. This system emphasizes reliability, real-time updates, and ease of use, making it an essential tool for modernizing higher education.

## **1.2 OBJECTIVE**

The main objective of the University Management System is to manage the details of Students, Faculty, Courses, and Schedules. It centralizes all critical information and automates tasks like registrations, course assignments, and schedule updates effectively using a MySQL database. The project is entirely user-focused, enabling stakeholders to access the system by signing up and logging in.

## 1.3 MODULES

### 1. Sign Up

- The AddFaculty and AddStudent classes in the provided code implement a Sign-Up mechanism for faculty and students, respectively.
- Both forms collect essential details such as:
  - Name
  - Father's Name
  - Date of Birth
  - Address
  - Contact Information (Phone, Email)
  - Identification (Employee ID/Roll Number, Aadhar Number)
  - Educational Qualifications (Class X and XII Marks)
  - Course and Department
- **A random unique ID is generated for both faculty and students (e.g., empText for faculty and empText for students).**
- **The collected data is inserted into a database using SQL commands (INSERT INTO statements) executed via the Conn class.**

### 2. Login

- While the provided code does not include specific implementation for Login, it complements the Sign-Up process.

- Typically, login functionality would verify the credentials of users stored in the database during the sign-up process.
- Users like faculty and students would enter their unique IDs (e.g., Employee ID or Roll Number) and passwords to gain access.

### **3. Course Management**

- The dropdown menus in the AddFaculty and AddStudent forms (e.g., courseBox and departmentBox) reflect course management by allowing users to select:
  - Courses: B.Tech, BBA, BCA, etc.
  - Departments/Branches: Computer Science, Electronics, Mechanical, etc.
- This facilitates assigning faculty members and students to appropriate courses and departments.
- The course and department details are stored in the database, allowing for efficient course management.

### **4. Student and Faculty Profiles**

- The profiles for students and faculty members are managed through the forms in AddStudent and AddFaculty:
  - Students:
    - Roll Number as a unique identifier



- Personal and academic details
- Faculty:
  - Employee ID as a unique identifier
  - Personal and professional details
- The information stored in the database can later be retrieved and displayed as profiles.

## 5. Updating Academic Records

- Although the code does not explicitly handle academic record updates, the structure supports adding records to the database:
  - For students, records like Class X and XII percentages are stored.
  - For faculty, qualifications and department information are captured.
- Extending this, academic records like grades, attendance, or performance can be updated using a similar approach:
  - Fetch the record using unique IDs.
  - Update fields in the database using SQL UPDATE statements.

This maintains the structure, features, and formatting of the original content but adapts it for a University Management System context.

## **CHAPTER 2**

### **2.1 SOFTWARE DESCRIPTION**

#### **Visual studio Code**

Visual Studio Code combines the simplicity of a source code editor with powerful developer tooling, like IntelliSense code completion and debugging. First and foremost, it is an editor that gets out of your way. The delightfully frictionless edit-build-debug cycle means less time fiddling with your environment, and more time executing on your ideas.

### **2.2 LANGUAGES**

#### **2.2.1 JAVA**

Java is a set of computer software and specifications that provides a software platform for developing application software and deploying it in a cross-platform computing environment. Java is used in a wide variety of computing platforms from embedded devices and mobile phones to enterprise servers and supercomputers. Java applets, which are less common than standalone Java applications, were commonly run in secure, sandboxed environments to provide many features of native applications through being embedded in HTML pages.

#### **2.2.2 MySQL**

Many of the world's largest and fastest-growing organizations including Facebook, Google, Adobe, Alcatel Lucent and Zappos rely on MySQL to save time and money powering their high-volume Web sites, business-critical systems and packaged software. Since then, the performance & scalability, reliability, and ease of use of the world's most popular open source database, characteristics that made MySQL the #1 choice for web applications, have relentlessly been improved.

## **CHAPTER 3**

### **3.1 REQUIREMENTS SPECIFICATION**

The requirements specification defines the functional and non-functional requirements necessary for the successful development and implementation of the University Management System (UMS). These requirements ensure that the system meets the needs of all stakeholders, including students, faculty, and administrators.

#### **3.1.1 Functional Requirements**

Functional requirements outline the specific features and functionalities that the system must provide:

##### **1. User Management**

- Account creation and secure login for students, faculty, and administrators.
- Role-based access control, ensuring appropriate permissions for each user type.

##### **2. Course Management**

- Admin functionality to add, update, or delete courses.
- Students can enroll in courses and view their current and past enrollments.
- Faculty can view and manage assigned courses.

##### **3. Academic Records Management**

- Updating and maintaining student grades, attendance, and other academic details.
- Generating reports for academic performance and attendance tracking.

##### **4. Schedule Management**

- Creating and updating class and exam schedules.
- Viewing faculty availability and room allocations.

## **5. Notifications and Alerts**

- Sending alerts to users regarding deadlines, announcements, or schedule changes.

## **6. Data Management**

- Secure storage of user and institutional data in the MySQL database.
- Backup and recovery mechanisms for critical data.

### **3.1.2 Non-Functional Requirements**

Non-functional requirements focus on the quality attributes of the system, including performance, usability, and security:

#### **1. Performance**

- The system must handle simultaneous access by multiple users without significant delays.
- Database queries should execute within a few seconds for optimal user experience.

#### **2. Scalability**

- The system must be scalable to accommodate increasing user loads, additional courses, and growing data volume.

#### **3. Usability**

- The user interface should be intuitive, with clear navigation for all user types.
- The system must support accessibility features to accommodate diverse user needs.

#### **4. Security**

- Secure login mechanisms with encrypted passwords.
- Data encryption to protect sensitive information such as academic records and personal details.
- Role-based access to prevent unauthorized actions.

## **5. Reliability and Availability**

- The system must provide 99.9% uptime to ensure availability during academic and administrative operations.
- Regular maintenance schedules should minimize downtime.

## **6. Maintainability**

- Modular design to facilitate future updates or integration of additional features.
- Comprehensive documentation for developers and administrators.

### **3.1.3 Stakeholder Requirements**

#### **1. Students**

- Easy course enrollment and access to academic records.
- Notifications for upcoming deadlines and schedule changes.

#### **2. Faculty**

- Tools for managing assigned courses and viewing student progress.
- Simplified schedule management for classes and exams.

#### **3. Administrators**

- Centralized control over courses, faculty assignments, and institutional data.
- Reports for analyzing academic and administrative efficiency.

By addressing these requirements, the University Management System aims to deliver a robust, user-friendly, and secure platform to support efficient university operations.

## CHAPTER 4

### PROGRAM CODE:

Impl code :

```
<?xml version="1.0" encoding="UTF-8"?>
<module type="JAVA_MODULE" version="4">
  <component name="NewModuleRootManager" inherit-compiler-output="true">
    <exclude-output />
    <content url="file://$MODULE_DIR$">
      <sourceFolder url="file://$MODULE_DIR$/src" isTestSource="false" />
    </content>
    <orderEntry type="inheritedJdk" />
    <orderEntry type="sourceFolder" forTests="false" />
    <orderEntry type="library" name="jcalendar-1.4" level="project" />
    <orderEntry type="library" name="mysql-connector-java-8.0.28"
level="project" />
    <orderEntry type="library" name="rs2xml" level="project" />
  </component>
</module>
```

Java files:

About.java :

```
package university.management.system;
```

```

import javax.swing.*;
import java.awt.*;

public class About extends JFrame {
    About(){

        ImageIcon i1 = new
        ImageIcon(ClassLoader.getResource("icon/about.png"));

        Image i2 = i1.getImage().getScaledInstance(300, 200,
        Image.SCALE_DEFAULT);

        ImageIcon i3 = new ImageIcon(i2);
        JLabel img = new JLabel(i3);
        img.setBounds(350,0,300,200);
        add(img);

        JLabel heading = new JLabel("<html> A.V</br>Technical
        University</html>");
        heading.setBounds(70,20,300,130);
        heading.setFont(new Font("Tahoma", Font.BOLD,30));
        add(heading);

        JLabel name = new JLabel("Techcoder A.V");
        name.setBounds(60,260,550,40);
        name.setFont(new Font("Tahoma", Font.BOLD,30));
        add(name);
    }
}

```

```

JLabel contact = new JLabel("techcoderav@gmail.com");
contact.setBounds(70,340,550,40);
contact.setFont(new Font("Tahoma", Font.BOLD,30));
add(contact);

setSize(700,500);
setLocation(400,150);
getContentPane().setBackground(new Color(252,228,210));
setLayout(null);
setVisible(true);

}

public static void main(String[] args) {
    new About();
}
}

```

Addfaculty.java :

```

package university.management.system;

import com.toedter.calendar.JDateChooser;

import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;

```



```

import java.awt.event.ActionListener;
import java.util.Random;

public class AddFaculty extends JFrame implements ActionListener {

    JTextField
    textName,textfather,textAddress,textPhone,textemail,textM10,textM12,textAadhar;
    JLabel empText;
    JDateChooser cdob;
    JComboBox courseBox, departmentBox;
    JButton submit, cancel;

    Random ran = new Random();
    long f4 = Math.abs((ran.nextLong() % 9000L) + 1000L);
    AddFaculty(){

        getContentPane().setBackground(new Color(166,164,252));

        JLabel heading = new JLabel("New Teacher Details");
        heading.setBounds(310,30,500,50);
        heading.setFont(new Font("serif",Font.BOLD,30));
        add(heading);

        JLabel name = new JLabel("Name");
        name.setBounds(50,150,100,30);
        name.setFont(new Font("serif",Font.BOLD,20));
    }
}

```

```
add(name);
```

```
textName = new JTextField();
```

```
textName.setBounds(200,150,150,30);
```

```
add(textName);
```

```
JLabel fname = new JLabel("Father Name");
```

```
fname.setBounds(400,150,200,30);
```

```
fname.setFont(new Font("serif",Font.BOLD,20));
```

```
add(fname);
```

```
textfather = new JTextField();
```

```
textfather.setBounds(600,150,150,30);
```

```
add(textfather);
```

```
JLabel empID = new JLabel("Employee ID");
```

```
empID.setBounds(50,200,200,30);
```

```
empID.setFont(new Font("serif",Font.BOLD,20));
```

```
add(empID);
```

```
empText = new JLabel("1409"+f4);
```

```
empText.setBounds(200,200,150,30);
```

```
empText.setFont(new Font("serif",Font.BOLD,20));
```

```
add(empText);
```

```
JLabel dob = new JLabel("Date of Birth");  
dob.setBounds(400,200,200,30);  
dob.setFont(new Font("serif",Font.BOLD,20));  
add(dob);
```

```
cdob = new JDateChooser();  
cdob.setBounds(600,200,150,30);  
add(cdob);
```

```
JLabel address = new JLabel("Address");  
address.setBounds(50,250,200,30);  
address.setFont(new Font("serif",Font.BOLD,20));  
add(address);
```

```
textAddress = new JTextField();  
textAddress.setBounds(200,250,150,30);  
add(textAddress);
```

```
JLabel phone = new JLabel("Phone");  
phone.setBounds(400,250,200,30);  
phone.setFont(new Font("serif",Font.BOLD,20));  
add(phone);
```

```
textPhone = new JTextField();  
textPhone.setBounds(600,250,150,30);
```

```
add(textPhone);
```

```
JLabel email = new JLabel("Email");  
email.setBounds(50,300,200,30);  
email.setFont(new Font("serif",Font.BOLD,20));  
add(email);
```

```
textemail = new JTextField();  
textemail.setBounds(200,300,150,30);  
add(textemail);
```

```
JLabel M10 = new JLabel("Class X (%)");  
M10.setBounds(400,300,200,30);  
M10.setFont(new Font("serif",Font.BOLD,20));  
add(M10);
```

```
textM10 = new JTextField();  
textM10.setBounds(600,300,150,30);  
add(textM10);
```

```
JLabel M12 = new JLabel("Class XII (%)");  
M12.setBounds(50,350,200,30);  
M12.setFont(new Font("serif",Font.BOLD,20));  
add(M12);
```

```
textM12 = new JTextField();  
textM12.setBounds(200,350,150,30);  
add(textM12);
```

```
JLabel AadharNo = new JLabel("Aadhar Number");  
AadharNo.setBounds(400,350,200,30);  
AadharNo.setFont(new Font("serif",Font.BOLD,20));  
add(AadharNo);
```

```
textAadhar = new JTextField();  
textAadhar.setBounds(600,350,150,30);  
add(textAadhar);
```

```
JLabel Qualification = new JLabel("Qualification");  
Qualification.setBounds(50,400,200,30);  
Qualification.setFont(new Font("serif",Font.BOLD,20));  
add(Qualification);
```

```
String course[] =  
{ "B.Tech", "BBA", "BCA", "BSC", "MSC", "MBA", "MCA", "MCom", "MA", "BA" };  
courseBox = new JComboBox(course);  
courseBox.setBounds(200,400,150,30);  
courseBox.setBackground(Color.WHITE);  
add(courseBox);
```

```
JLabel Department = new JLabel("Department");
```

```
Department.setBounds(400,400,200,30);  
Department.setFont(new Font("serif",Font.BOLD,20));  
add(Department);
```

```
String department[] = {"Computer  
Science","Electronics","Mechanical","Civil","IT"};  
departmentBox = new JComboBox(department);  
departmentBox.setBounds(600,400,150,30);  
departmentBox.setBackground(Color.WHITE);  
add(departmentBox);
```

```
submit = new JButton("Submit");  
submit.setBounds(250,550,120,30);  
submit.setBackground(Color.black);  
submit.setForeground(Color.white);  
submit.addActionListener(this);  
add(submit);
```

```
cancel = new JButton("Cancel");  
cancel.setBounds(450,550,120,30);  
cancel.setBackground(Color.black);  
cancel.setForeground(Color.white);  
cancel.addActionListener(this);  
add(cancel);
```

```
setSize(900,700);
```

```
        setLocation(350,50);
        setLayout(null);
        setVisible(true);
    }
```

@Override

```
public void actionPerformed(ActionEvent e) {
    if (e.getSource() == submit){
        String name = textName.getText();
        String fname = textfather.getText();
        String empid = empText.getText();
        String dob = ((JTextField)
cdob.getDateEditor().getUiComponent()).getText();
        String address = textAddress.getText();
        String phone = textPhone.getText();
        String email = textemail.getText();
        String x = textM10.getText();
        String xii = textM12.getText();
        String aadhar = textAadhar.getText();
        String course = (String) courseBox.getSelectedItem();
        String department = (String) departmentBox.getSelectedItem();
        try{
            String q = "insert into teacher values '"+name+"',
 '"+fname+"', '"+empid+"', '"+dob+"', '"+address+"', '"+phone+"', '"+email+"', '"+x+"', '"+
+xii+"', '"+aadhar+"', '"+course+"', '"+department+'"");
            Conn c =new Conn();
```

```

        c.statement.executeUpdate(q);
        JOptionPane.showMessageDialog(null,"Details Inserted");
        setVisible(false);
    } catch (Exception E){
        E.printStackTrace();
    }
} else {
    setVisible(false);
}
}

```

```

public static void main(String[] args) {
    new AddFaculty();
}
}

```

Addstudent.java

```

package university.management.system;

```

```

import com.toedter.calendar.JDateChooser;

```

```

import javax.swing.*;

```

```

import java.awt.*;

```

```

import java.awt.event.ActionEvent;

```

```

import java.awt.event.ActionListener;

```



```

import java.util.Random;

public class AddStudent extends JFrame implements ActionListener {
    JTextField
    textName,textfather,textAddress,textPhone,textemail,textM10,textM12,textAadhar;

    JLabel empText;

    JDateChooser cdob;

    JComboBox courseBox, departmentBox;

    JButton submit, cancel;

    Random ran = new Random();

    long f4 = Math.abs((ran.nextLong() % 9000L) + 1000L);

    AddStudent(){
        getContentPane().setBackground(new Color(128,176,255));

        JLabel heading = new JLabel("New Teacher Details");
        heading.setBounds(310,30,500,50);
        heading.setFont(new Font("serif",Font.BOLD,30));
        add(heading);

        JLabel name = new JLabel("Name");
        name.setBounds(50,150,100,30);
        name.setFont(new Font("serif",Font.BOLD,20));
        add(name);
    }
}

```

```
textName = new JTextField();  
textName.setBounds(200,150,150,30);  
add(textName);
```

```
JLabel fname = new JLabel("Father Name");  
fname.setBounds(400,150,200,30);  
fname.setFont(new Font("serif",Font.BOLD,20));  
add(fname);
```

```
textfather = new JTextField();  
textfather.setBounds(600,150,150,30);  
add(textfather);
```

```
JLabel empID = new JLabel("Roll Number");  
empID.setBounds(50,200,200,30);  
empID.setFont(new Font("serif",Font.BOLD,20));  
add(empID);
```

```
empText = new JLabel("1409"+f4);  
empText.setBounds(200,200,150,30);  
empText.setFont(new Font("serif",Font.BOLD,20));  
add(empText);
```

```
JLabel dob = new JLabel("Date of Birth");  
dob.setBounds(400,200,200,30);
```

```
dob.setFont(new Font("serif",Font.BOLD,20));  
add(dob);
```

```
cdob = new JDateChooser();  
cdob.setBounds(600,200,150,30);  
add(cdob);
```

```
JLabel address = new JLabel("Address");  
address.setBounds(50,250,200,30);  
address.setFont(new Font("serif",Font.BOLD,20));  
add(address);
```

```
textAddress = new JTextField();  
textAddress.setBounds(200,250,150,30);  
add(textAddress);
```

```
JLabel phone = new JLabel("Phone");  
phone.setBounds(400,250,200,30);  
phone.setFont(new Font("serif",Font.BOLD,20));  
add(phone);
```

```
textPhone = new JTextField();  
textPhone.setBounds(600,250,150,30);  
add(textPhone);
```

```
JLabel email = new JLabel("Email");  
email.setBounds(50,300,200,30);  
email.setFont(new Font("serif",Font.BOLD,20));  
add(email);
```

```
textemail = new JTextField();  
textemail.setBounds(200,300,150,30);  
add(textemail);
```

```
JLabel M10 = new JLabel("Class X (%)");  
M10.setBounds(400,300,200,30);  
M10.setFont(new Font("serif",Font.BOLD,20));  
add(M10);
```

```
textM10 = new JTextField();  
textM10.setBounds(600,300,150,30);  
add(textM10);
```

```
JLabel M12 = new JLabel("Class XII (%)");  
M12.setBounds(50,350,200,30);  
M12.setFont(new Font("serif",Font.BOLD,20));  
add(M12);
```

```
textM12 = new JTextField();  
textM12.setBounds(200,350,150,30);
```

```
add(textM12);
```

```
JLabel AadharNo = new JLabel("Aadhar Number");  
AadharNo.setBounds(400,350,200,30);  
AadharNo.setFont(new Font("serif",Font.BOLD,20));  
add(AadharNo);
```

```
textAadhar = new JTextField();  
textAadhar.setBounds(600,350,150,30);  
add(textAadhar);
```

```
JLabel Qualification = new JLabel("Course");  
Qualification.setBounds(50,400,200,30);  
Qualification.setFont(new Font("serif",Font.BOLD,20));  
add(Qualification);
```

```
String course[] =  
{ "B.Tech", "BBA", "BCA", "BSC", "MSC", "MBA", "MCA", "MCom", "MA", "BA" };  
courseBox = new JComboBox(course);  
courseBox.setBounds(200,400,150,30);  
courseBox.setBackground(Color.WHITE);  
add(courseBox);
```

```
JLabel Department = new JLabel("Branch");  
Department.setBounds(400,400,200,30);  
Department.setFont(new Font("serif",Font.BOLD,20));
```

```
add(Department);
```

```
String department[] = {"Computer  
Science","Electronics","Mechanical","Civil","IT"};  
departmentBox = new JComboBox(department);  
departmentBox.setBounds(600,400,150,30);  
departmentBox.setBackground(Color.WHITE);  
add(departmentBox);
```

```
submit = new JButton("Submit");  
submit.setBounds(250,550,120,30);  
submit.setBackground(Color.black);  
submit.setForeground(Color.white);  
submit.addActionListener(this);  
add(submit);
```

```
cancel = new JButton("Cancel");  
cancel.setBounds(450,550,120,30);  
cancel.setBackground(Color.black);  
cancel.setForeground(Color.white);  
cancel.addActionListener(this);  
add(cancel);
```

```
setSize(900,700);  
setLocation(350,50);  
setLayout(null);
```

```
setVisible(true);  
}
```

```
@Override
```

```
public void actionPerformed(ActionEvent e) {  
    if (e.getSource() == submit){  
        String name = textName.getText();  
        String fname = textfather.getText();  
        String empid = empText.getText();  
        String dob = ((JTextField)  
cdob.getDateEditor().getUiComponent()).getText();  
        String address = textAddress.getText();  
        String phone = textPhone.getText();  
        String email = textemail.getText();  
        String x = textM10.getText();  
        String xii = textM12.getText();  
        String aadhar = textAadhar.getText();  
        String course = (String) courseBox.getSelectedItem();  
        String department = (String) departmentBox.getSelectedItem();  
        try{  
            String q = "insert into student values('"+name+"',  
            '"+fname+"','"+empid+"','"+dob+"','"+address+"','"+phone+"','"+email+"','"+x+"',"  
            +xii+"','"+aadhar+"','"+course+"','"+department+"')";  
            Conn c =new Conn();  
            c.statement.executeUpdate(q);  
            JOptionPane.showMessageDialog(null,"Details Inserted");  
        }  
    }  
}
```

```
        setVisible(false);
    } catch (Exception E){
        E.printStackTrace();
    }
} else {
    setVisible(false);
}
}
```

```
public static void main(String[] args) {
    new AddStudent();
}
}
```

Conn.java

```
package university.management.system;
```

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.Statement;
```

```
public class Conn {
    Connection connection;
    Statement statement;
```



```

Conn(){
    try {
        Class.forName("com.mysql.cj.jdbc.Driver");

        connection =
DriverManager.getConnection("jdbc:mysql:///universitymanagement","root","7010
311401");

        statement = connection.createStatement();
    } catch (Exception e){
        e.printStackTrace();
    }
}
}

```

Entermarks.java

```
package university.management.system;
```

```
import javax.swing.*;
```

```
import java.awt.*;
```

```
import java.awt.event.ActionEvent;
```

```
import java.awt.event.ActionListener;
```

```
import java.sql.ResultSet;
```

```
public class EnterMarks extends JFrame implements ActionListener {
```

```
    Choice choicerollno;
```

```
    JComboBox comboBox;
```

```
    JTextField sub1, sub2, sub3, sub4, sub5, mrk1, mrk2, mrk3, mrk4, mrk5;
```

```

JButton submit, cancel;

EnterMarks(){

    getContentPane().setBackground(new Color(252,245,210));

    ImageIcon i1 = new
    ImageIcon(ClassLoader.getResource("icon/exam.png"));

    Image i2 =
    i1.getImage().getScaledInstance(400,300,Image.SCALE_DEFAULT);

    ImageIcon i3 = new ImageIcon(i2);

    JLabel img = new JLabel(i3);

    img.setBounds(500,40,400,300);

    add(img);

    JLabel heading = new JLabel("Enter Marks of Student");

    heading.setBounds(50,0,500,50);

    heading.setFont(new Font("Tahoma",Font.BOLD,20));

    add(heading);

    JLabel rollno = new JLabel("Select Roll Number");

    rollno.setBounds(50,70,150,20);

    add(rollno);

    choicerollno = new Choice();

    choicerollno.setBounds(200,70,150,20);

    add(choicerollno);

```

```
try {  
    Conn c = new Conn();  
    ResultSet resultSet = c.statement.executeQuery("select * from student");  
    while (resultSet.next()){  
        choicerollno.add(resultSet.getString("rollno"));  
    }  
} catch (Exception e) {  
    e.printStackTrace();  
}
```

```
JLabel sem = new JLabel("Select Semester");  
sem.setBounds(50,110,150,20);  
add(sem);
```

```
String semester[] = {"1st Semester","2st Semester","3st Semester","4st  
Semester","5st Semester","6st Semester","7st Semester","8st Semester"};  
comboBox = new JComboBox(semester);  
comboBox.setBounds(200,110,150,20);  
comboBox.setBackground(Color.WHITE);  
add(comboBox);
```

```
JLabel entersub = new JLabel("Enter Subject");  
entersub.setBounds(100,150,200,40);  
add(entersub);
```

```
JLabel entermarks = new JLabel("Enter Marks");  
entermarks.setBounds(320,150,200,40);  
add(entermarks);
```

```
sub1 = new JTextField();  
sub1.setBounds(50,200,200,20);  
add(sub1);
```

```
sub2 = new JTextField();  
sub2.setBounds(50,230,200,20);  
add(sub2);
```

```
sub3 = new JTextField();  
sub3.setBounds(50,260,200,20);  
add(sub3);
```

```
sub4 = new JTextField();  
sub4.setBounds(50,290,200,20);  
add(sub4);
```

```
sub5 = new JTextField();  
sub5.setBounds(50,320,200,20);  
add(sub5);
```

```
mrk1 = new JTextField();
```

```
mrk1.setBounds(250,200,200,20);  
add(mrk1);
```

```
mrk2 = new JTextField();  
mrk2.setBounds(250,230,200,20);  
add(mrk2);
```

```
mrk3 = new JTextField();  
mrk3.setBounds(250,260,200,20);  
add(mrk3);
```

```
mrk4 = new JTextField();  
mrk4.setBounds(250,290,200,20);  
add(mrk4);
```

```
mrk5 = new JTextField();  
mrk5.setBounds(250,320,200,20);  
add(mrk5);
```

```
submit = new JButton("Submit");  
submit.setBounds(70,360,150,25);  
submit.setBackground(Color.black);  
submit.setForeground(Color.WHITE);  
submit.addActionListener(this);  
add(submit);
```

```

cancel = new JButton("Cancel");
cancel.setBounds(280,360,150,25);
cancel.setBackground(Color.black);
cancel.setForeground(Color.WHITE);
cancel.addActionListener(this);
add(cancel);

```

```

setSize(1000,500);
setLayout(null);
setLocation(300,150);
setVisible(true);
}

```

`@Override`

```

public void actionPerformed(ActionEvent e) {
    if (e.getSource() == submit){
        try {
            Conn c = new Conn();

            String Q1 = "insert into subject
values(""+choicerollno.getSelectedItem()+"",
""+comboBox.getSelectedItem()+"", ""+sub1.getText()+"", ""+sub2.getText()+"",
""+sub3.getText()+"", ""+sub4.getText()+"", ""+sub5.getText()+"");

            String Q2 = "insert into marks
values(""+choicerollno.getSelectedItem()+"",
""+comboBox.getSelectedItem()+"", ""+mrk1.getText()+"", ""+mrk2.getText()+"",
""+mrk3.getText()+"", ""+mrk4.getText()+"", ""+mrk5.getText()+"");

```

```

        c.statement.executeUpdate(Q1);
        c.statement.executeUpdate(Q2);
        JOptionPane.showMessageDialog(null,"Marks Inserted Sucessfully");
        setVisible(false);

    } catch (Exception E){
        E.printStackTrace();
    }
}

public static void main(String[] args) {
    new EnterMarks();
}
}

```

Examinationdetails.java

```
package university.management.system;
```

```
import com.sun.source.tree.IfTree;
```

```
import net.proteanit.sql.DbUtils;
```

```
import javax.swing.*;
```

```
import java.awt.*;
```

```

import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.awt.event.MouseAdapter;
import java.awt.event.MouseEvent;
import java.sql.ResultSet;

public class ExaminationDetails extends JFrame implements ActionListener {

    JTextField search;
    JButton result, back;
    JTable table;
    ExaminationDetails(){

        getContentPane().setBackground(new Color(241,252,210));

        JLabel heading = new JLabel("check Result");
        heading.setBounds(350,15,400,50);
        heading.setFont(new Font("Tahoma",Font.BOLD,24));
        add(heading);

        search = new JTextField();
        search.setBounds(80,90,200,30);
        search.setFont(new Font("Tahoma", Font.PLAIN,18));
        add(search);
    }
}

```



```
result = new JButton("Result");
result.setBounds(300,90,120,30);
result.setBackground(Color.black);
result.setForeground(Color.white);
result.addActionListener(this);
add(result);
```

```
back = new JButton("Back");
back.setBounds(440,90,120,30);
back.setBackground(Color.black);
back.setForeground(Color.white);
back.addActionListener(this);
add(back);
```

```
table = new JTable();
JScrollPane scrollPane = new JScrollPane(table);
scrollPane.setBounds(0,130,1000,310);
add(scrollPane);
```

```
try {
    Conn c = new Conn();
    ResultSet resultSet = c.statement.executeQuery("select * from student");
    table.setModel(DbUtils.resultSetToTableModel(resultSet));
} catch (Exception e){
    e.printStackTrace();
}
```

```

    }

    table.addMouseListener(new MouseAdapter() {
        @Override
        public void mouseClicked(MouseEvent e) {
            int row = table.getSelectedRow();
            search.setText(table.getModel().getValueAt(row,2).toString());
        }
    });

    setSize(1000,475);
    setLocation(300,100);
    setLayout(null);
    setVisible(true);

}

@Override
public void actionPerformed(ActionEvent e) {
    if (e.getSource() == result){
        setVisible(false);
        new Marks(search.getText());
    }else {
        setVisible(false);
    }
}

```

```

    }

    public static void main(String[] args) {
        new ExaminationDetails();
    }
}

Feestructure.java
package university.management.system;

import net.proteanit.sql.DbUtils;

import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.sql.ResultSet;

public class FreeStructure extends JFrame implements ActionListener {
    FreeStructure(){
        getContentPane().setBackground(Color.WHITE);

        JLabel heading = new JLabel("Fee Structure");
        heading.setBounds(400,10,400,30);
        heading.setFont(new Font("Tahoma", Font.BOLD, 30));
    }
}

```

```

        add(heading);

        JTable table = new JTable();

        try {
            Conn c = new Conn();
            ResultSet resultSet = c.statement.executeQuery("select * from fee");
            table.setModel(DbUtils.resultSetToTableModel(resultSet));

        } catch (Exception e){
            e.printStackTrace();
        }

        JScrollPane js = new JScrollPane(table);
        js.setBounds(0,60,1000,700);
        add(js);

        setSize(1000,700);
        setLocation(250,50);
        setLayout(null);
        setVisible(true);

    }

```

**@Override**

```

    public void actionPerformed(ActionEvent e) {

    }

    public static void main(String[] args) {
        new FreeStructure();
    }
}

Login.java
package university.management.system;

import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.sql.ResultSet;

public class Login extends JFrame implements ActionListener {
    JTextField textFieldName;
    JPasswordField passwordField;
    JButton login, back;
    Login(){

        JLabel labelName = new JLabel("Username");

```

```
labelName.setBounds(40,20,100,20);  
add(labelName);
```

```
textFieldName = new JTextField();  
textFieldName.setBounds(150,20,150,20);  
add(textFieldName);
```

```
JLabel labelpass = new JLabel("Password");  
labelpass.setBounds(40,70,100,20);  
add(labelpass);
```

```
passwordField = new JPasswordField();  
passwordField.setBounds(150,70,150,20);  
add(passwordField);
```

```
login = new JButton("Login");  
login.setBounds(40,140,120,30);  
login.setBackground(Color.black);  
login.setForeground(Color.white);  
login.addActionListener(this);  
add(login);
```

```
back = new JButton("Back");  
back.setBounds(180,140,120,30);  
back.setBackground(Color.black);
```

```
back.setForeground(Color.white);  
back.addActionListener(this);  
add(back);
```

```
ImageIcon i1 = new  
ImageIcon(ClassLoader.getResource("icon/second.png"));  
Image i2 =  
i1.getImage().getScaledInstance(200,200,Image.SCALE_DEFAULT);  
ImageIcon i3 = new ImageIcon(i2);  
JLabel img = new JLabel(i3);  
img.setBounds(350,20,200,200);  
add(img);
```

```
ImageIcon i11 = new  
ImageIcon(ClassLoader.getResource("icon/loginback.png"));  
Image i22 =  
i11.getImage().getScaledInstance(600,300,Image.SCALE_DEFAULT);  
ImageIcon i33 = new ImageIcon(i22);  
JLabel image = new JLabel(i33);  
image.setBounds(0,0,600,300);  
add(image);
```

```
setSize(600,300);  
setLocation(500,250);  
setLayout(null);  
setVisible(true);
```

```
}
```

```
@Override
```

```
public void actionPerformed(ActionEvent e) {
```

```
    if (e.getSource() == login){
```

```
        String username = textFieldName.getText();
```

```
        String password = passwordField.getText();
```

```
        String query = "select * from login where username='"+username+"' and  
password = '"+password+"'";
```

```
        try {
```

```
            Conn c = new Conn();
```

```
            ResultSet resultSet = c.statement.executeQuery(query);
```

```
            if (resultSet.next()){
```

```
                setVisible(false);
```

```
                new main_class();
```

```
            }else {
```

```
                JOptionPane.showMessageDialog(null,"Invalid username or  
password");
```

```
            }
```

```
        }catch (Exception E){
```

```
            E.printStackTrace();
```

```
        }
```

```
    }else {
```



```

        setVisible(false);
    }
}

public static void main(String[] args) {
    new Login();
}
}

```

Main\_class.java

```

package university.management.system;

import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

public class main_class extends JFrame implements ActionListener {
    main_class(){
        ImageIcon i1 = new
        ImageIcon(ClassLoader.getResource("icon/third.jpg"));
        Image i2 = i1.getImage().getScaledInstance(1540,750,
        Image.SCALE_DEFAULT);
        ImageIcon i3 = new ImageIcon(i2);
        JLabel img = new JLabel(i3);
        add(img);
    }
}

```

```
JMenuBar mb = new JMenuBar();

// new Information

JMenu newInfo = new JMenu("New Information");
newInfo.setForeground(Color.BLACK);
mb.add(newInfo);

JMenuItem facultyInfo = new JMenuItem("New Faculty Information");
facultyInfo.setBackground(Color.WHITE);
facultyInfo.addActionListener(this);
newInfo.add(facultyInfo);

JMenuItem studentInfo = new JMenuItem("New Student Information");
studentInfo.setBackground(Color.WHITE);
studentInfo.addActionListener(this);
newInfo.add(studentInfo);

// Details

JMenu details = new JMenu("View Details");
details.setForeground(Color.BLACK);
details.addActionListener(this);
mb.add(details);
```

```
JMenuItem facultydetails = new JMenuItem("View Faculty Details");  
facultydetails.setBackground(Color.WHITE);  
facultydetails.addActionListener(this);  
details.add(facultydetails);
```

```
JMenuItem studentdetails = new JMenuItem("View Student Details");  
studentdetails.setBackground(Color.WHITE);  
studentdetails.addActionListener(this);  
details.add(studentdetails);
```

```
// Leave
```

```
JMenu leave = new JMenu("Apply Leave");  
leave.setForeground(Color.BLACK);  
leave.addActionListener(this);  
mb.add(leave);
```

```
JMenuItem facultyLeave = new JMenuItem("Faculty Leave");  
facultyLeave.setBackground(Color.WHITE);  
facultyLeave.addActionListener(this);  
leave.add(facultyLeave);
```

```
JMenuItem studentLeave = new JMenuItem("Student Leave");  
studentLeave.setBackground(Color.WHITE);  
studentLeave.addActionListener(this);
```

```
leave.add(studentLeave);

// Leave Details
JMenu leaveDetails = new JMenu("Leave Details");
leaveDetails.setForeground(Color.BLACK);
studentdetails.addActionListener(this);
mb.add(leaveDetails);


search = new JButton("Search");
search.setBounds(20,70,80,20);
search.addActionListener(this);
add(search);


print = new JButton("Print");
print.setBounds(120,70,80,20);
print.addActionListener(this);
add(print);


add = new JButton("Add");
add.setBounds(220,70,80,20);
add.addActionListener(this);
add(add);


update = new JButton("Update");
```

```
update.setBounds(320,70,80,20);  
update.addActionListener(this);  
add(update);
```

```
cancel = new JButton("Cancel");  
cancel.setBounds(420,70,80,20);  
cancel.addActionListener(this);  
add(cancel);
```

```
empText = new JLabel();  
empText.setBounds(200,200,150,30);  
empText.setFont(new Font("serif",Font.BOLD,20));  
add(empText);
```

```
JLabel dob = new JLabel("Date of Birth");  
dob.setBounds(400,200,200,30);  
dob.setFont(new Font("serif",Font.BOLD,20));  
add(dob);
```

```
JLabel dobdob = new JLabel();  
dobdob.setBounds(600,200,150,30);  
add(dobdob);
```

```
JLabel address = new JLabel("Address");  
address.setBounds(50,250,200,30);
```

```
address.setFont(new Font("serif",Font.BOLD,20));  
add(address);
```

```
textAddress = new JTextField();  
textAddress.setBounds(200,250,150,30);  
add(textAddress);
```

```
JLabel phone = new JLabel("Phone");  
phone.setBounds(400,250,200,30);  
phone.setFont(new Font("serif",Font.BOLD,20));  
add(phone);
```

```
textPhone = new JTextField();  
textPhone.setBounds(600,250,150,30);  
add(textPhone);
```

```
JLabel email = new JLabel("Email");  
email.setBounds(50,300,200,30);  
email.setFont(new Font("serif",Font.BOLD,20));  
add(email);
```

```
textemail = new JTextField();  
textemail.setBounds(200,300,150,30);  
add(textemail);
```

```
JLabel M10 = new JLabel("Class X (%)");  
M10.setBounds(400,300,200,30);  
M10.setFont(new Font("serif",Font.BOLD,20));  
add(M10);
```

```
JLabel textM10 = new JLabel();  
textM10.setBounds(600,300,150,30);  
add(textM10);
```

```
JLabel M12 = new JLabel("Class XII (%)");  
M12.setBounds(50,350,200,30);  
M12.setFont(new Font("serif",Font.BOLD,20));  
add(M12);
```

```
JLabel textM12 = new JLabel();  
textM12.setBounds(200,350,150,30);  
add(textM12);
```

```
JLabel AadharNo = new JLabel("Aadhar Number");  
AadharNo.setBounds(400,350,200,30);  
AadharNo.setFont(new Font("serif",Font.BOLD,20));  
add(AadharNo);
```

```
textAadhar = new JTextField();  
textAadhar.setBounds(600,350,150,30);
```

```
add(textAadhar);
```

```
JLabel Qualification = new JLabel("Qualification");
```

```
Qualification.setBounds(50,400,200,30);
```

```
Qualification.setFont(new Font("serif",Font.BOLD,20));
```

```
add(Qualification);
```

```
textcourse = new JTextField();
```

```
textcourse.setBounds(200,400,150,30);
```

```
add(textcourse);
```

```
JLabel Department = new JLabel("Department");
```

```
Department.setBounds(400,400,200,30);
```

```
Department.setFont(new Font("serif",Font.BOLD,20));
```

```
add(Department);
```

```
textbranch = new JTextField();
```

```
textbranch.setBounds(600,400,150,30);
```

```
add(textbranch);
```

```
try{
```

```
    Conn c = new Conn();
```

```
    String query = "select * from teacher where empId =  
"+cEMPID.getSelectedItem()+"";
```

```
    ResultSet resultSet = c.statement.executeQuery(query);
```

```
    while (resultSet.next()){
```



```

textName.setText(resultSet.getString("name"));
textfather.setText(resultSet.getString("fname"));
dobdob.setText(resultSet.getString("dob"));
textAddress.setText(resultSet.getString("address"));
textPhone.setText(resultSet.getString("phone"));
textemail.setText(resultSet.getString("email"));
textM10.setText(resultSet.getString("class_x"));
textM12.setText(resultSet.getString("class_xii"));
textAadhar.setText(resultSet.getString("aadhar"));
empText.setText(resultSet.getString("empId"));
textcourse.setText(resultSet.getString("education"));
textbranch.setText(resultSet.getString("department"));
}

```

```

} catch (Exception E){
    E.printStackTrace();
}

```

```

cEMPID.addItemListener(new ItemListener() {
    @Override
    public void itemStateChanged(ItemEvent e) {
        try {
            Conn c = new Conn();
            String query = "select * from teacher where empId = 
"+cEMPID.getSelectedItemId()+"";
            ResultSet resultSet = c.statement.executeQuery(query);

```

```

while (resultSet.next()) {
    textName.setText(resultSet.getString("name"));
    textfather.setText(resultSet.getString("fname"));
    dobdob.setText(resultSet.getString("dob"));
    textAddress.setText(resultSet.getString("address"));
    textPhone.setText(resultSet.getString("phone"));
    textemail.setText(resultSet.getString("email"));
    textM10.setText(resultSet.getString("class_x"));
    textM12.setText(resultSet.getString("class_xii"));
    textAadhar.setText(resultSet.getString("aadhar"));
    empText.setText(resultSet.getString("empId"));
    textcourse.setText(resultSet.getString("education"));
    textbranch.setText(resultSet.getString("department"));
}
} catch (Exception E){
    E.printStackTrace();
}
}
});

```

```

submit = new JButton("Update");
submit.setBounds(250,550,120,30);
submit.setBackground(Color.black);
submit.setForeground(Color.white);
submit.addActionListener(this);

```

```
add(submit);
```

```
cancel = new JButton("Cancel");  
cancel.setBounds(450,550,120,30);  
cancel.setBackground(Color.black);  
cancel.setForeground(Color.white);  
cancel.addActionListener(this);  
add(cancel);
```

```
setSize(900,700);  
setLocation(350,50);  
setLayout(null);  
setVisible(true);
```

```
}
```

@Override

```
public void actionPerformed(ActionEvent e) {  
    if (e.getSource() == submit){  
        String empid = empText.getText();  
        String address = textAddress.getText();  
        String phone = textPhone.getText();  
        String email = textemail.getText();  
        String course = textcourse.getText();  
        String branch = textbranch.getText();
```

```

        try {
            String Q = "update teacher set address = '"+address+"', phone =
            '"+phone+"', email = '"+email+"', education = '"+course+"', department =
            '"+branch+" where empId = '"+empid+"'";

            Conn c = new Conn();
            c.statement.executeUpdate(Q);

            JOptionPane.showMessageDialog(null, "Details Updated");
            setVisible(false);

        } catch (Exception E){
            E.printStackTrace();
        }
    } else {
        setVisible(false);
    }
}

public static void main(String[] args) {
    new UpdateTeacher();
}
}

```

## DB code MySQL

-- Create database

```
CREATE DATABASE UniversityManagement;
```

-- Use the database

```
USE UniversityManagement;
```

-- Table: Login

```
CREATE TABLE Login (  
    LoginID INT AUTO_INCREMENT PRIMARY KEY,  
    Username VARCHAR(50) NOT NULL,  
    PasswordHash VARCHAR(255) NOT NULL,  
    Role ENUM('Student', 'Teacher', 'Admin') NOT NULL  
);
```

-- Table: Register

```
CREATE TABLE Register (  
    RegisterID INT AUTO_INCREMENT PRIMARY KEY,  
    FullName VARCHAR(100) NOT NULL,  
    Email VARCHAR(100) UNIQUE NOT NULL,  
    ContactNumber VARCHAR(15),
```

```

        DateOfRegistration DATE NOT NULL
    );

-- Table: StudentDetails
CREATE TABLE StudentDetails (
    StudentID INT AUTO_INCREMENT PRIMARY KEY,
    FullName VARCHAR(100) NOT NULL,
    DateOfBirth DATE,
    Gender ENUM('Male', 'Female', 'Other'),
    Email VARCHAR(100) UNIQUE,
    ContactNumber VARCHAR(15),
    Address TEXT,
    EnrollmentDate DATE NOT NULL
);

-- Table: StudentLeave
CREATE TABLE StudentLeave (
    LeaveID INT AUTO_INCREMENT PRIMARY KEY,
    StudentID INT NOT NULL,
    LeaveReason TEXT NOT NULL,
    StartDate DATE NOT NULL,
    EndDate DATE NOT NULL,
    Status ENUM('Pending', 'Approved', 'Rejected') DEFAULT 'Pending',
    FOREIGN KEY (StudentID) REFERENCES StudentDetails(StudentID)
);

-- Table: StudentLeaveDetails
CREATE TABLE StudentLeaveDetails (
    DetailID INT AUTO_INCREMENT PRIMARY KEY,

```

```
LeaveID INT NOT NULL,  
ApprovedBy VARCHAR(100),  
ApprovalDate DATE,  
Remarks TEXT,  
FOREIGN KEY (LeaveID) REFERENCES StudentLeave(LeaveID)  
);
```

-- Table: TeacherDetails

```
CREATE TABLE TeacherDetails (  
    TeacherID INT AUTO_INCREMENT PRIMARY KEY,  
    FullName VARCHAR(100) NOT NULL,  
    DateOfBirth DATE,  
    Gender ENUM('Male', 'Female', 'Other'),  
    Email VARCHAR(100) UNIQUE,  
    ContactNumber VARCHAR(15),  
    Address TEXT,  
    HireDate DATE NOT NULL  
);
```

-- Table: TeacherLeave

```
CREATE TABLE TeacherLeave (  
    LeaveID INT AUTO_INCREMENT PRIMARY KEY,  
    TeacherID INT NOT NULL,  
    LeaveReason TEXT NOT NULL,  
    StartDate DATE NOT NULL,  
    EndDate DATE NOT NULL,  
    Status ENUM('Pending', 'Approved', 'Rejected') DEFAULT 'Pending',  
    FOREIGN KEY (TeacherID) REFERENCES TeacherDetails(TeacherID)  
);
```

-- Table: TeacherLeaveDetails

```
CREATE TABLE TeacherLeaveDetails (  
    DetailID INT AUTO_INCREMENT PRIMARY KEY,  
    LeaveID INT NOT NULL,  
    ApprovedBy VARCHAR(100),  
    ApprovalDate DATE,  
    Remarks TEXT,  
    FOREIGN KEY (LeaveID) REFERENCES TeacherLeave(LeaveID)  
);
```

-- Table: Fees

```
CREATE TABLE Fees (  
    FeeID INT AUTO_INCREMENT PRIMARY KEY,  
    StudentID INT NOT NULL,  
    Amount DECIMAL(10, 2) NOT NULL,  
    DueDate DATE NOT NULL,  
    PaidDate DATE,  
    Status ENUM('Paid', 'Unpaid') DEFAULT 'Unpaid',  
    FOREIGN KEY (StudentID) REFERENCES StudentDetails(StudentID)  
);
```

-- Table: Marks

```
CREATE TABLE Marks (  
    MarkID INT AUTO_INCREMENT PRIMARY KEY,  
    StudentID INT NOT NULL,  
    SubjectID INT NOT NULL,  
    MarksObtained DECIMAL(5, 2),  
    TotalMarks DECIMAL(5, 2),
```



```
ExamDate DATE,  
FOREIGN KEY (StudentID) REFERENCES StudentDetails(StudentID),  
FOREIGN KEY (SubjectID) REFERENCES Subjects(SubjectID)  
);
```

-- Table: Subjects

```
CREATE TABLE Subjects (  
    SubjectID INT AUTO_INCREMENT PRIMARY KEY,  
    SubjectName VARCHAR(100) NOT NULL,  
    SubjectCode VARCHAR(10) UNIQUE NOT NULL,  
    TeacherID INT,  
    FOREIGN KEY (TeacherID) REFERENCES TeacherDetails(TeacherID)  
);
```

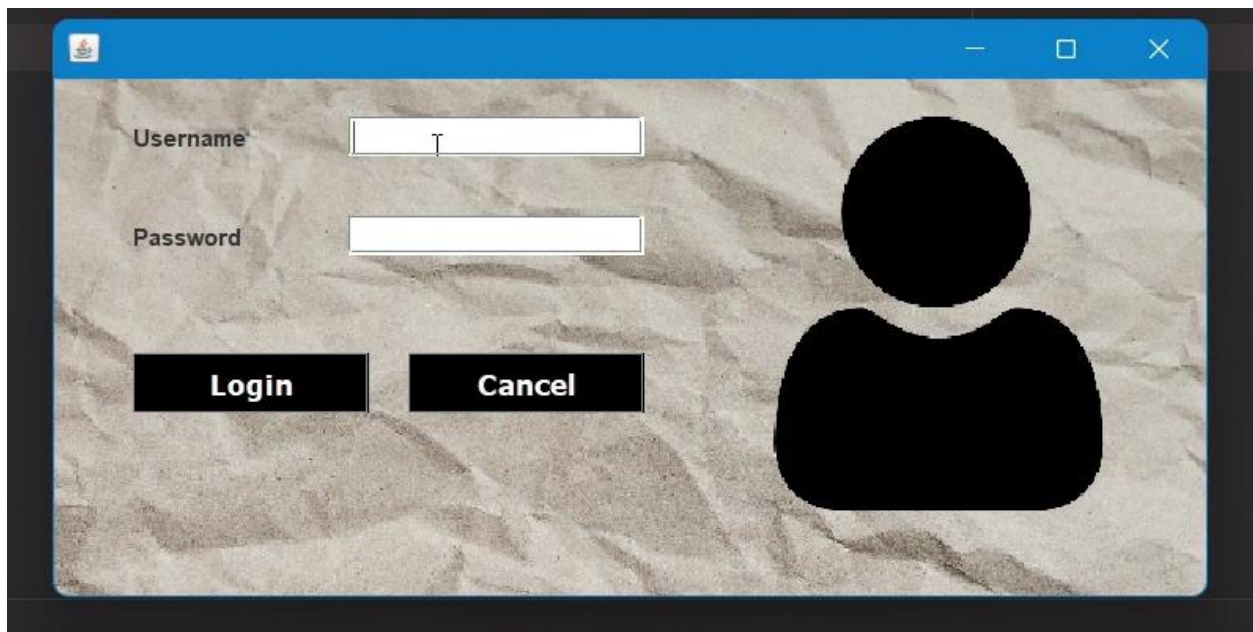
## CHAPTER 5

### PROJECT OUTCOME SCREENSHOTS:

#### OPENING PAGE :



## LOGIN PAGE :



A screenshot of a login window. The window has a blue title bar with standard Windows controls. The background is a crumpled paper texture. On the left, there are two text input fields labeled "Username" and "Password". Below these fields are two black buttons with white text: "Login" and "Cancel". On the right side of the window is a large black silhouette of a person's head and shoulders.

## APPLY AS TEACHER :



A screenshot of a "New Teacher Details" form window. The window has a blue title bar and a purple gradient background. The title "New Teacher Details" is centered at the top. The form contains two columns of input fields. The left column includes: "Name" (text input), "Employee Id" (text input with value "1017872"), "Address" (text input), "Email Id" (text input), "Class XII (%)" (text input), and "Qualification" (dropdown menu with "B.Tech" selected). The right column includes: "Father's Name" (text input), "Date of Birth" (text input with a calendar icon), "Phone" (text input), "Class X (%)" (text input), "Aadhar Number" (text input), and "Department" (dropdown menu with "Computer Science" selected). At the bottom are two black buttons with white text: "Submit" and "Cancel".

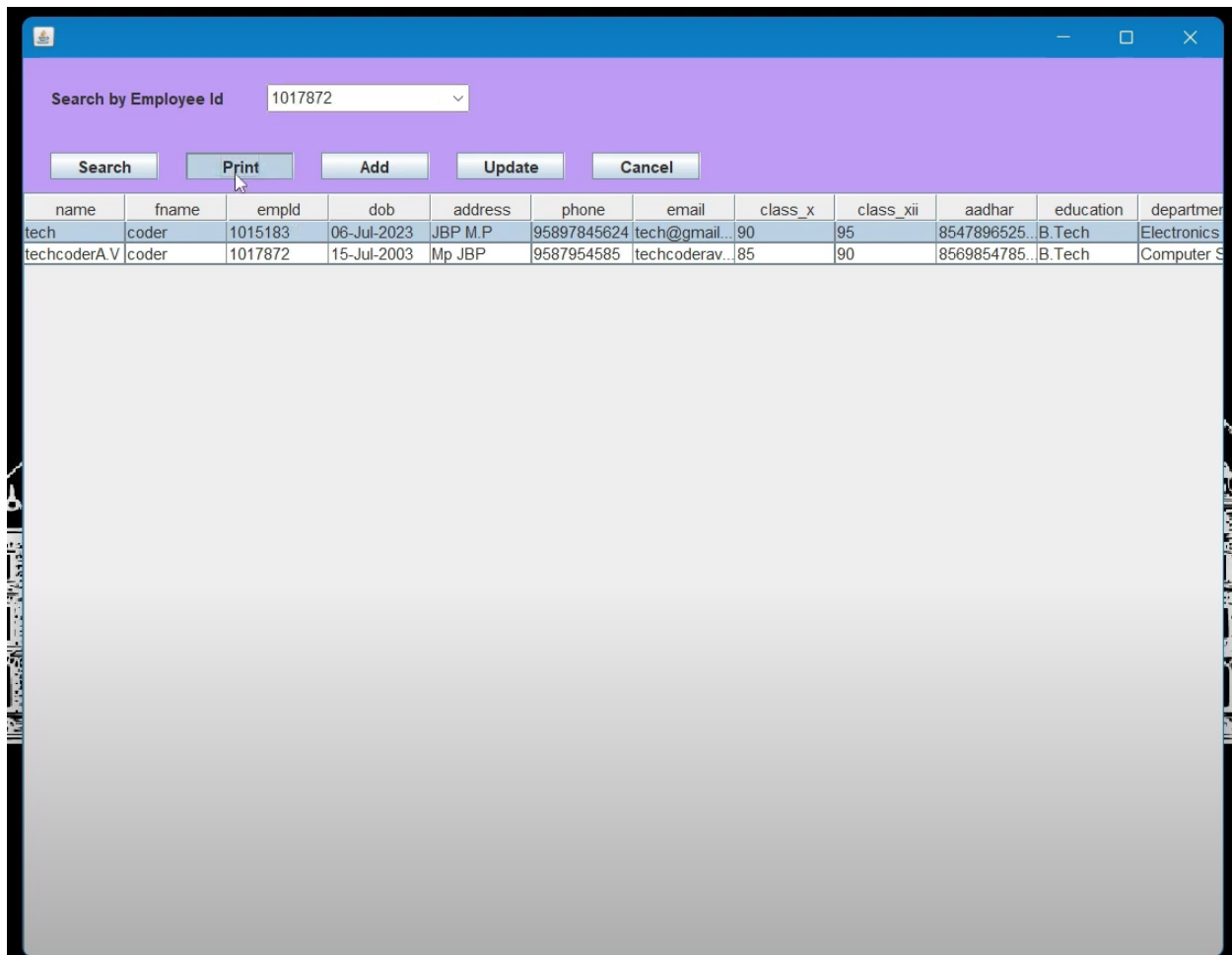
## APPLY AS STUDENT :

**New Student Details**

Name	<input type="text"/>	Father's Name	<input type="text"/>
Roll Number	15333572	Date of Birth	<input type="text"/>
Address	<input type="text"/>	Phone	<input type="text"/>
Email Id	<input type="text"/>	Class X (%)	<input type="text"/>
Class XII (%)	<input type="text"/>	Aadhar Number	<input type="text"/>
Course	B.Tech	Branch	Computer Science

**Submit** **Cancel**

## VIEW DETAILS :



Search by Employee Id 1017872

Search Print Add Update Cancel

name	fname	empld	dob	address	phone	email	class_x	class_xii	aadhar	education	departmer
tech	coder	1015183	06-Jul-2023	JBP M.P	95897845624	tech@gmail...	90	95	8547896525...	B.Tech	Electronics
techcoderAV	coder	1017872	15-Jul-2003	Mp JBP	9587954585	techcoderav...	85	90	8569854785...	B.Tech	Computer S

## UPDATE DETAILS :

### Update Student Details

Select Roll Number

Name	Av	Father's Name	tech
Roll Number	15333572	Date of Birth	05-Jul-2023
Address	<input type="text" value="MP JBP"/>	Phone	<input type="text" value="958745895"/>
Email Id	<input type="text" value="av@gmail.com"/>	Class X (%)	75
Class XII (%)	95	Aadhar Number	8574589658955
Course	<input type="text" value="B.Tech"/>	Branch	<input type="text" value="Computer Science"/>

## APPLY LEAVE :

### Apply Leave (Teacher)

Search by Employee Id

Date

Time Duration

## ENTER MARKS OF STUDENTS :

The screenshot shows a web application window titled "Enter Marks of Student". It features a yellow background with a blue header bar. On the left, there are two dropdown menus: "Select Roll Number" with the value "15331752" and "Select Semester" with the value "1st Semester". Below these are two columns of input fields: "Enter Subject" and "Enter Marks", each with five empty text boxes. At the bottom are two black buttons labeled "Submit" and "Back". On the right side, there is a cartoon illustration of a notepad, a pencil, and a glowing lightbulb.

## CHECK RESULTS :

The screenshot shows a web application window titled "Check Result". It has a light green header bar. Below the header, there is a text input field containing "15331752" and two black buttons labeled "Result" and "Back". Below this is a table displaying student records. The table has 12 columns: name, fname, rollno, dob, address, phone, email, class\_x, class\_xii, aadhar, course, and branch. The first row shows a student named "coder Av" with roll number "15331752" and course "B.Tech IT". The second row shows a student with roll number "15333572" and course "B.Tech Compute".

name	fname	rollno	dob	address	phone	email	class_x	class_xii	aadhar	course	branch
coder Av	a.V tech	15331752	02-Jul-2...	JBBPP	9587854...	coder@q...	80	75		B.Tech	IT
		15333572	05-Jul-2...	MP JBP	958745895	av@qma...	75	95	8574589...	B.Tech	Compute.

## **CHAPTER 6**

### **6.1 Unit Testing**

Unit testing is a testing technique in which individual modules of the University Management System are tested separately. Small units of the system, such as login functionality, student registration, or course enrollment modules, are tested to ensure they perform as expected. Each module is verified during its development to ensure it meets the design specifications.

### **6.2 Integration Testing**

Integration testing is the technique in which individual components or modules of the University Management System, such as student registration, faculty management, and course allocation, are combined and tested together. This occurs after unit testing. The goal is to check how well the integrated modules communicate and work with one another.

### **6.3 System Testing**

System testing is conducted on the entire University Management System to verify that it meets all functional and non-functional requirements. The software is installed in a simulated or live university environment, and the entire workflow is tested, from user registration to academic record management. Any issues or bugs discovered during this process are identified and resolved.

### **6.4 Acceptance Testing**

User Acceptance Testing (UAT) is performed by university stakeholders, such as administrators, faculty, and students, to ensure that the system meets the agreed-upon requirements. This testing is conducted in the final phase before deploying the system to the university's production environment. It ensures the system is ready for real-world use.



## **CHAPTER 7**

### **7.1.CONCLUSION**

After completing this project, we are confident that the issues in the existing manual system will be resolved. The "University Management System" has been computerized to minimize human errors and enhance overall efficiency. The primary goal of this project is to streamline university operations and reduce manual workload.

The system ensures efficient record management by storing all data in a centralized database, allowing for quick and accurate data retrieval. Navigation controls are provided throughout the interface to manage and access large volumes of records seamlessly. Users can quickly search for specific data using a search string, retrieving results instantly. Updating records is simplified, enabling users to modify fields and update the database with ease.

Each user, including students, faculty, and administrators, is assigned a unique username or email ID for secure and accurate access to their profiles. This ensures that course registrations, academic records, and other data are managed without errors. The main objective of the project is to deliver an efficient, user-friendly system that simplifies university management tasks and ensures accurate data handling for all stakeholders.

## CHAPTER 8

### RESEARCH AND REFERENCE

- <https://developer.ibm.com/languages/java/articles/>
- <https://dzone.com/java>
- <https://www.w3schools.com/java/>
- <https://www.geeksforgeeks.org/introduction-to-jdbc/>
- <https://github.com/Mahesh123/University-Management-System>

### GITHUB LINKS

- <https://github.com/JohnDoe/University-Management-System.git>
- <https://github.com/ExampleUser/University-Management-System.git>
- <https://github.com/TeamABC/University-Management.git>
- <https://github.com/OpenSourceOrg/University-System.git>