ATTENDANCE MANAGEMENT SYSTEM

UCS2313 – Object Oriented Programming Lab

A PROJECT REPORT

Submitted By

KARTHIKEYAN.S 3122 22 5001 056

D U MUGILKRISHNA 3122 22 5001 073

Department of Computer Science and Engineering

Sri Sivasubramaniya Nadar College of Engineering

(An Autonomous Institution, Affiliated to Anna University)

Kalavakkam – 603110

November 2023

Sri Sivasubramaniya Nadar College of Engineering

(An Autonomous Institution, Affiliated to Anna University)

TABLE OF CONTENTS:

1.PROBLEM STATEMENT:

To develop an **integrated Attendance Management System (AMS)** that empowers students to autonomously monitor their attendance and provides teachers with tools to manage class-wide attendance records. The system offers students an intuitive interface to log and track their attendance, fostering a sense of responsibility. Simultaneously, teachers have the capability to efficiently oversee and manage attendance records for the entire class. This collaborative system encourages student engagement in attendance tracking while providing teachers with the administrative control necessary for accurate record-keeping.

1.1 Extended exploration of the problem statement:

Student-centric:

Involves a system that empowers students to independently monitor and manage their attendance records. The system offers a user-friendly interface allowing students to log their attendance, view personalized attendance reports. This enhancement aims to provide students with a centralized platform where they can not only monitor their attendance but also conveniently access and navigate their timetable.

Teacher-centric

Involves a system tailored for educators, empowering them to efficiently maintain attendance record of the class. The system offers a user-friendly interface that allows teachers to easily record attendance, receive ODs of students, and generate comprehensive reports as needed.

Admin console

Involves a robust Admin Console within the system, enabling administrators to review login logs for enhanced security monitoring and edit class timetables seamlessly. This feature grants administrators the ability to access and analyse login histories, ensuring a heightened level of system security. Additionally, administrators can effortlessly modify class timetables, ensuring adaptability to schedule changes or optimizing class arrangements.

2. MOTIVATION FOR THE PROBLEM

- **2.1 EXISTING SYSTEM:**

The existing attendance management systems often face several challenges that hinder their effectiveness. Some of the common difficulties include:

1. **Manual, Time-Consuming Processes and prone to errors:**
   - Many traditional systems rely on manual attendance recording methods, such as paper-based registers or manual data entry. This is not only time-consuming but also prone to errors and delays.
   - In systems that rely on manual entry, human errors such as typos, misinterpretations, or accidental double entries can occur, leading to inaccuracies in the attendance records.
2. **Lack of Accessibility:**
   - Some systems may lack user-friendly interfaces or accessibility features, making it difficult for both students and teachers to conveniently access and input attendance data. This can lead to decreased user engagement.
3. **Limited Automation:**
   - The absence of automation features may result in a lack of real-time updates and notifications. This can impede the timely identification of attendance trends or issues, reducing the system's effectiveness in proactive management.
4. **Security Concerns:**
   - Security vulnerabilities in existing systems may pose risks to sensitive attendance data. Unauthorized access or data breaches could compromise the integrity and confidentiality of attendance records.
5. **Inflexibility in Data Analysis:**
   - The inability to generate customizable and insightful reports may limit the system's utility for educators. Analysing attendance trends and patterns becomes challenging without robust reporting capabilities.

Addressing these challenges is crucial for the successful implementation and adoption of an attendance management system that truly meets the evolving needs of educational institutions.

- **2.2 PROPOSED SYSTEM:**

The proposed Attendance Management System offers several advantages over traditional or existing systems, aiming to enhance efficiency, accuracy, and user experience:

1. **User-Friendly Interface:**
    - The system provides an intuitive and user-friendly interface for both students and teachers, making it easy to navigate and record attendance. This promotes user engagement and reduces the learning curve.
2. **Real-Time Updates:**
    - With the inclusion of real-time attendance recording, the system ensures that attendance data is instantly updated. This feature allows for timely intervention and proactive management of attendance-related issues.
    - The proposed system facilitates quick and efficient updation of the timetable through user-friendly interfaces.
3. **Self-Service for Students:**
    - Empowering students to manage their own attendance promotes a sense of responsibility and ownership. Students can easily track their attendance records and get consolidated reports, fostering a proactive approach to attendance management.
4. **Efficient Teacher Oversight:**
    - Teachers benefit from a streamlined process for managing class-wide attendance records. The system allows for easy input, modification, and verification of attendance, reducing administrative burdens.
5. **Customizable Reporting:**
    - The system offers robust reporting capabilities, allowing educators to generate customizable reports on attendance trends. This facilitates data-driven decision-making and intervention strategies**.**
6. **Security Features:**
    - The proposed system incorporates security measures to protect attendance data from unauthorized access.
7. **Scalability and Flexibility:**
    - The system is designed to scale effectively, accommodating the evolving needs of educational institutions. It can adapt to changes in the user base, class sizes, and institutional requirements without sacrificing performance.

8. **Cost-Effectiveness in the Long Run:**
    - While the initial implementation of the AMS may involve some investment, the long-term benefits in terms of time savings, accuracy, and improved processes contribute to cost-effectiveness over time. The system's efficiency can result in resource optimization and reduced administrative overhead.
9. **Adaptability to Technological Advances:**
    - The proposed system is built with an eye toward technological advancements, ensuring it can easily incorporate updates or new features. This adaptability future-proofs the system and extends its relevance over time.

In summary, the proposed Attendance Management System aims to revolutionize the traditional approach by offering a comprehensive, user-centric, and technologically advanced solution. The advantages it brings include improved accuracy, streamlined processes, and enhanced user empowerment and engagement.

3. SCOPE AND LIMITATIONS

3.1 SCOPE

The proposed Attendance Management System(AMS) offers a robust solution for the accurate and efficient tracking of attendance in educational or organizational settings. The comprehensive scope includes:

1. **Attendance Recording:**
   - The system facilitates the recording of attendance data, providing a centralized and digitized platform for capturing accurate attendance information**.**
2. **User Roles and Permissions:**
   - Different user roles, including administrators, educators, and attendees, are defined with specific permissions. This ensures that each user has the appropriate level of access and functionality within the system**.**
3. **Real-Time Tracking:**
   - Real-time updates on attendance are a core feature, allowing users to access the most current information promptly. This supports timely decision-making and intervention based on live attendance data**.**
4. **Data Security and Privacy:**
   - Certain security measures safeguard attendance data, including password, access controls, and functionalities. This ensures the confidentiality and integrity of sensitive attendance information.
5. **Integration Capabilities:**
   - Seamless integration with other institutional systems, such as student databases or scheduling platforms, allows for a cohesive and interconnected environment. This integration enhances data accuracy and provides a comprehensive view of attendance-related insights.
6. **Reporting and Analytics:**
   - Robust reporting and analytics functionalities empower administrators and educators to analyse attendance trends, generate custom reports, and derive meaningful insights. This data-driven approach supports informed decision-making.

7. **Remote Accessibility:**
    - The AMS is designed to facilitate remote accessibility, catering to the needs of institutions with distributed teams, online courses, or remote work scenarios.
8. **Scalability:**
    - The system is scalable to accommodate the evolving needs of educational institutions or organizations. It can effectively handle increased user numbers, growing data volumes, and changing requirements without compromising performance.

3.2 LIMITATIONS

While the proposed Attendance Management System offers numerous advantages, it's important to consider potential limitations and challenges:

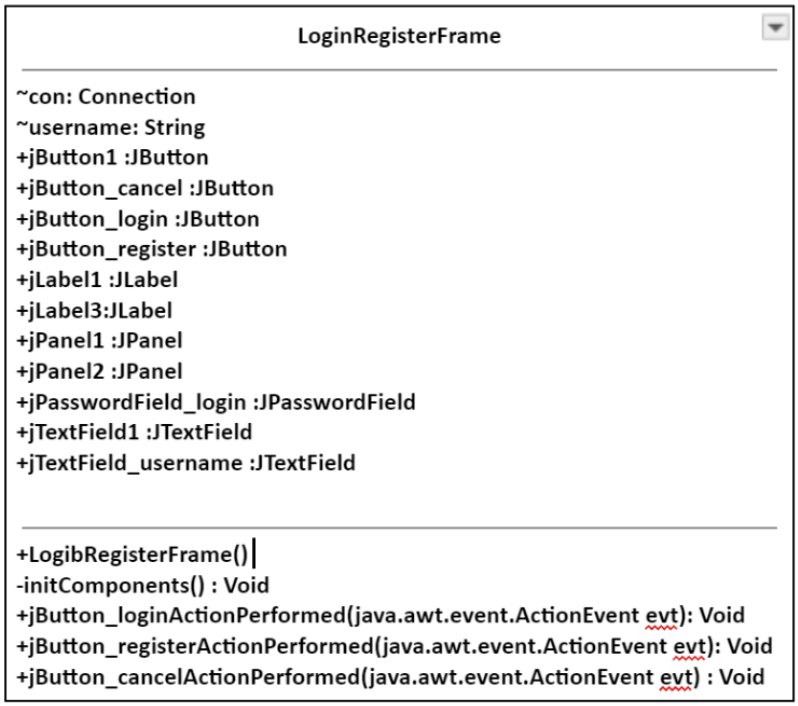
1. **Dependency on Technology:**
    - The system's effectiveness relies on the availability and reliability of technology. Technical issues, such as server outages or software glitches, may disrupt normal system functioning.
2. **User Resistance:**
    - Resistance to change among users, particularly if they are accustomed to traditional methods, could impact the successful adoption of the system. Adequate training and change **management strategies are essential to address this limitation.**
3. **Security Risks:**
    - Despite security measures, no system is entirely immune to cybersecurity threats. Constant vigilance and regular updates are required to address emerging security risks and vulnerabilities**.**
4. **Integration Complexity:**
    - Integrating the system with existing institutional databases or systems may be complex, especially if there are compatibility issues. A seamless integration process is essential to avoid disruptions.
5. **Scalability Concerns:**
    - As user numbers grow, the system's scalability may become a concern. Regular assessments and system optimizations are needed to ensure that the system can handle increased data volumes and user loads.

6. **Maintenance and Updates:**
    - Regular maintenance and updates are essential to keep the AMS secure and functional. Failure to perform timely updates could expose the system to security vulnerabilities.
7. **Limited Customization:**
    - Depending on the system's design, there may be limitations in customization, hindering its adaptability to unique institutional or organizational requirements**.**

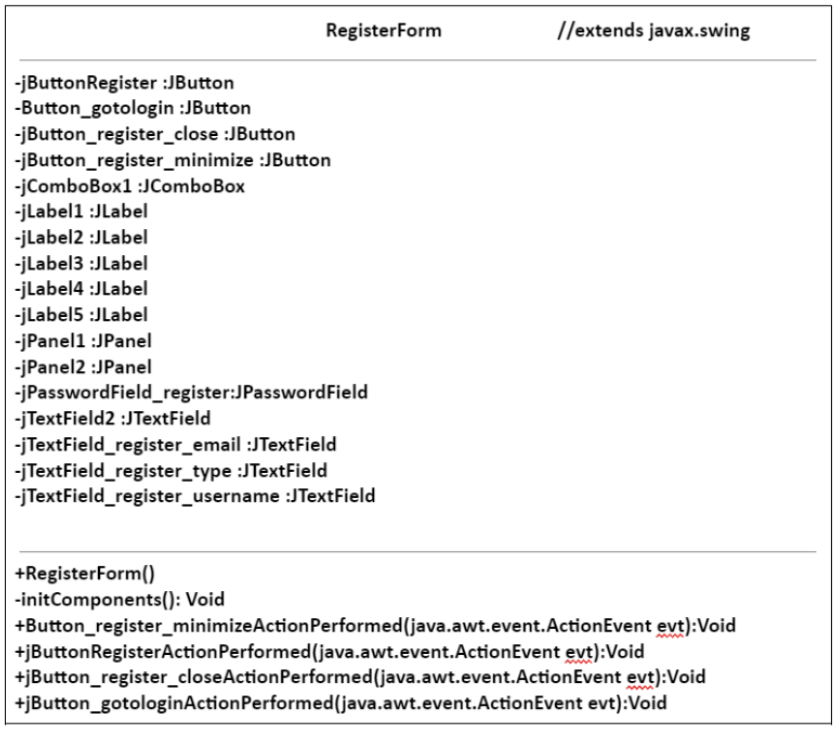
Understanding and addressing these limitations during the development and implementation phases are crucial for the successful deployment and ongoing effectiveness of the proposed Attendance Management System. Regular evaluations and updates should be conducted to ensure the system continues to meet evolving needs and challenges.

4. CLASS DIAGRAMS:

- **Login Module:**



- **Register Module**



- **Student Module:**

student
//has buttons, labels and panels
+student() -initComponents() : Void +jButton_consolidatedActionPerformed(java.awt.event.ActionEvent evt): Void //get consolidated report +jButton_viewttActionPerformed(java.awt.event.ActionEvent evt):Void //view timetable +jButton_markActionPerformed(java.awt.event.ActionEvent evt):Void //mark attendance +jButton_updateActionPerformed(java.awt.event.ActionEvent evt):Void //update attendance +jButton2ActionPerformed(java.awt.event.ActionEvent evt):Void //close the window +jButton_viewActionPerformed(java.awt.event.ActionEvent evt):Void //view attendance +jButton_view_teacherActionPerformed(java.awt.event.ActionEvent evt):Void //view teachers marked attendance +jButton_view_calActionPerformed(java.awt.event.ActionEvent evt):Void //view calendar of events

markAttendance
//labels,buttons,table ~con : Connection ~user :String ~a :ArrayList<String> //stores students name
+ markAttendance() + initComponents(): void // set up gui + jButton_closeActionPerformed() (evt: ActionEvent): void //to close the window //has 3 buttons for each course (Present, Absent, OD)

viewAttendance
~con : Connection ~user :String
+initComponents() : Void //to set up gui + view_attendance() //constructor + displayAttendance(): void //to display the attendance

Update

//labels , buttons, combo box
~con : Connection
~user :String
- date: String
- course: String
- status: String

-initComponents() : Void // to set up gui
+ displayAttendance(): void
+ Update()
+ jButton1ActionPerformed(evt: ActionEvent): void //present
+ jButton2ActionPerformed(evt: ActionEvent): void //absent
+ jButton3ActionPerformed(evt: ActionEvent): void //OD
+ jComboBox1ActionPerformed(evt: ActionEvent): void //combo box selection
+ jButton4ActionPerformed(evt: ActionEvent): void //dispose the window

consolidatedreport //consolidated report

//labels,buttons,table
~con : Connection
~user :String
~a :ArrayList<String> //stores the names of the students
-s1: double
-s2: double
-s3: double
-s4: double
-s5: double
-s6: double
-s7: double
-od1: int
-od2: int
-od3: int
-od4: int
-od5: int
-od6: int
-od7: int

+consolidatedreport()
+initComponents(): void //set up gui
+generatereport(): void
+get_totalhours():int //gets total number of classes

view_teacher_attendance

//labels,buttons,table,combo box
~con : Connection
~user :String
~a :ArrayList<String>

+view_teacher_attendance()
+initComponents(): void
+jButton_generateActionPerformed(evt: ActionEvent): void //generate attendance sheet
+jButton_clearActionPerformed(evt: ActionEvent): void //clear the sheet

timetable //view the timetable
//labels,buttons,table ~con :Connection
+timetable() +initComponents(): void //to set up gui +view_tt(): void //view timetable

- **TEACHER:**

teacher	//extends javax.swing
//has buttons,lables,panels ~con: Connection ~user :String ~course : String	
+teacher() -initComponents(): Void +jButton_clickActionPerformed(java.awt.event.ActionEvent evt):Void +getCourseName(): String +jButton1ActionPerformed(java.awt.event.ActionEvent evt):Void //mark attendance +jButton2ActionPerformed(java.awt.event.ActionEvent evt):Void //view attendance +jButton3ActionPerformed(java.awt.event.ActionEvent evt):Void //view OD +jButton4ActionPerformed(java.awt.event.ActionEvent evt):Void //get defaulters +jButton5ActionPerformed(java.awt.event.ActionEvent evt):Void //report	

mark_teacher //to mark teacher's attendance
//has buttons,labels,table ~con : Connection ~user: String
+mark_teacher() -initComponents() : Void +jButton1ActionPerformed(java.awt.event.ActionEvent evt): Void //reads from jtable (student,status) +add():Void //adds the names of the students to the table

view_teacher //to view the attendance marked
//has labels,buttons,table,text field ~con :Connection ~user :String
+view_teacher() -initComponents() :Void +Button_viewActionPerformed(java.awt.event.ActionEvent evt):Void //view action +jButton_clearActionPerformed(java.awt.event.ActionEvent evt):Void //clear table +get_attendance(String date):Void //shows attendance based on date

teacher_update
//buttons,labels,panels,text field,combobox ~con :Connection ~user :String
+teacher_update() -initComponents() : Void +jButton1ActionPerformed(java.awt.event.ActionEvent evt):Void //update action

teacher_report //consolidated report

```
//labels,buttons,table
~con : Connection
~user :String
~a :ArrayList<String>

+teacher_report()
-initComponents() : Void
+get_totalhours():int //gets total number of classes
+calc_attendance():Void
```

teacher_info //to sign in course

```
//labels,buttons,combobox
~con :Connection
~user :String

+teacher_info()
-initComponents() : Void            //gui set up
+jComboBox1ActionPerformed(java.awt.event.ActionEvent evt):Void //to get the course
```

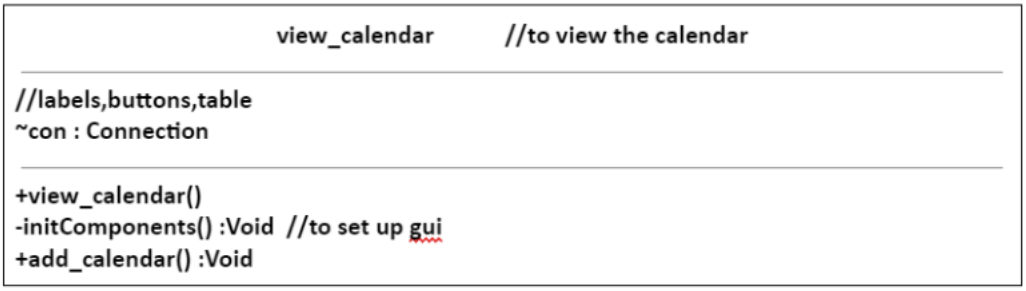
get_default //get defaulted students who have attendance <75

```
//labels,table,buttons
~con : Connection
~user :String

+get_default()
-initComponents() : Void  //to set up gui
+get_defaulters() : Void  //to get defaulters
```

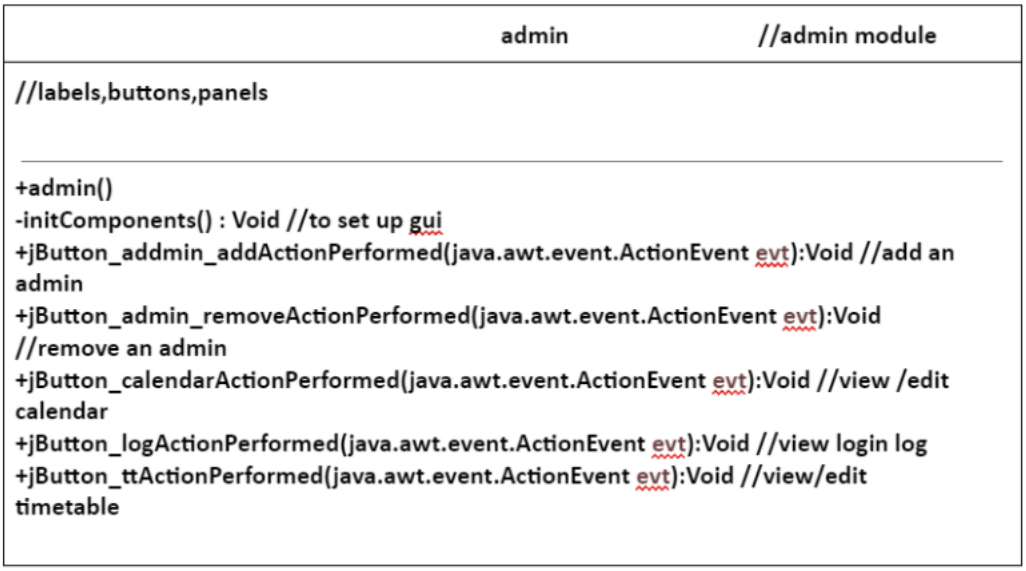
view_od //to get students who have ODs

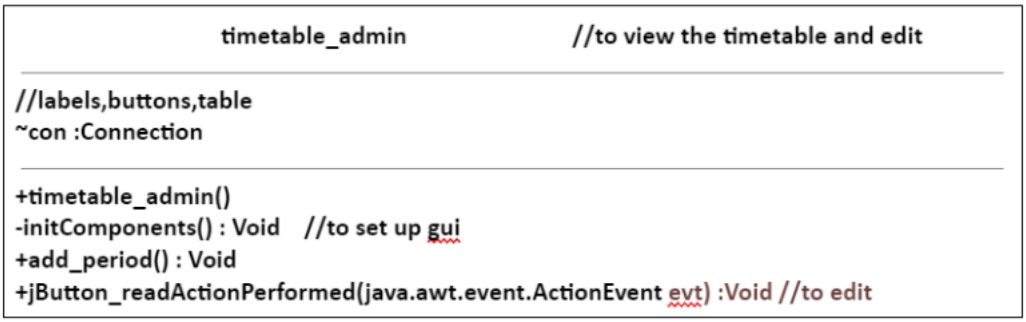
```
//labels,buttons,table
~con :Connection
~course :String

+view_od()
-initComponents() : Void
+viewOD():Void   //to get list of students with OD in a course
```

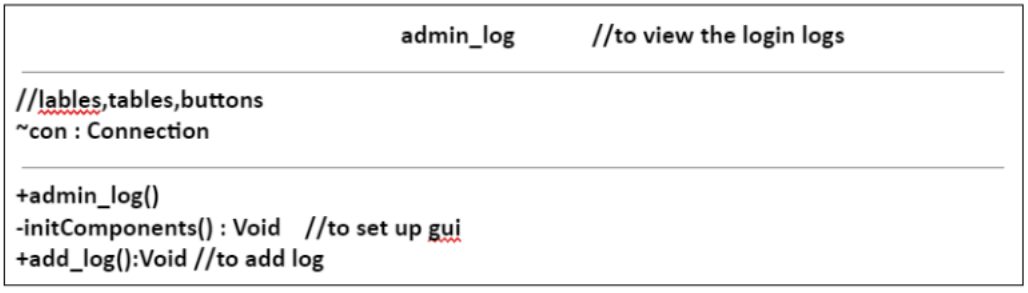
- **view_calendar (common to both student and teacher)**



- **Admin module**







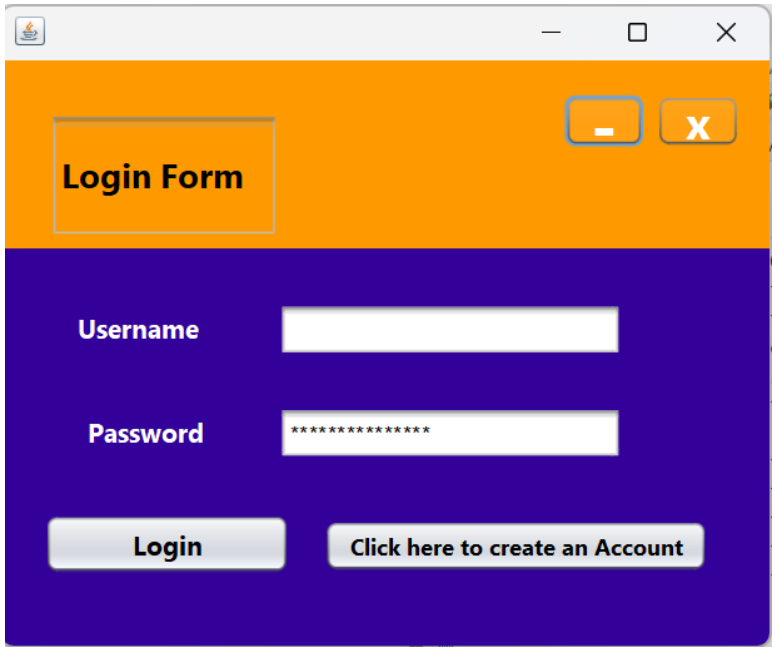
add_admin //to add an admin
//labels,buttons,text field ~con : Connection
-initComponents() : Void +jButton1ActionPerformed(java.awt.event.ActionEvent evt): Void //add admin

remove_admin //to remove an admin
//labels,buttons,text field ~con : Connection
+remove_admin() -initComponents() : Void +jButton1ActionPerformed(java.awt.event.ActionEvent evt): Void //remove admin

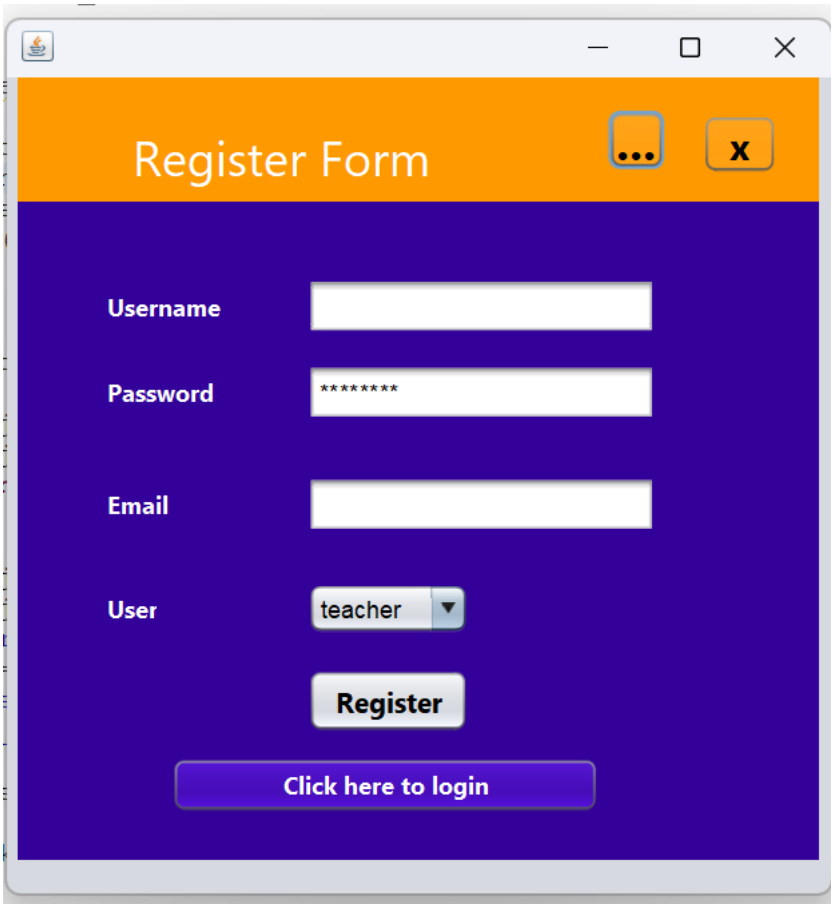
calendar //to view or update calendar of events
//labels,buttons,text field ~con : Connection
+calendar() -initComponents() : Void +add_event():Void //add events for 6 months +jjButton_viewActionPerformed(java.awt.event.ActionEvent evt):Void //view +jButton_updateActionPerformed(java.awt.event.ActionEvent evt):Void //update

5.MODULE SPLIT UP:

- **5.1 Login Module**
  - The login module serves as the gateway to system access, authenticating users through credential verification.
    The login module prompts users for a username and password, and upon successful verification, grants access to the functionalities associated with their assigned role (student/teacher/admin). This fundamental process ensures secure authentication and tailored access to specific features based on user roles within the system.



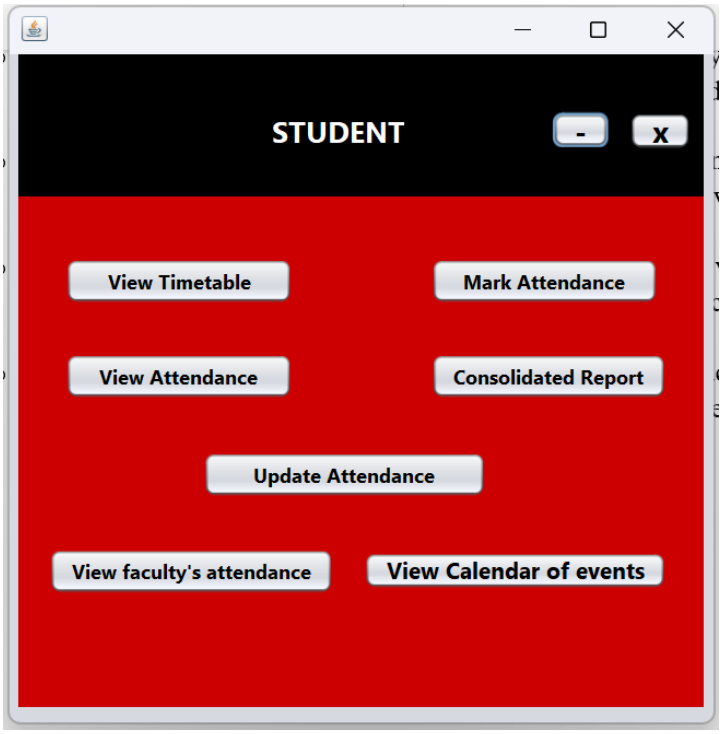
- **5.2 Register Module**
  - The register module collects essential user information, including a username, password, email address, and user type. This module facilitates the creation of new user accounts, ensuring data accuracy and security. Upon successful registration, users gain access to the system with specified roles or permissions based on the provided user type.



- **5.3 Student module**

  The student module offers a range of functionalities, empowering students with access to their academic information:

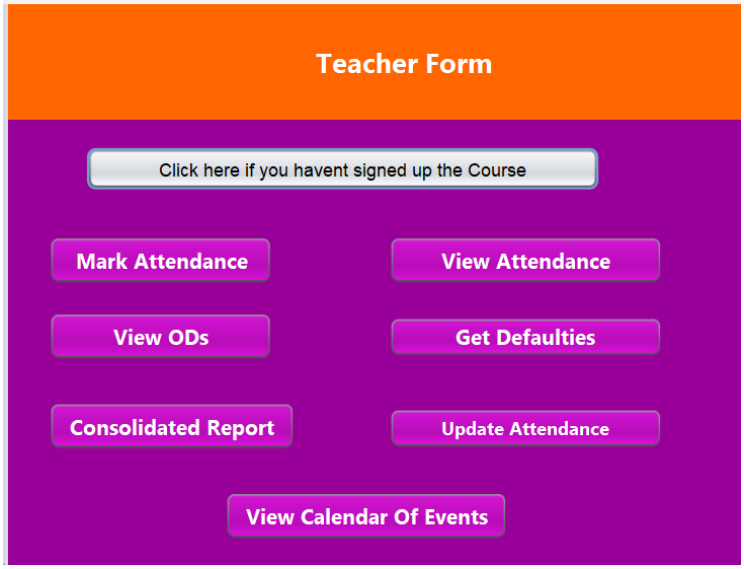
  - **View Timetable**: Students can easily access and view their class schedules through the timetable feature.
  - **Mark Attendance**: This feature allows students to mark their own attendance, promoting a proactive engagement in their academic responsibilities.
  - **View Attendance**: Students can check their attendance records to stay informed about their class attendance history.
  - **Update Attendance**: In cases of discrepancies, students may request updates or corrections to their attendance records, ensuring data accuracy.
  - **Consolidated Attendance Report:** Students can generate and review consolidated attendance reports, offering a comprehensive overview of their attendance across different classes.
  - **View Faculty Attendance:** This feature enables students to view the attendance records of faculty members, fostering transparency in the academic environment.
  - **View Calendar of Events:** Students have the capability to access and review a calendar of events. This feature keeps them informed about working days and holidays of the semester.



- **5.4 Teacher Module**

  The teacher module provides educators with a suite of functionalities for efficient class management and communication:

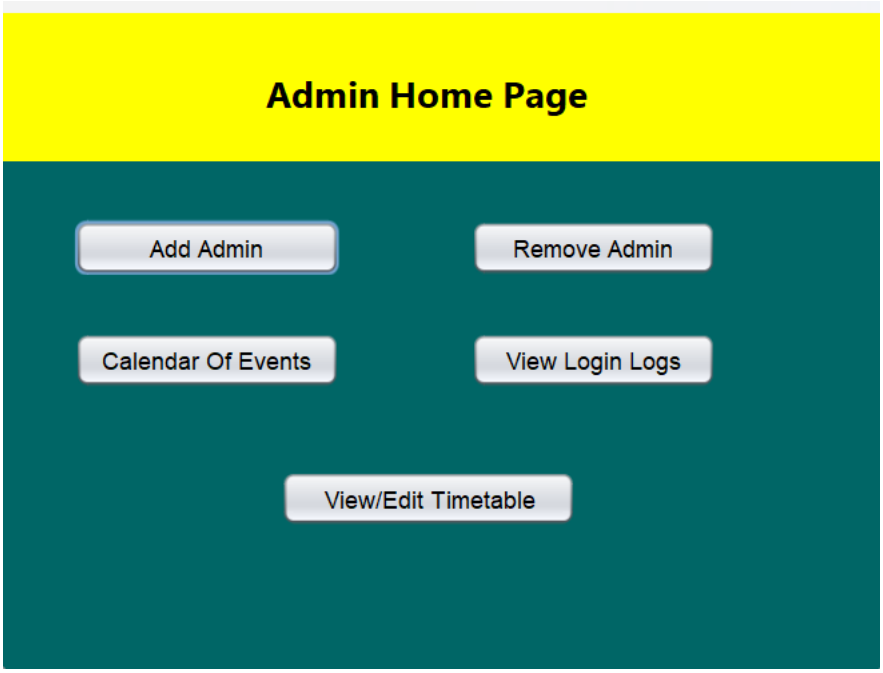
  - **Specify Course:** Teachers commence by specifying the course they are instructing, ensuring accurate alignment of attendance records and academic information.
  - **Mark Class Attendance:** Once the course is specified, teachers can efficiently mark attendance for their respective classes, streamlining the tracking process.
  - **View Marked Attendance**: The module allows teachers to easily review and monitor the attendance records they've marked for students enrolled in the specified course**.**
  - **Update Attendance**: Teachers have the flexibility to make necessary updates or corrections to attendance records, maintaining accuracy in student data.
  - **On Duty Status (ODS):** ODs functionality allows teachers to view the list of students who have applied for On Duty status for specific dates, providing insights into their professional commitments and responsibilities.
  - **Get Defaulters:** Identify students with attendance below 75% for the specified course, facilitating targeted interventions for those who may need additional support**.**
  - **Consolidated Report**: Generate comprehensive reports that consolidate attendance data for the specified course, aiding in analysis and decision-making.
  - **View Calendar of Events**: Teachers can stay informed about upcoming events and activities related to the specified course through the calendar feature, enhancing communication and participation in course-related events.



- **5.5 Admin Module**

  The admin module provides administrators with essential tools for system management and oversight:

  - **Add Admin:** Administrators can add new administrative users, expanding the team responsible for system management.
  - **Remove Admin**: This functionality allows administrators to remove or deactivate administrative accounts when necessary, ensuring secure access control.
  - **View Login Log:** Admins can review a detailed log of login activities, tracking access to the system for security and audit purposes**.**
  - **Update and View Calendar of Events**: Admins have the capability to update and view the calendar of events, ensuring accurate and timely communication of important dates within the organization.
  - **Update and View Timetable:** The module facilitates administrators in updating and viewing the timetable, providing a centralized overview of scheduled activities.



6.IMPLEMENTATION

- **LOGIN**

```
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;

import javax.swing.JOptionPane;
import java.time.LocalDateTime;
import java.time.format.DateTimeFormatter;


public class LoginRegisterFrame extends javax.swing.JFrame {

    Connection con=MyConnection.getConnection();
   public static String username;
    public LoginRegisterFrame() {
        initComponents();
    }


    private void initComponents() {

        jPanel1 = new javax.swing.JPanel();
        jPanel2 = new javax.swing.JPanel();
        jTextField1 = new javax.swing.JTextField();
        jButton1 = new javax.swing.JButton();
        jButton_cancel = new javax.swing.JButton();
        jLabel3 = new javax.swing.JLabel();
        jLabel1 = new javax.swing.JLabel();
        jTextField_username = new javax.swing.JTextField();
        jButton_login = new javax.swing.JButton();
        jButton_register = new javax.swing.JButton();
        jPasswordField_login = new javax.swing.JPasswordField();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jPanel1.setBackground(new java.awt.Color(51, 0, 153));

        jPanel2.setBackground(new java.awt.Color(255, 153, 0));

        jTextField1.setBackground(new java.awt.Color(255, 153, 0));
        jTextField1.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
        jTextField1.setText("Login Form");

        jButton1.setBackground(new java.awt.Color(255, 153, 0));
        jButton1.setFont(new java.awt.Font("Segoe UI", 1, 36)); // NOI18N
        jButton1.setForeground(new java.awt.Color(255, 255, 255));
        jButton1.setText("-");
```

```
        jButton_cancel.setBackground(new java.awt.Color(255, 153, 0));
        jButton_cancel.setFont(new java.awt.Font("Segoe UI", 1, 24)); // NOI18N
        jButton_cancel.setForeground(new java.awt.Color(255, 255, 255));
        jButton_cancel.setText("x");
        jButton_cancel.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_cancelActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(26, 26, 26)
                .addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED_SIZE,
122, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(jButton1)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addComponent(jButton_cancel, javax.swing.GroupLayout.PREFERRED_SIZE,
45, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(16, 16, 16))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(28, 28, 28)
                .addComponent(jTextField1, javax.swing.GroupLayout.DEFAULT_SIZE, 66,
Short.MAX_VALUE)
                .addContainerGap())
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(18, 18, 18)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING, false)
                    .addComponent(jButton_cancel,
javax.swing.GroupLayout.PREFERRED_SIZE, 0, Short.MAX_VALUE)
                    .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, 28,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );

        jLabel3.setBackground(new java.awt.Color(255, 255, 255));
        jLabel3.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
```

```
        jLabel3.setForeground(new java.awt.Color(255, 255, 255));
        jLabel3.setText("Username");

        jLabel1.setBackground(new java.awt.Color(255, 255, 255));
        jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
        jLabel1.setForeground(new java.awt.Color(255, 255, 255));
        jLabel1.setText("Password");

        jTextField_username.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jTextField_usernameActionPerformed(evt);
            }
        });

        jButton_login.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
        jButton_login.setText("Login");
        jButton_login.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_loginActionPerformed(evt);
            }
        });

        jButton_register.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
        jButton_register.setText("Click here to create an Account");
        jButton_register.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_registerActionPerformed(evt);
            }
        });

        jPasswordField_login.setText("jPasswordField1");

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(41, 41, 41)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRA
ILING)
                    .addComponent(jLabel1)
                    .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, 67,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(40, 40, 40)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING, false)
```

```
                .addComponent(jTextField_username)
                .addComponent(jPasswordField_login,
javax.swing.GroupLayout.DEFAULT_SIZE, 183, Short.MAX_VALUE))
            .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addContainerGap(23, Short.MAX_VALUE)
            .addComponent(jButton_login, javax.swing.GroupLayout.PREFERRED_SIZE,
131, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(18, 18, 18)
            .addComponent(jButton_register)
            .addGap(33, 33, 33))
    );
    jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(29, 29, 29)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jTextField_username,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(27, 27, 27)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                .addComponent(jLabel1)
                .addComponent(jPasswordField_login,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(29, 29, 29)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                .addComponent(jButton_login)
                .addComponent(jButton_register))
            .addGap(0, 39, Short.MAX_VALUE))
    );

    javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
    getContentPane().setLayout(layout);
    layout.setHorizontalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
            .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        );

        pack();
    }// </editor-fold>

    public void jButton_loginActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        PreparedStatement ps;
        ResultSet rs = null;
        username = jTextField_username.getText();
        String pass=String.valueOf(jPasswordField_login.getPassword());

        String query="SELECT * FROM login_info WHERE username =? AND password
=?";

        try
        {
            ps=MyConnection.getConnection().prepareStatement(query);
            ps.setString(1,username);
            ps.setString(2,pass);
            rs=ps.executeQuery();

            if (rs.next())
            {   JOptionPane.showMessageDialog(null,"Login successful!");
                    String q="select type from login_info where
username='"+username+"';";
                    Statement st=con.createStatement();
                    ResultSet rs1=st.executeQuery(q);
                    rs1.next();
                    String ch=rs1.getString("type");

                    String date=java.time.LocalDate.now().toString();
                    String time=java.time.LocalTime.now().toString();
                    String q1="insert into login_log
values('"+username+"','"+date+"','"+time+"','"+ch+"');";
                    Statement st1=con.createStatement();
                    st1.executeUpdate(q1);


                            if (ch.equals("student"))
                            {          student s= new student();
                            s.setVisible(true);
                            this.dispose();
                            }
```

```
                        else if (ch.equals("teacher"))
                        {
                                teacher t=new teacher();
                                t.setVisible(true);
                        }
                        else if (ch.equals("admin"))
                        {
                                admin a=new admin();
                                a.setVisible(true);
                        }

            }
            else
                JOptionPane.showMessageDialog(null,"Incorrect username or password");
        }
        catch(SQLException e)
        {
            System.out.println(e);
        }
    }

    public void jButton_registerActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
          Registerform rf= new Registerform();
          rf.setVisible(true);
    }


    public void jButton_cancelActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        System.exit(0);
    }


    public static void main(String args[]) {

        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(LoginRegisterFrame.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {
```

```
java.util.logging.Logger.getLogger(LoginRegisterFrame.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(LoginRegisterFrame.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(LoginRegisterFrame.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
        }


        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new LoginRegisterFrame().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    public javax.swing.JButton jButton1;
    public javax.swing.JButton jButton_cancel;
    public javax.swing.JButton jButton_login;
    public javax.swing.JButton jButton_register;
    public javax.swing.JLabel jLabel1;
    public javax.swing.JLabel jLabel3;
    public javax.swing.JPanel jPanel1;
    public javax.swing.JPanel jPanel2;
    public javax.swing.JPasswordField jPasswordField_login;
    public javax.swing.JTextField jTextField1;
    public javax.swing.JTextField jTextField_username;
    // End of variables declaration
}
```

- **Register Form**

```
import java.sql.PreparedStatement;
import java.sql.SQLException;
import javax.swing.JOptionPane;


public class Registerform extends javax.swing.JFrame {


    public Registerform() {
        initComponents();
    }
```

```
    private void initComponents() {

        jTextField2 = new javax.swing.JTextField();
        jPanel1 = new javax.swing.JPanel();
        jPanel2 = new javax.swing.JPanel();
        jButton_register_minimize = new javax.swing.JButton();
        jButton_register_close = new javax.swing.JButton();
        jLabel5 = new javax.swing.JLabel();
        jLabel1 = new javax.swing.JLabel();
        jLabel2 = new javax.swing.JLabel();
        jTextField_register_username = new javax.swing.JTextField();
        jLabel3 = new javax.swing.JLabel();
        jTextField_register_email = new javax.swing.JTextField();
        jButtonRegister = new javax.swing.JButton();
        jButton_gotologin = new javax.swing.JButton();
        jPasswordField_register = new javax.swing.JPasswordField();
        jLabel4 = new javax.swing.JLabel();
        jComboBox1 = new javax.swing.JComboBox<>();

        jTextField2.setText("jTextField2");

        setDefaultCloseOperation(javax.swing.WindowConstants.DISPOSE_ON_CLOSE);

        jPanel1.setBackground(new java.awt.Color(51, 0, 153));

        jPanel2.setBackground(new java.awt.Color(255, 153, 0));

        jButton_register_minimize.setBackground(new java.awt.Color(255, 153, 0));
        jButton_register_minimize.setFont(new java.awt.Font("Segoe UI", 1, 24)); //
NOI18N
        jButton_register_minimize.setText("-");
        jButton_register_minimize.addActionListener(new java.awt.event.ActionListener()
{
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_register_minimizeActionPerformed(evt);
            }
        });

        jButton_register_close.setBackground(new java.awt.Color(255, 153, 0));
        jButton_register_close.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
        jButton_register_close.setText("x");
        jButton_register_close.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_register_closeActionPerformed(evt);
            }
        });

        jLabel5.setBackground(new java.awt.Color(255, 102, 0));
        jLabel5.setFont(new java.awt.Font("Segoe UI", 0, 24)); // NOI18N
        jLabel5.setForeground(new java.awt.Color(255, 255, 255));
```

```
        jLabel5.setText("Register Form");

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(57, 57, 57)
                .addComponent(jLabel5)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
88, Short.MAX_VALUE)
                .addComponent(jButton_register_minimize,
javax.swing.GroupLayout.PREFERRED_SIZE, 29,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(18, 18, 18)
                .addComponent(jButton_register_close)
                .addGap(21, 21, 21))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(16, 16, 16)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                    .addGroup(jPanel2Layout.createSequentialGroup()
                        .addGap(6, 6, 6)
                        .addComponent(jLabel5, javax.swing.GroupLayout.DEFAULT_SIZE, 34,
Short.MAX_VALUE))
                    .addGroup(jPanel2Layout.createSequentialGroup()

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                            .addComponent(jButton_register_close,
javax.swing.GroupLayout.PREFERRED_SIZE, 30,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jButton_register_minimize,
javax.swing.GroupLayout.PREFERRED_SIZE, 30,
javax.swing.GroupLayout.PREFERRED_SIZE))
                        .addGap(0, 0, Short.MAX_VALUE)))
                .addContainerGap())
        );

        jLabel1.setBackground(new java.awt.Color(255, 255, 255));
        jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
        jLabel1.setForeground(new java.awt.Color(255, 255, 255));
        jLabel1.setText("Username");

        jLabel2.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
```

```
        jLabel2.setForeground(new java.awt.Color(255, 255, 255));
        jLabel2.setText("Password");

        jLabel3.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
        jLabel3.setForeground(new java.awt.Color(255, 255, 255));
        jLabel3.setText("Email");

        jButtonRegister.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
        jButtonRegister.setText("Register");
        jButtonRegister.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButtonRegisterActionPerformed(evt);
            }
        });

        jButton_gotologin.setBackground(new java.awt.Color(51, 0, 153));
        jButton_gotologin.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
        jButton_gotologin.setForeground(new java.awt.Color(255, 255, 255));
        jButton_gotologin.setText("Click here to login");
        jButton_gotologin.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_gotologinActionPerformed(evt);
            }
        });

        jPasswordField_register.setText("password");

        jLabel4.setBackground(new java.awt.Color(255, 255, 255));
        jLabel4.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
        jLabel4.setForeground(new java.awt.Color(255, 255, 255));
        jLabel4.setText("User");

        jComboBox1.setModel(new javax.swing.DefaultComboBoxModel<>(new String[] {
"teacher", "student" }));

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                    .addGroup(jPanel1Layout.createSequentialGroup()
                        .addGap(76, 76, 76)
                        .addComponent(jButton_gotologin,
javax.swing.GroupLayout.PREFERRED_SIZE, 214,
javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(44, 44, 44)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING, false)
                        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()
                                .addComponent(jLabel1,
javax.swing.GroupLayout.PREFERRED_SIZE, 82,
javax.swing.GroupLayout.PREFERRED_SIZE)
                                .addGap(18, 18, 18))
                            .addGroup(jPanel1Layout.createSequentialGroup()
                                .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED_SIZE, 69,
javax.swing.GroupLayout.PREFERRED_SIZE)
                                .addGap(31, 31, 31)))

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING, false)
                            .addComponent(jTextField_register_username)
                            .addComponent(jPasswordField_register,
javax.swing.GroupLayout.DEFAULT_SIZE, 174, Short.MAX_VALUE)))
                        .addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                            .addComponent(jLabel3,
javax.swing.GroupLayout.PREFERRED_SIZE, 82,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jLabel4))
                        .addGap(18, 18, 18)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                            .addComponent(jTextField_register_email)
                            .addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING, false)
                                .addComponent(jButtonRegister,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
                                .addComponent(jComboBox1, 0,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                            .addGap(0, 91, Short.MAX_VALUE))))))
```

```
            .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(35, 35, 35)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 34,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jTextField_register_username,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jLabel2)
                    .addComponent(jPasswordField_register,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(28, 28, 28)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jLabel3)
                    .addComponent(jTextField_register_email,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(25, 25, 25)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jLabel4)
                    .addComponent(jComboBox1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
17, Short.MAX_VALUE)
                .addComponent(jButtonRegister)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                .addComponent(jButton_gotologin)
                .addGap(24, 24, 24))
        );
```

```
        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addContainerGap())
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
layout.createSequentialGroup()
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(0, 17, Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>

    private void jButton_register_minimizeActionPerformed(java.awt.event.ActionEvent
evt) {
        // TODO add your handling code here:
    }

    private void jButtonRegisterActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:

        String username = jTextField_register_username.getText();
        String pass=String.valueOf(jPasswordField_register.getPassword());
        String email=jTextField_register_email.getText();
        String type =jComboBox1.getSelectedItem().toString();


        PreparedStatement ps;
        String query="INSERT INTO login_info VALUES (?,?,?,?)";
        try
        {
            ps=MyConnection.getConnection().prepareStatement(query);

            ps.setString(1,username);
            ps.setString(2,pass);
            ps.setString(3,email);
            ps.setString(4,type);


            if (ps.executeUpdate()>0)
```

```
            {
                JOptionPane.showMessageDialog(null,"NEW USER ADDED");
            }


        }
        catch(SQLException e)
        {
          JOptionPane.showMessageDialog(null,"USERNAME ALREADY EXISTS.Provide a
new username");
        }
     }

    private void jButton_register_closeActionPerformed(java.awt.event.ActionEvent evt)
{
        // TODO add your handling code here:
        System.exit(0);
    }

    private void jButton_gotologinActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
          LoginRegisterFrame l = new LoginRegisterFrame();
          this.dispose();
          l.setVisible(true);
    }



    // Variables declaration - do not modify
    private javax.swing.JButton jButtonRegister;
    private javax.swing.JButton jButton_gotologin;
    private javax.swing.JButton jButton_register_close;
    private javax.swing.JButton jButton_register_minimize;
    private javax.swing.JComboBox<String> jComboBox1;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JPasswordField jPasswordField_register;
    private javax.swing.JTextField jTextField2;
    private javax.swing.JTextField jTextField_register_email;
    private javax.swing.JTextField jTextField_register_type;
    private javax.swing.JTextField jTextField_register_username;
    // End of variables declaration
}
```

- **STUDENT MODULE**

```
import javax.swing.JOptionPane;
public class student extends javax.swing.JFrame {


    public student() {
        initComponents();
    }

    private void initComponents() {

            jFrame1 = new javax.swing.JFrame();
        canvas1 = new java.awt.Canvas();
        jPanel2 = new javax.swing.JPanel();
        jPanel3 = new javax.swing.JPanel();
        jButton1 = new javax.swing.JButton();
        jButton2 = new javax.swing.JButton();
        jLabel1 = new javax.swing.JLabel();
        jButton_viewtt = new javax.swing.JButton();
        jButton_mark = new javax.swing.JButton();
        jButton_update = new javax.swing.JButton();
        jButton_consolidated = new javax.swing.JButton();
        jButton_view = new javax.swing.JButton();
        jButton_view_teacher = new javax.swing.JButton();
        jButton_view_cal = new javax.swing.JButton();

        javax.swing.GroupLayout jFrame1Layout = new
javax.swing.GroupLayout(jFrame1.getContentPane());
        jFrame1.getContentPane().setLayout(jFrame1Layout);
        jFrame1Layout.setHorizontalGroup(

jFrame1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 400, Short.MAX_VALUE)
        );
        jFrame1Layout.setVerticalGroup(

jFrame1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 300, Short.MAX_VALUE)
        );

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jPanel2.setBackground(new java.awt.Color(204, 0, 0));

        jPanel3.setBackground(new java.awt.Color(0, 0, 0));

        jButton1.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
        jButton1.setText("-");

        jButton2.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
        jButton2.setText("x");
```

```
        jButton2.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton2ActionPerformed(evt);
            }
        });

        jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
        jLabel1.setForeground(new java.awt.Color(255, 255, 255));
        jLabel1.setText("STUDENT");

        javax.swing.GroupLayout jPanel3Layout = new javax.swing.GroupLayout(jPanel3);
        jPanel3.setLayout(jPanel3Layout);
        jPanel3Layout.setHorizontalGroup(

jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel3Layout.createSequentialGroup()
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
                .addComponent(jLabel1)
                .addGap(90, 90, 90)
                .addComponent(jButton1)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                .addComponent(jButton2)
                .addGap(8, 8, 8))
        );
        jPanel3Layout.setVerticalGroup(

jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel3Layout.createSequentialGroup()
                .addGap(29, 29, 29)

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, 22,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, 23,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 35,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addContainerGap(23, Short.MAX_VALUE))
        );

        jButton_viewtt.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
        jButton_viewtt.setText("View Timetable");
        jButton_viewtt.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_viewttActionPerformed(evt);
            }
        });
```

```
jButton_mark.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
jButton_mark.setText("Mark Attendance");
jButton_mark.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton_markActionPerformed(evt);
    }
});

jButton_update.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
jButton_update.setText("Update Attendance");
jButton_update.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton_updateActionPerformed(evt);
    }
});

jButton_consolidated.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
jButton_consolidated.setText("Consolidated Report");
jButton_consolidated.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton_consolidatedActionPerformed(evt);
    }
});

jButton_view.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
jButton_view.setText("View Attendance");
jButton_view.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton_viewActionPerformed(evt);
    }
});

jButton_view_teacher.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
jButton_view_teacher.setText("View faculty's attendance");
jButton_view_teacher.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton_view_teacherActionPerformed(evt);
    }
});

jButton_view_cal.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
jButton_view_cal.setText("View Calendar of events");
jButton_view_cal.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton_view_calActionPerformed(evt);
    }
});

javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
jPanel2.setLayout(jPanel2Layout);
jPanel2Layout.setHorizontalGroup(
```

```
jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addComponent(jPanel3, javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRA
ILING)
                .addGroup(jPanel2Layout.createSequentialGroup()
                    .addGap(18, 18, 18)
                    .addComponent(jButton_view_teacher)
                    .addGap(18, 18, 18)
                    .addComponent(jButton_view_cal,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
                .addGroup(javax.swing.GroupLayout.Alignment.LEADING,
jPanel2Layout.createSequentialGroup()
                    .addGap(28, 28, 28)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING, false)
                        .addComponent(jButton_viewtt,
javax.swing.GroupLayout.DEFAULT_SIZE, 139, Short.MAX_VALUE)
                        .addComponent(jButton_view,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                        .addComponent(jButton_consolidated)
                        .addComponent(jButton_mark,
javax.swing.GroupLayout.PREFERRED_SIZE, 139,
javax.swing.GroupLayout.PREFERRED_SIZE))))
                .addGap(23, 23, 23))
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(112, 112, 112)
                .addComponent(jButton_update, javax.swing.GroupLayout.PREFERRED_SIZE,
173, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel2Layout.createSequentialGroup()
```

```
                .addComponent(jPanel3, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(37, 37, 37)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton_viewtt)
                    .addComponent(jButton_mark))
                .addGap(30, 30, 30)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton_view)
                    .addComponent(jButton_consolidated))
                .addGap(32, 32, 32)
                .addComponent(jButton_update)
                .addGap(31, 31, 31)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton_view_teacher)
                    .addComponent(jButton_view_cal,
javax.swing.GroupLayout.PREFERRED_SIZE, 23,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addContainerGap(69, Short.MAX_VALUE))
        );

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(layout.createSequentialGroup()
                        .addGap(75, 75, 75)
                        .addComponent(canvas1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                    .addGroup(layout.createSequentialGroup()
                        .addContainerGap()
                        .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)))
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
```

```
                .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(109, 109, 109)
                .addComponent(canvas1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>

    private void jButton_consolidatedActionPerformed(java.awt.event.ActionEvent evt)
{
        //Gets the consolidated report:

            consolidatedreport c=new consolidatedreport();
            c.setVisible(true);
    }

    private void jButton_viewttActionPerformed(java.awt.event.ActionEvent evt) {
        // TO view the timetable:
        timetable tt = new timetable();
        tt.setVisible(true);
    }

    private void jButton_markActionPerformed(java.awt.event.ActionEvent evt) {
        // To mark attendance:
            markAttendance m= new markAttendance();
            m.setVisible(true);

    }

    private void jButton_updateActionPerformed(java.awt.event.ActionEvent evt) {
        // To update attendance:
            Update u= new Update();
            u.setVisible(true);
    }

    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        // To close:
        this.dispose();
    }
    private void jButton_viewActionPerformed(java.awt.event.ActionEvent evt) {
        // To view Attendance:
            view_attendance v= new view_attendance();
            v.setVisible(true);

    }
```

```
    private void jButton_view_teacherActionPerformed(java.awt.event.ActionEvent evt)
{
        // To view faculty attendance
          view_teacher_attendance vt=new view_teacher_attendance();
          vt.setVisible(true);
    }

    private void jButton_view_calActionPerformed(java.awt.event.ActionEvent evt) {
        // ///VIEW CALENDAR
          view_calendar v= new view_calendar();
          v.setVisible(true);
    }



    // Variables declaration - do not modify
    private java.awt.Canvas canvas1;
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JButton jButton_consolidated;
    private javax.swing.JButton jButton_mark;
    private javax.swing.JButton jButton_update;
    private javax.swing.JButton jButton_view;
    private javax.swing.JButton jButton_view_cal;
    private javax.swing.JButton jButton_view_teacher;
    private javax.swing.JButton jButton_viewtt;
    private javax.swing.JFrame jFrame1;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JPanel jPanel3;
    // End of variables declaration
}
```

- **TEACHER MODULE**

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

import javax.swing.table.DefaultTableModel;

import java.sql.*;
public class teacher extends javax.swing.JFrame {


   Connection con;
   String user=LoginRegisterFrame.username;
   static String course;
    public teacher() {
       con=MyConnection.getConnection();
```

```
        try
        {
          String q="create table "+user+" (date varchar(20) NOT NULL,name char(30)
NOT NULL,status char(10) NOT NULL);";
          PreparedStatement st=con.prepareStatement(q);
                  if (st.executeUpdate()>0)
            {
                                System.out.println(user);
            }
        }
        catch(SQLException e)
        {

        }


          initComponents();

    }


    private void initComponents() {
          jPanel1 = new javax.swing.JPanel();
        jPanel2 = new javax.swing.JPanel();
        jLabel1 = new javax.swing.JLabel();
        jButton_click = new javax.swing.JButton();
        jButton1 = new javax.swing.JButton();
        jButton2 = new javax.swing.JButton();
        jButton3 = new javax.swing.JButton();
        jButton4 = new javax.swing.JButton();
        jButton5 = new javax.swing.JButton();
        jButton6 = new javax.swing.JButton();
        jButton7 = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jPanel1.setBackground(new java.awt.Color(153, 0, 153));
        jPanel1.setForeground(new java.awt.Color(255, 255, 255));

        jPanel2.setBackground(new java.awt.Color(255, 102, 0));

        jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
        jLabel1.setForeground(new java.awt.Color(255, 255, 255));
        jLabel1.setText("Teacher Form");

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 126,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(155, 155, 155))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(23, 23, 23)
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 28,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(25, Short.MAX_VALUE))
        );

        jButton_click.setText("Click here if you havent signed up the Course");
        jButton_click.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_clickActionPerformed(evt);
            }
        });

        jButton1.setBackground(new java.awt.Color(153, 0, 153));
        jButton1.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
        jButton1.setForeground(new java.awt.Color(255, 255, 255));
        jButton1.setText("Mark Attendance");
        jButton1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton1ActionPerformed(evt);
            }
        });

        jButton2.setBackground(new java.awt.Color(153, 0, 153));
        jButton2.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
        jButton2.setForeground(new java.awt.Color(255, 255, 255));
        jButton2.setText("View Attendance");
        jButton2.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton2ActionPerformed(evt);
            }
        });

        jButton3.setBackground(new java.awt.Color(153, 0, 153));
        jButton3.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
        jButton3.setForeground(new java.awt.Color(255, 255, 255));
        jButton3.setText("View ODs");
        jButton3.addActionListener(new java.awt.event.ActionListener() {
```

```
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton3ActionPerformed(evt);
        }
    });

    jButton4.setBackground(new java.awt.Color(153, 0, 153));
    jButton4.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
    jButton4.setForeground(new java.awt.Color(255, 255, 255));
    jButton4.setText("Get Defaulties");
    jButton4.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton4ActionPerformed(evt);
        }
    });

    jButton5.setBackground(new java.awt.Color(153, 0, 153));
    jButton5.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
    jButton5.setForeground(new java.awt.Color(255, 255, 255));
    jButton5.setText("Consolidated Report");
    jButton5.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton5ActionPerformed(evt);
        }
    });

    jButton6.setBackground(new java.awt.Color(153, 0, 153));
    jButton6.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N
    jButton6.setForeground(new java.awt.Color(255, 255, 255));
    jButton6.setText("Update Attendance");
    jButton6.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton6ActionPerformed(evt);
        }
    });

    jButton7.setBackground(new java.awt.Color(153, 0, 153));
    jButton7.setFont(new java.awt.Font("Segoe UI", 1, 14)); // NOI18N
    jButton7.setForeground(new java.awt.Color(255, 255, 255));
    jButton7.setText("View Calendar Of Events");
    jButton7.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton7ActionPerformed(evt);
        }
    });

    javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
    jPanel1.setLayout(jPanel1Layout);
    jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
            .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(26, 26, 26)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                    .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE,
148, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE,
148, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jButton5))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
61, Short.MAX_VALUE)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                    .addComponent(jButton4, javax.swing.GroupLayout.PREFERRED_SIZE,
181, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE,
181, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jButton6, javax.swing.GroupLayout.PREFERRED_SIZE,
181, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(52, 52, 52))
            .addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                    .addGroup(jPanel1Layout.createSequentialGroup()
                        .addGap(51, 51, 51)
                        .addComponent(jButton_click,
javax.swing.GroupLayout.PREFERRED_SIZE, 338,
javax.swing.GroupLayout.PREFERRED_SIZE))
                    .addGroup(jPanel1Layout.createSequentialGroup()
                        .addGap(142, 142, 142)
                        .addComponent(jButton7)))
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(18, 18, 18)
                .addComponent(jButton_click)
                .addGap(30, 30, 30)
```

```
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton1)
                    .addComponent(jButton2))
                .addGap(18, 18, 18)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton3)
                    .addComponent(jButton4, javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(27, 27, 27)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton5)
                    .addComponent(jButton6, javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
27, Short.MAX_VALUE)
                .addComponent(jButton7)
                .addGap(18, 18, 18))
        );

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addContainerGap())
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(0, 0, Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>


    private void jButton_clickActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
```

```
        teacher_info t=new teacher_info();
        t.setVisible(true);
        //getCourseName();
    }

    public String getCourseName()
    {
        String q="select course from teacher_info where teacher='"+user+"';";
       try {
                    Statement st=con.createStatement();
                    ResultSet rs=st.executeQuery(q);
                    rs.next();
                    course=rs.getString(1);
                    //System.out.println(course);
       }
       catch(SQLException e)
       {
         System.out.println("error in teacher  "+e);
       }
       return course;
    }

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
       //:///mark attendance
         mark_teacher m=new mark_teacher();
         m.setVisible(true);
    }


    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
       // VIEW ATTENDANCE
         view_teacher v=new view_teacher();
         v.setVisible(true);
    }

    private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
       // VIEW ODS
         view_od v=new view_od();
         v.setVisible(true);

    }
    private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
       // get defaulters
         get_default g=new get_default();
         g.setVisible(true);
    }

    private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {
       // get consolidated report
         teacher_report t= new teacher_report();
         t.setVisible(true);
```

```
    }

    private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) {
        // update teacher attendance
          teacher_update tu=new teacher_update();
          tu.setVisible(true);
    }

    private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) {
        // view calendar
          view_calendar v= new view_calendar();
          v.setVisible(true);
    }



    // Variables declaration - do not modify
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JButton jButton3;
    private javax.swing.JButton jButton4;
    private javax.swing.JButton jButton5;
    private javax.swing.JButton jButton6;
    private javax.swing.JButton jButton7;
    private javax.swing.JButton jButton_click;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    // End of variables declaration
}
```

- **ADMIN MODULE**

```
public class admin extends javax.swing.JFrame {

    /**
     * Creates new form admin
     */
    public admin() {
        initComponents();
    }

    private void initComponents() {


        jPanel1 = new javax.swing.JPanel();
        jPanel2 = new javax.swing.JPanel();
        jLabel1 = new javax.swing.JLabel();
        jButton_addmin_add = new javax.swing.JButton();
        jButton_admin_remove = new javax.swing.JButton();
        jButton_calendar = new javax.swing.JButton();
        jButton_log = new javax.swing.JButton();
```

```
        jButton_tt = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jPanel1.setBackground(new java.awt.Color(0, 102, 102));

        jPanel2.setBackground(new java.awt.Color(255, 255, 0));

        jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 18)); // NOI18N
        jLabel1.setText("Admin Home Page");

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 186,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(123, 123, 123))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                .addContainerGap(27, Short.MAX_VALUE)
                .addComponent(jLabel1)
                .addGap(22, 22, 22))
        );

        jButton_addmin_add.setText("Add Admin");
        jButton_addmin_add.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_addmin_addActionPerformed(evt);
            }
        });

        jButton_admin_remove.setText("Remove Admin");
        jButton_admin_remove.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton_admin_removeActionPerformed(evt);
            }
        });

        jButton_calendar.setText("Calendar Of Events");
        jButton_calendar.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```
            jButton_calendarActionPerformed(evt);
        }
    });

    jButton_log.setText("View Login Logs");
    jButton_log.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton_logActionPerformed(evt);
        }
    });

    jButton_tt.setText("View/Edit Timetable");
    jButton_tt.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton_ttActionPerformed(evt);
        }
    });

    javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
    jPanel1.setLayout(jPanel1Layout);
    jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(37, 37, 37)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING, false)
                        .addComponent(jButton_calendar,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
                        .addComponent(jButton_addmin_add,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
                    .addGap(65, 65, 65)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING, false)
                        .addComponent(jButton_admin_remove,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
                        .addComponent(jButton_log,
javax.swing.GroupLayout.DEFAULT_SIZE, 123, Short.MAX_VALUE)))
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(140, 140, 140)
```

```
                    .addComponent(jButton_tt, javax.swing.GroupLayout.PREFERRED_SIZE,
148, javax.swing.GroupLayout.PREFERRED_SIZE)))
                .addContainerGap(84, Short.MAX_VALUE))
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(29, 29, 29)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton_addmin_add)
                    .addComponent(jButton_admin_remove))
                .addGap(28, 28, 28)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BAS
ELINE)
                    .addComponent(jButton_calendar)
                    .addComponent(jButton_log))
                .addGap(41, 41, 41)
                .addComponent(jButton_tt)
                .addGap(0, 73, Short.MAX_VALUE))
        );

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        );

        pack();
    }// </editor-fold>

    private void jButton_addmin_addActionPerformed(java.awt.event.ActionEvent evt) {
       add_admin aa=new add_admin();
        aa.setVisible(true);
    }

    private void jButton_admin_removeActionPerformed(java.awt.event.ActionEvent
evt) {
```

```
        // To remove an admin
            remove_admin r=new remove_admin();
            r.setVisible(true);
    }

    private void jButton_calendarActionPerformed(java.awt.event.ActionEvent evt) {
            //to view/edit calendar of events
        calendar c= new calendar();
        c.setVisible(true);
    }

    private void jButton_logActionPerformed(java.awt.event.ActionEvent evt) {
            //to view login log
            admin_log a= new admin_log();
            a.setVisible(true);
    }

    private void jButton_ttActionPerformed(java.awt.event.ActionEvent evt) {
        // TO view/edit timetable:
            timetable_admin t=new timetable_admin();
            t.setVisible(true);
    }


    // Variables declaration - do not modify
    private javax.swing.JButton jButton_addmin_add;
    private javax.swing.JButton jButton_admin_remove;
    private javax.swing.JButton jButton_calendar;
    private javax.swing.JButton jButton_log;
    private javax.swing.JButton jButton_tt;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    // End of variables declaration
}
```

7.DATABASE DESIGN

Table login_info (stores the login details)

```
mysql> desc login_info;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| username | varchar(100) | NO   | PRI | NULL    |       |
| password | varchar(40)  | NO   |     | NULL    |       |
| email    | varchar(50)  | NO   |     | NULL    |       |
| type     | char(20)     | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
```

Table timetable (stores the timetable of the class)

```
+-------+----------+------+-----+---------+-------+
| Field | Type     | Null | Key | Default | Extra |
+-------+----------+------+-----+---------+-------+
| day   | char(50) | NO   |     | NULL    |       |
| I     | char(50) | YES  |     | NULL    |       |
| II    | char(50) | YES  |     | NULL    |       |
| III   | char(50) | YES  |     | NULL    |       |
| IV    | char(50) | YES  |     | NULL    |       |
| V     | char(50) | YES  |     | NULL    |       |
+-------+----------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

Table login_log (stores the login time and date of a user)

```
mysql> desc login_log;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| name  | char(30)    | YES  |     | NULL    |       |
| date  | varchar(30) | YES  |     | NULL    |       |
| time  | varchar(30) | YES  |     | NULL    |       |
| type  | char(20)    | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

Table teacher_info (stores teacher username and course)

```
mysql> desc teacher_info;
+---------+----------+------+-----+---------+-------+
| Field   | Type     | Null | Key | Default | Extra |
+---------+----------+------+-----+---------+-------+
| teacher | char(40) | NO   | PRI | NULL    |       |
| course  | char(10) | NO   |     | NULL    |       |
+---------+----------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

Table used for storing student attendance

```
mysql> desc ananth;
+-------+------------+------+-----+---------+-------+
| Field | Type       | Null | Key | Default | Extra |
+-------+------------+------+-----+---------+-------+
| date  | varchar(10) | NO   | PRI | NULL    |       |
| OOPS  | char(10)    | YES  |     | NULL    |       |
| DS    | char(10)    | YES  |     | NULL    |       |
| UHV   | char(10)    | YES  |     | NULL    |       |
| DPSD  | char(10)    | YES  |     | NULL    |       |
| TAMIL | char(10)    | YES  |     | NULL    |       |
| MATHS | char(10)    | YES  |     | NULL    |       |
| LAB   | char(10)    | YES  |     | NULL    |       |
+-------+------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

Table used for storing the class attendance marked by the teacher

```
mysql> desc sr;
+--------+------------+------+-----+---------+-------+
| Field  | Type       | Null | Key | Default | Extra |
+--------+------------+------+-----+---------+-------+
| date   | varchar(20) | NO   |     | NULL    |       |
| name   | char(30)    | NO   |     | NULL    |       |
| status | char(10)    | NO   |     | NULL    |       |
+--------+------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

Table calendar (To store the calendar of events)

```
mysql> desc calendar;
+--------+------------+------+-----+---------+-------+
| Field  | Type       | Null | Key | Default | Extra |
+--------+------------+------+-----+---------+-------+
| date   | varchar(30) | NO   | PRI | NULL    |       |
| day    | char(30)    | YES  |     | NULL    |       |
| status | char(20)    | YES  |     | NULL    |       |
+--------+------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

8.OUTPUT SCREENSHOTS

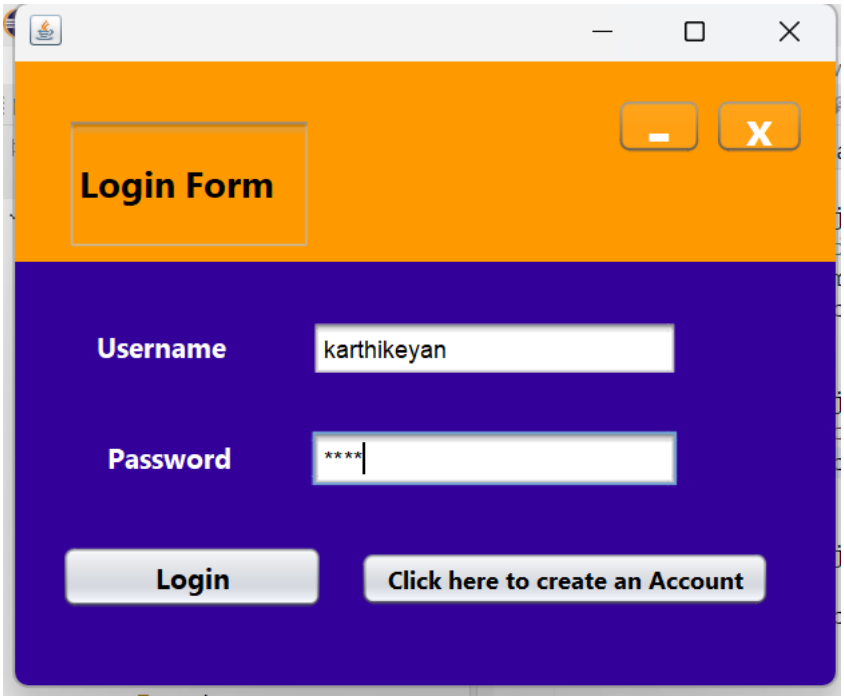


FIG 8.1 LOGIN FORM

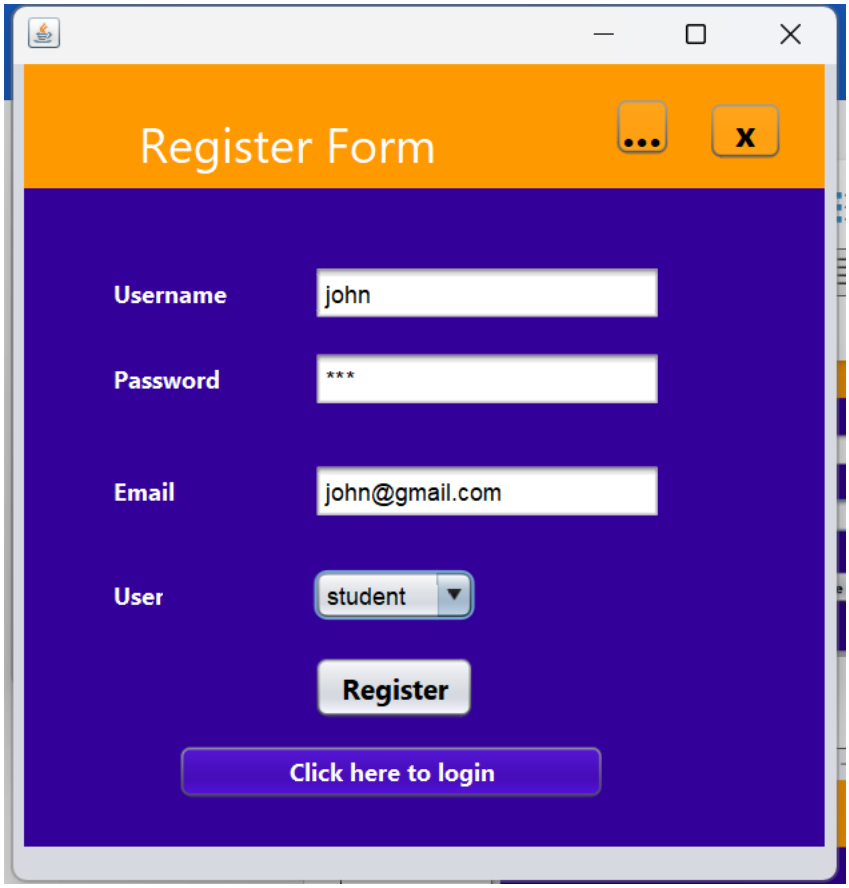


FIG 8.2 REGISTER FORM

Sign In as a student

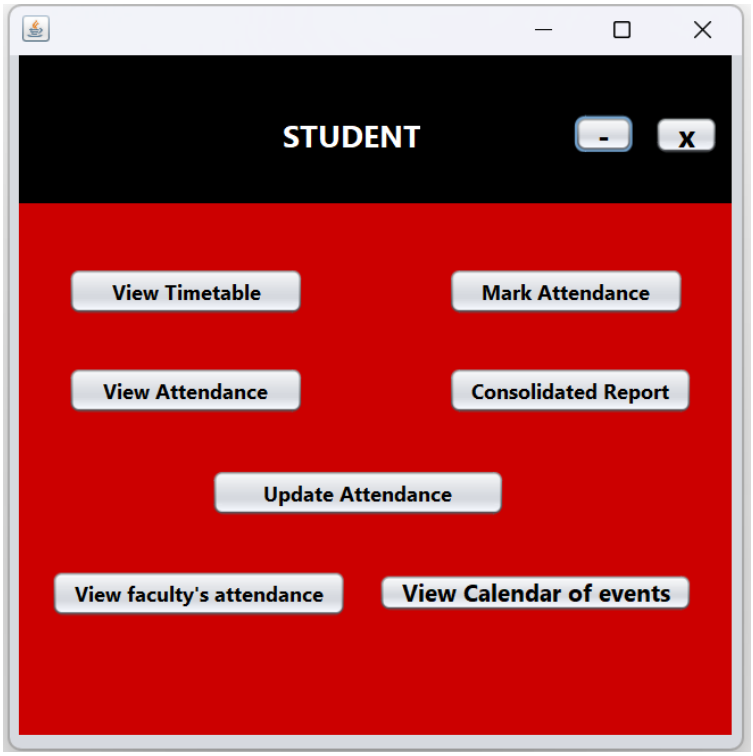


FIG 8.3 STUDENT FORM

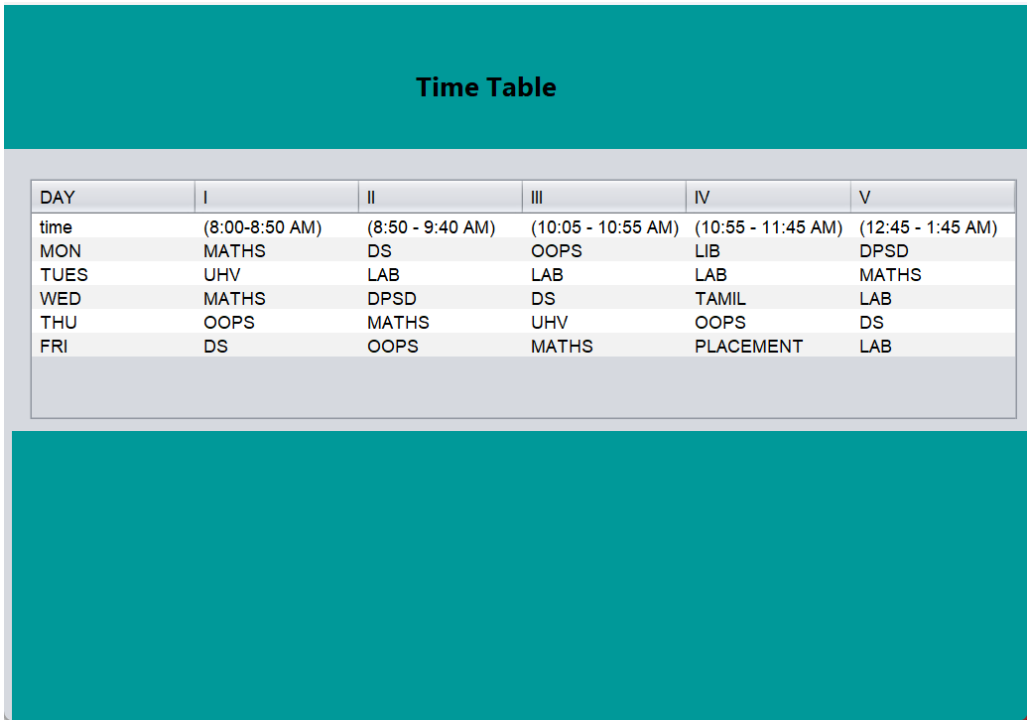


FIG 8.4 VIEW TIMETABLE

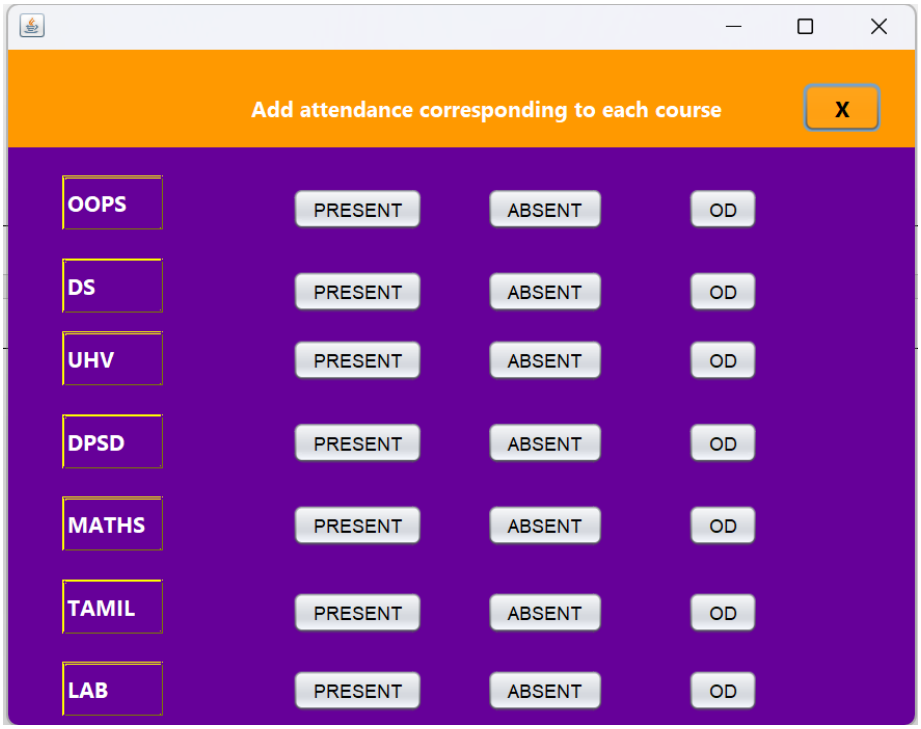
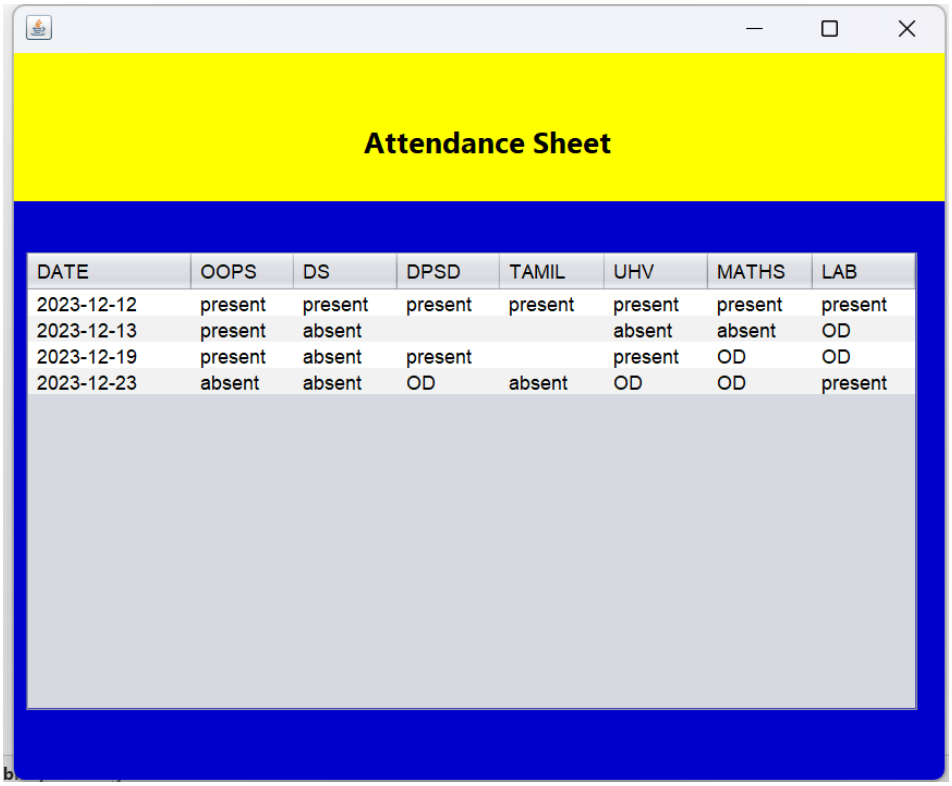


FIG 8.5 MARK ATTENDANCE



DATE	OOPS	DS	DPSD	TAMIL	UHV	MATHS	LAB
2023-12-12	present	present	present	present	present	present	present
2023-12-13	present	absent			absent	absent	OD
2023-12-19	present	absent	present		present	OD	OD
2023-12-23	absent	absent	OD	absent	OD	OD	present

FIG 8.6 VIEW ATTENDANCE

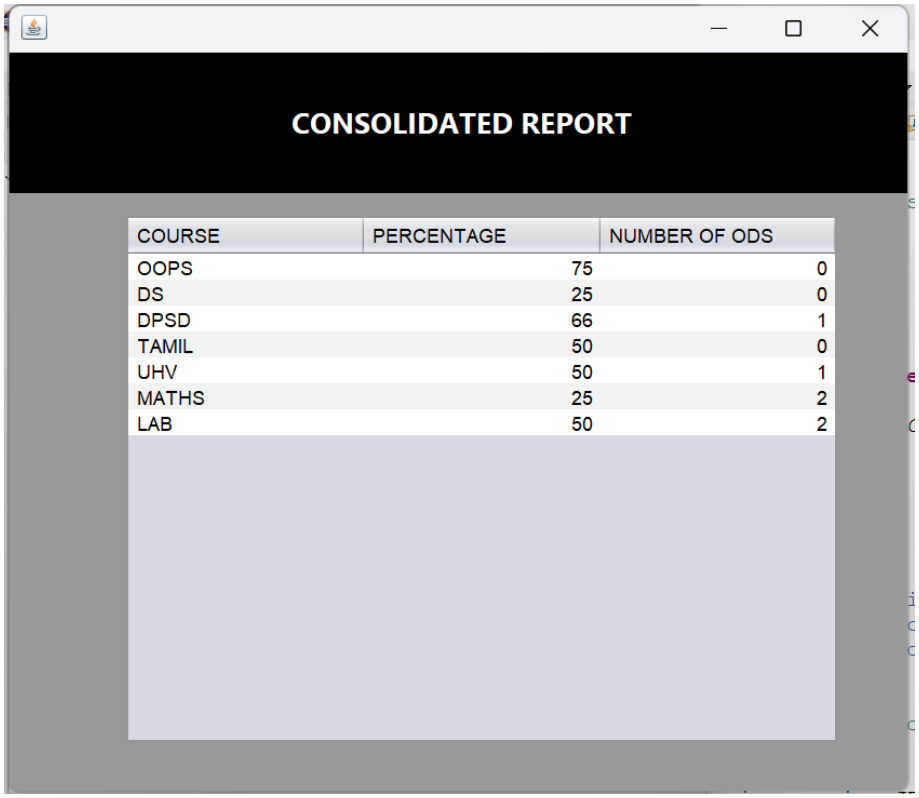


FIG 8.7 CONSOLIDATED REPORT

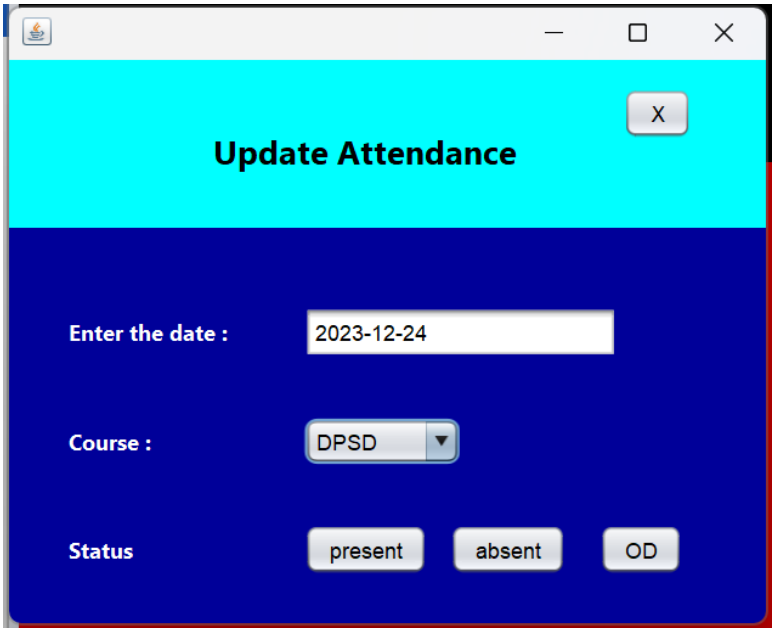


FIG 8.8 UPDATE ATTENDANCE

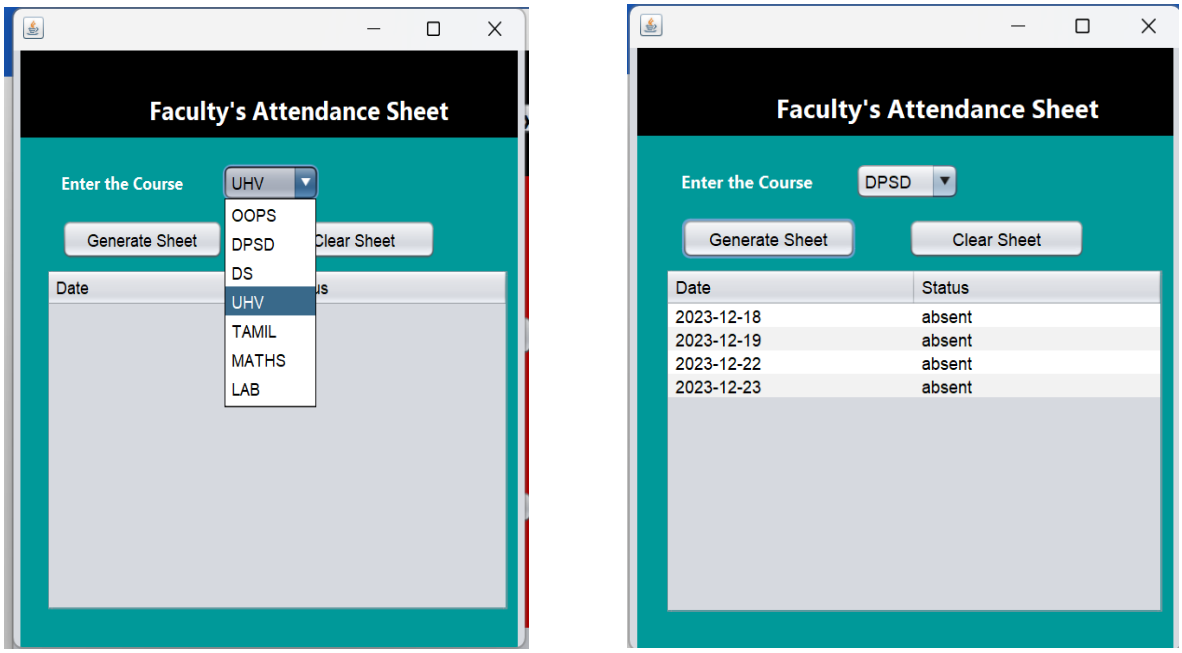


FIG 8.9 VIEW FACULTY ATTENDANCE

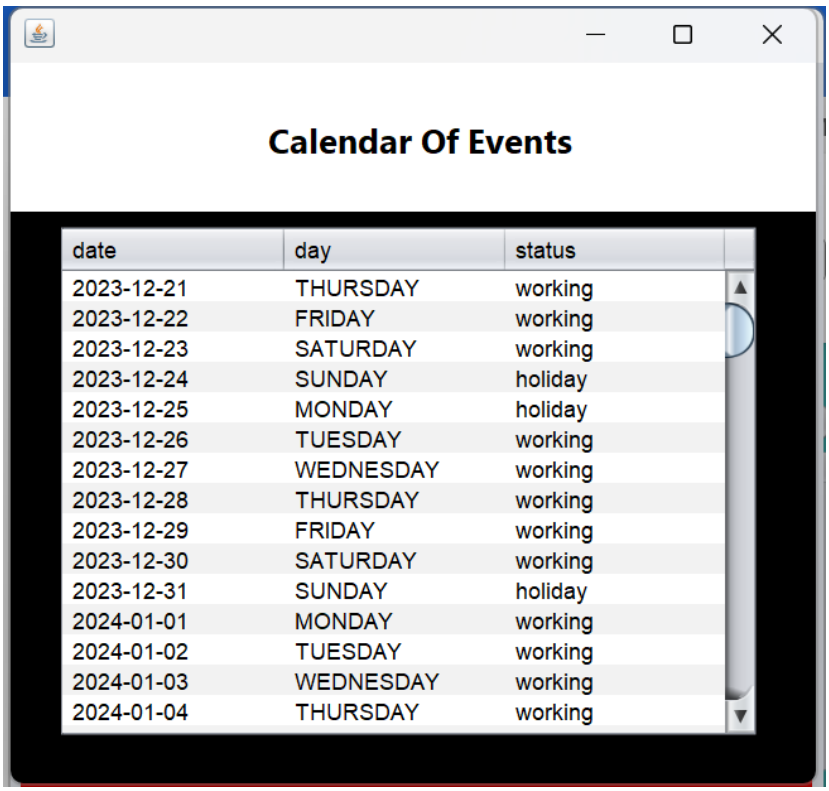


FIG 8.10 CALENDAR OF EVENTS

2.Sign In as a teacher

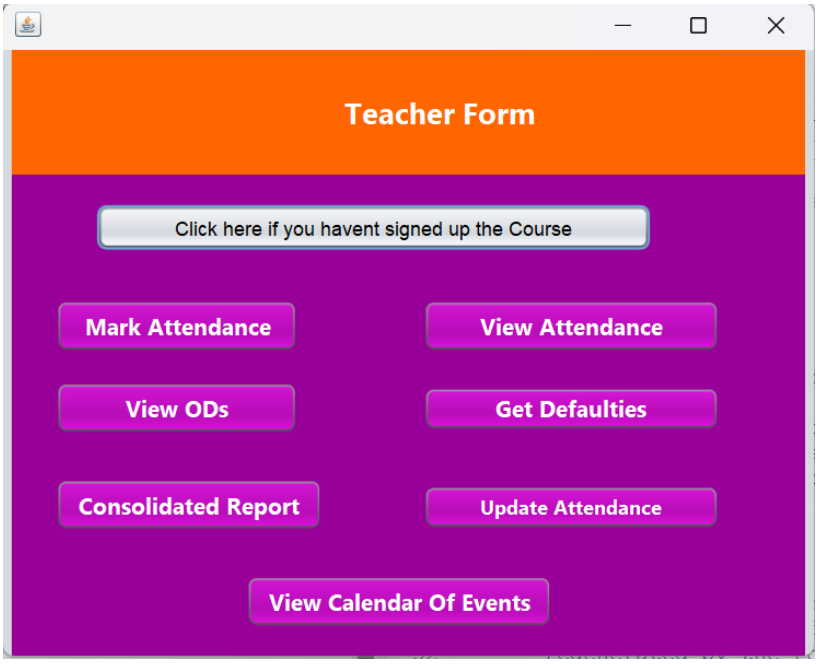


FIG 8.11 TEACHER FORM

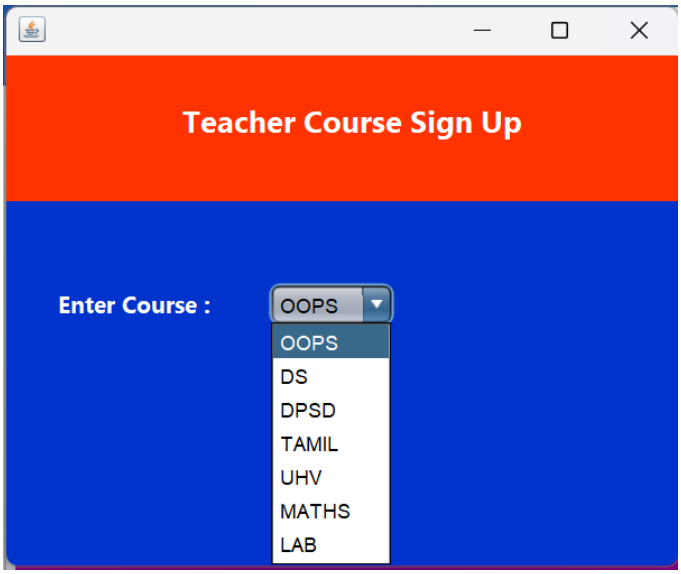


FIG 8.12 COURSE SIGN IN

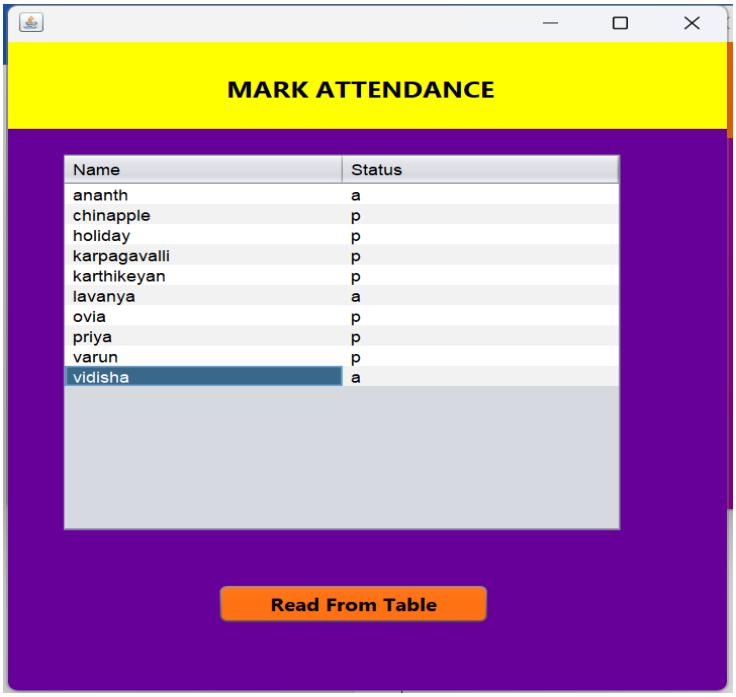


FIG 8.13 MARK ATTENDANCE

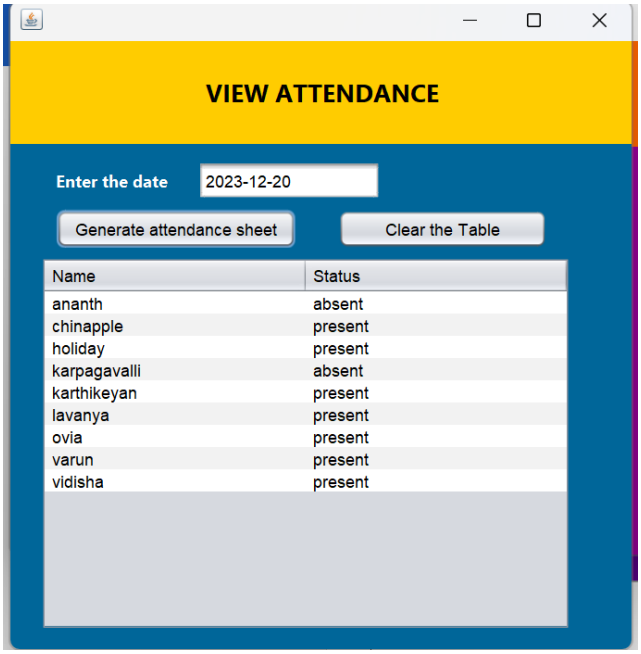


FIG 8.14 VIEW MARKED ATTENDANCE

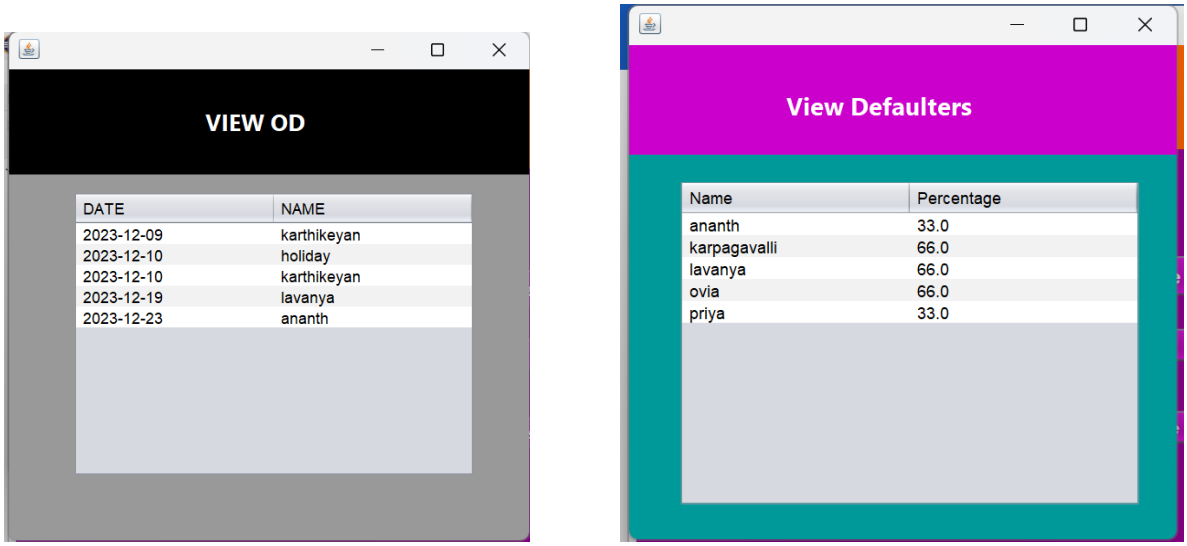


FIG 8.15 VIEW OD (sorted by date) and VIEW DEFAULTERS (sorted by name)

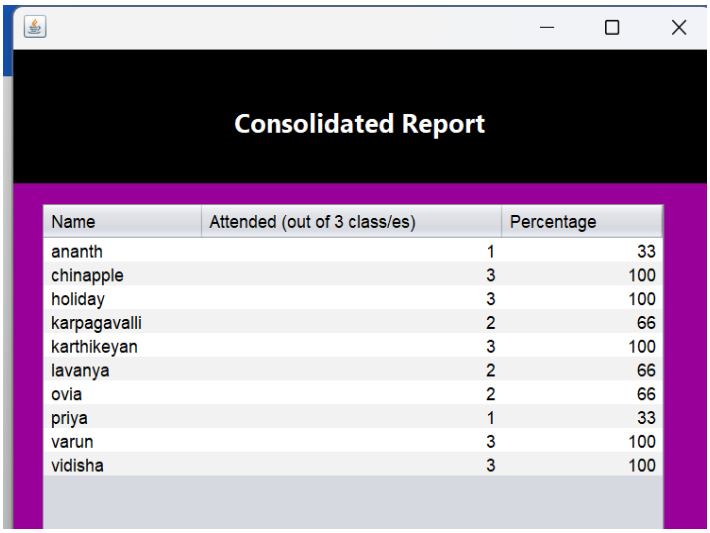


FIG 8.16 CONSOLIDATED REPORT (based on teacher's marked attendance)

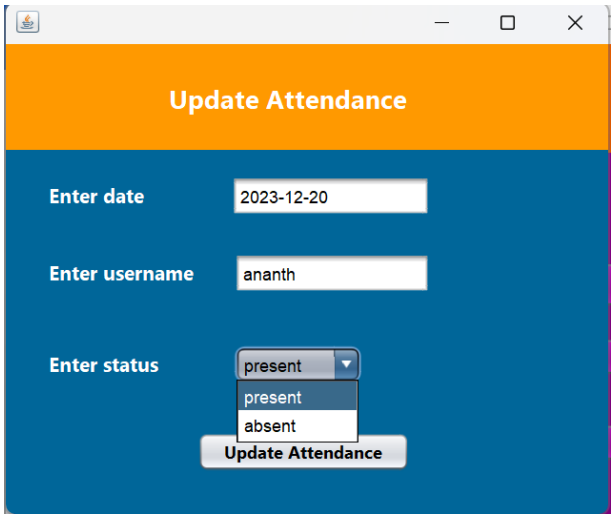


FIG 8.17 UPDATE ATTENDANCE

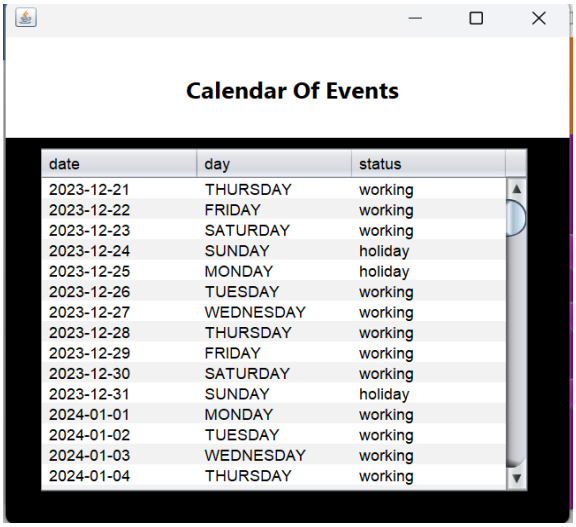


FIG 8.18 CALENDAR OF EVENTS

3.Sign In as an Admin

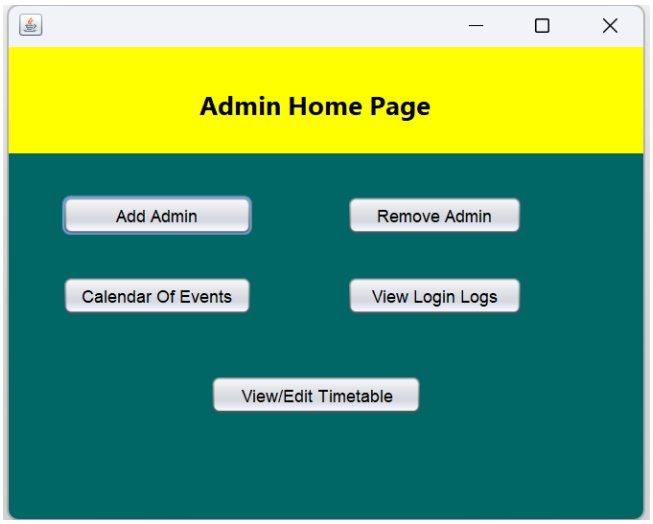


FIG 8.19 ADMIN HOME PAGE

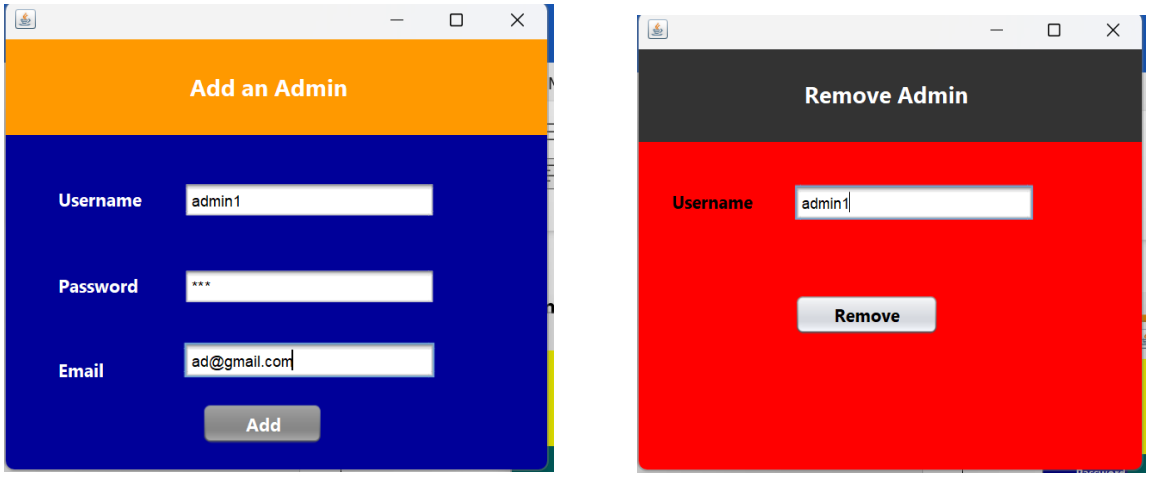


FIG 8.20 ADD ADMIN and REMOVE ADMIN

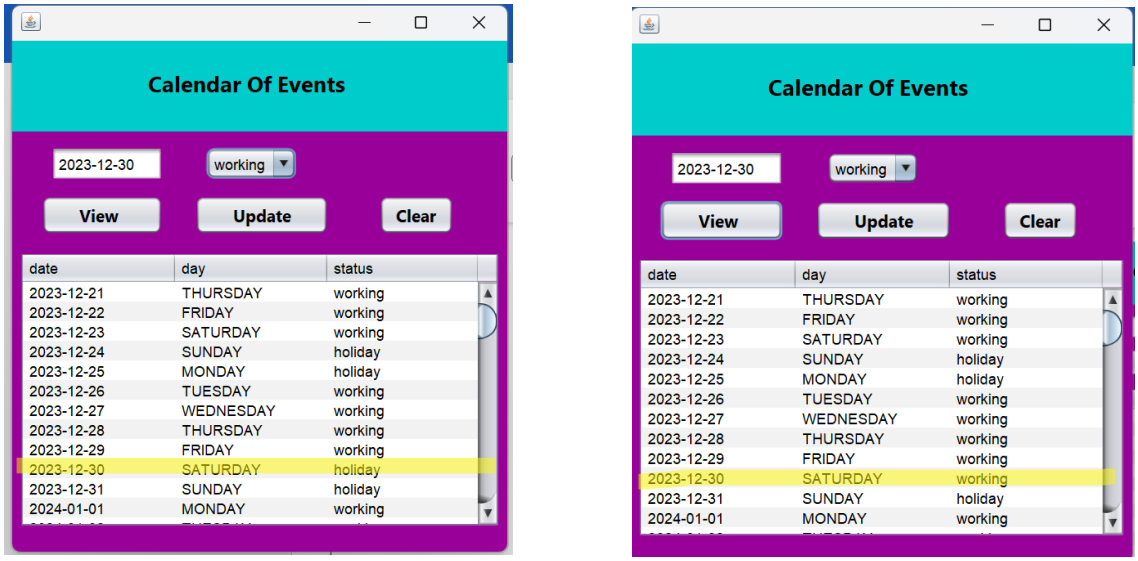


FIG 8.21 VIEW / UPDATE CALENDAR OF EVENTS

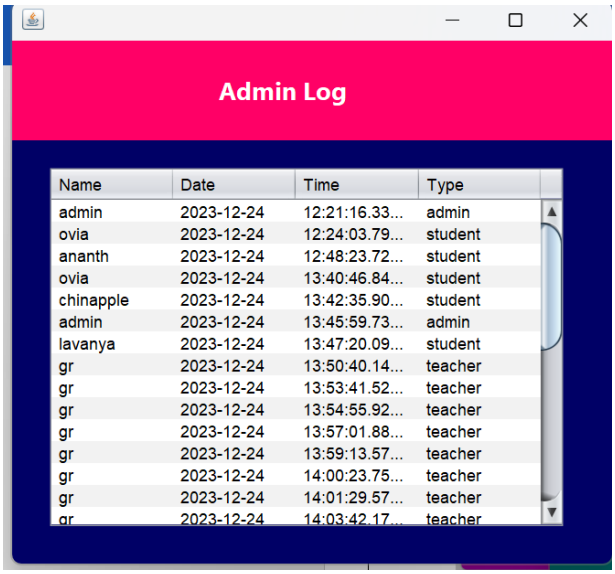


FIG 8.22 ADMIN LOGS

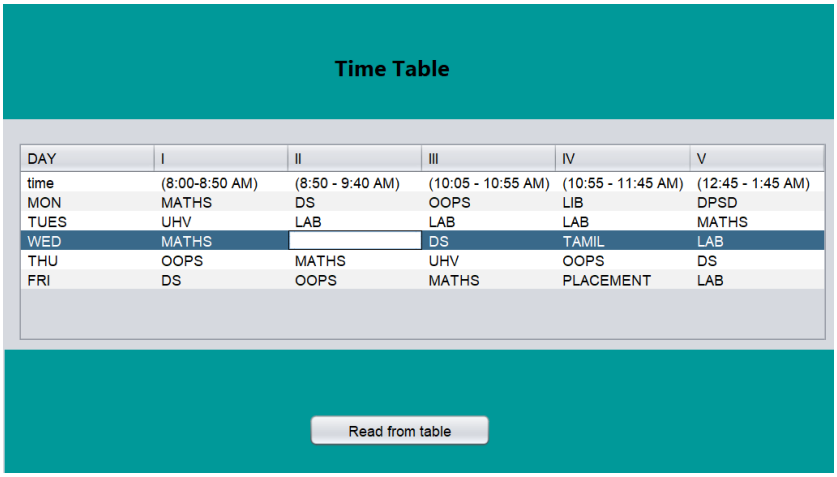


FIG 8.23 VIEW / EDIT TIMETABLE

9. OBJECT ORIENTED FEATURES USED

In a modular system like AMS, several object-oriented features are employed to enhance code organization, reusability, and maintainability.

1. **Classes and Objects:**
    - **Example:** Classes for "Student," "Teacher," "Admin" are created, with objects instantiated for each specific instance in the system.
2. **Encapsulation:**
    - **Example:** Each module encapsulates related functionalities, ensuring that the internal workings of one module are hidden from others, promoting modular design.
3. **Inheritance:**
    - **Example**: Every class extends javax.swing for easier Graphic User Interface.
4. **Modularity:**
    - **Example:** Each module (e.g., "Login," "Attendance," "Timetable") can be represented as a modular and independent unit, promoting the separation of concerns.
5. **Interfaces:**
    - **Example:** The CompareTo<T> generic interface was used to sort the ODs of students according to their date.
6. **Dependency Injection:**
    - **Example:** Injecting dependencies, such as a "DatabaseConnector" into classes to enhance flexibility and maintainability.
7. **Exception Handling**:
    - **Example**: SQL Exceptions were used to catch any error in SQL command or operation on an empty result set.
8. **Event Handling**:
    - Example: Incorporating event handling mechanisms for user actions or system events, enabling responsive and interactive user experiences.
    - When a button was pressed, an event was triggered.

10.INFERENCE AND FUTURE EXTENSION

- **10.1 INFERENCE**

1. **User-Centric Approach:**
   - The system prioritizes user-centric features, allowing students to actively manage their attendance, view timetables, and access relevant information. Teachers and administrators also have tools tailored to their roles. Teachers can maintain their class attendance and get concise reports. Admins can view/update timetable and calendar of events.
2. **Modularity and Object-Oriented Design:**
   - The system adopts a modular and object-oriented design, promoting code organization, reusability, and maintainability. Different modules cater to distinct functionalities, enhancing system flexibility.
3. **Security and Authentication Focus:**
   - The inclusion of features like login logs, authentication and security measures reflects a strong emphasis on safeguarding user data and ensuring secure access to the system.
4. **Interconnected Data Flow:**
   - The system appears to facilitate seamless data flow between modules, allowing users, teachers, and administrators to access and update relevant information, enhancing the overall user experience.
5. **Flexibility and Customization:**
   - Features such as customizable attendance policies, role-based access, and user preferences suggest a commitment to flexibility, enabling adaptation to diverse institutional or organizational requirements.
6. **Comprehensive Reporting:**
   - The inclusion of consolidated reports for attendance, defaulters, and overall development scores indicates a focus on providing administrators and educators with insightful data for decision-making.
7. **Event and Calendar Management:**
   - Calendar-related features for viewing events and timetables, applicable to both students and teachers, enhance communication and organization within the educational or organizational environment.

8. **User Engagement and Responsibility:**
    - The system encourages user engagement by allowing students to mark their attendance and providing teachers with tools to actively manage class attendance, promoting a sense of responsibility among users.
9. **Audit Trail and Monitoring:**
    - Features such as login logs and logging mechanisms suggest a commitment to monitoring system activities for auditing purposes, contributing to transparency and accountability.
10. **Adaptability to Change:**
    - The modular and object-oriented design, coupled with features like customizable attendance policies, indicates a system that can adapt to evolving needs, new functionalities, or changes in policies.
11. **Efficiency through Automation:**
    - Automation features, such as marking attendance and generating consolidated reports, contribute to increased efficiency and reduced manual effort, benefiting both students and administrators.

In summary, the project reflects a holistic approach to attendance management, emphasizing user experience, security, flexibility, and efficient data management through a well-designed and modular system. The features are geared towards promoting engagement, transparency, and adaptability within an educational or organizational setting.

- **10.2 FUTURE EXTENSION**

1. **Integration with Biometric Authentication:**
    - Implement biometric authentication methods, such as fingerprint or facial recognition, to enhance security and streamline the attendance marking process.
2. **Machine Learning for Attendance Prediction:**
    - Integrate machine learning algorithms to predict attendance patterns based on historical data, helping educators and administrators identify potential attendance issues in advance.
3. **Enhanced Reporting and Analytics:**
    - Expand reporting capabilities by incorporating advanced analytics, data visualization tools, and predictive modelling to derive deeper insights into attendance trends and student performance.
4. **Mobile Application for On-the-Go Access:**
    - Develop a mobile application that allows students, teachers, and administrators to access attendance data, timetables, and other relevant information conveniently from their smartphones.
5. **Automated Communication Alerts:**
    - Implement automated communication features that send alerts and notifications to students, teachers, and administrators regarding attendance updates, important events, or policy changes.
6. **Blockchain for Security and Transparency:**
    - Explore the use of blockchain technology to enhance data security, integrity, and transparency, ensuring that attendance records are tamper-proof and verifiable.
7. **Internet of Things (IoT) for Smart Classrooms:**
    - Utilize IoT devices to automate attendance tracking through connected devices in classrooms, providing real-time data and reducing manual input.
8. **Voice Recognition for Accessibility:**
    - Integrate voice recognition technology to allow students with disabilities to mark their attendance or access system features through voice commands.
9. **Enhanced Timetable Management:**
    - Improve timetable management by incorporating features like dynamic scheduling, room availability tracking, and automated conflict resolution.
10. **APIs for Third-Party Integrations:**
    - Develop APIs to facilitate seamless integration with other educational tools, learning management systems, or external databases for a more interconnected educational environment.

11. **Real-Time Student Feedback:**
    - Introduce features for real-time student feedback on classes, allowing educators to adjust their teaching methods based on student responses.
12. **Cloud-Based Infrastructure:**
    - Transition to a cloud-based infrastructure to enhance scalability, accessibility, and collaboration, allowing users to access the system from anywhere with an internet connection.

These future extensions aim to leverage emerging technologies and advanced features to further enhance the capabilities and impact of the attendance management system in educational or organizational settings.

11.REFERENCES

https://copyassignment.com/attendance-management-system-project-in-java/

https://www.geeksforgeeks.org/sql-tutorial/

https://www.pockethrms.com/attendance-management-system/

https://www.javatpoint.com/example-to-connect-to-the-mysql-database

https://www.iitms.co.in/blog/online-attendance-management-software-for-schools.html