



UMS

UNIVERSITI MALAYSIA SABAH

KK14203 OBJECT-ORIENTED PROGRAMMING, SECTION 1
FACULTY OF COMPUTING AND INFORMATICS
UNIVERSITI MALAYSIA SABAH

PROJECT 2

HC00 COMPANY LEAVE MANAGEMENT SYSTEM

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1.0 PURPOSE OF PROJECT

The purpose of this project is to develop a Java-based application that implies object-oriented programming and the Graphical User Interface (GUI) concepts. HC00 COMPANY LEAVE MANAGEMENT SYSTEM is a simple application developed to manage employees' leave requests to be reviewed and authorized by the company administration through a simple and friendly-user system.

2.0 JAVA CODE

1. CLASS – Home

```
package Project2;

import java.awt.event.WindowEvent;
import java.awt.Toolkit;
import javax.swing.JOptionPane;
import Project2.AdminLoginPage;
import Project2.StaffLoginForm;

public class Home extends javax.swing.JFrame {
    public Home() {
        initComponents();
    }

    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        HomePanel = new javax.swing.JPanel();
        adminLogin_button = new javax.swing.JButton();
        staffLogin_button = new javax.swing.JButton();
        homeExit_button = new javax.swing.JButton();
        homeTitle = new javax.swing.JLabel();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setTitle("HC00 COMPANY LEAVE MANAGEMENT SYSTEM");

        HomePanel.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0,
0, 0)));

        adminLogin_button.setText("ADMIN");
        adminLogin_button.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                adminLogin_buttonActionPerformed(evt);
            }
        });

        staffLogin_button.setText("STAFF");
        staffLogin_button.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```

        staffLogin_buttonActionPerformed(evt);
    }
});

homeExit_button.setText("EXIT");
homeExit_button.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        homeExit_buttonActionPerformed(evt);
    }
});

javax.swing.GroupLayout HomePanelLayout = new javax.swing.GroupLayout(HomePanel);
HomePanel.setLayout(HomePanelLayout);
HomePanelLayout.setHorizontalGroup(
    HomePanelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(HomePanelLayout.createSequentialGroup()
            .addGap(204, 204, 204)
            .addGroup(HomePanelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)
                .addComponent(staffLogin_button,
                    javax.swing.GroupLayout.DEFAULT_SIZE, 105, Short.MAX_VALUE)
                .addComponent(adminLogin_button,
                    javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
                    Short.MAX_VALUE)))
            .addGap(225, 225, 225)
            .addComponent(homeExit_button)))
        .addGap(241, Short.MAX_VALUE))
    );
HomePanelLayout.setVerticalGroup(
    HomePanelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(HomePanelLayout.createSequentialGroup()
            .addGap(63, 63, 63)
            .addComponent(adminLogin_button, javax.swing.GroupLayout.PREFERRED_SIZE, 47,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(30, 30, 30)
            .addComponent(staffLogin_button, javax.swing.GroupLayout.PREFERRED_SIZE, 49,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 191,
                Short.MAX_VALUE)

```

```

        .addComponent(homeExit_button)
        .addContainerGap())
    );

    homeTitle.setFont(new java.awt.Font("Times New Roman", 1, 18)); // NOI18N
    homeTitle.setText("WELCOME TO HCOO COMPANY LEAVE MANAGEMENT SYSTEM");

    javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
    getContentPane().setLayout(layout);
    layout.setHorizontalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .add(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent(homeTitle)
                    .addComponent(HomePanel, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addContainerGap(17, Short.MAX_VALUE))
            .addGroup(layout.createSequentialGroup()
                .add(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent(homeTitle, javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addGap(29, 29, 29)
                    .addComponent(HomePanel, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addContainerGap(25, Short.MAX_VALUE))
    );

    getAccessibleContext().setAccessibleName("HCOO LEAVE MANAGEMENT SYSTEM");

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

private void adminLogin_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    AdminLoginPage newLogin = new AdminLoginPage();
    newLogin.setVisible(true);
}

private void homeExit_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    System.exit(0);
}

```

```

    }

    private void staffLogin_buttonActionPerformed(java.awt.event.ActionEvent evt) {
        StaffLoginForm newLogin = new StaffLoginForm();
        newLogin.setVisible(true);
    }

    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(Home.class.getName()).log(java.util.logging.Level.SEVERE,
                null, ex);
        } catch (InstantiationException ex) {

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

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

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

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

```

```
// Variables declaration - do not modify
private javax.swing.JPanel HomePanel;
private javax.swing.JButton adminLogin_button;
private javax.swing.JButton homeExit_button;
private javax.swing.JLabel homeTitle;
private javax.swing.JButton staffLogin_button;
// End of variables declaration

private void systemExit(){
    WindowEvent winCloseing = new WindowEvent(this,WindowEvent.WINDOW_CLOSING);
}
}
```

GRAPHICAL USER INTERFACE FOR CLASS – Home



2. CLASS – AdminLoginPage

```
package Project2;

import javax.swing.JOptionPane;
import java.awt.Toolkit;
import java.awt.event.WindowEvent;
import Project2.AdminLeaveApproval;

public class AdminLoginPage extends javax.swing.JFrame {

    public AdminLoginPage() {
        initComponents();
    }

    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        adminLogin_label = new javax.swing.JLabel();
        jPanel1 = new javax.swing.JPanel();
        adminID_label = new javax.swing.JLabel();
        adminpw_label = new javax.swing.JLabel();
        adminpw_input = new javax.swing.JPasswordField();
        adminID_input = new javax.swing.JTextField();
        login_button = new javax.swing.JButton();
        reset_button = new javax.swing.JButton();
        exit_button = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setTitle("HC00 COMPANY LEAVE MANAGEMENT SYSTEM");

        adminLogin_label.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        adminLogin_label.setText("ADMIN LOGIN PAGE");

        jPanel1.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0,
0)));

        adminID_label.setText("STAFF ID");

        adminpw_label.setText("PASSWORD");
```

```
adminpw_input.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        adminpw_inputActionPerformed(evt);  
    }  
});  
  
adminID_input.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        adminID_inputActionPerformed(evt);  
    }  
});  
  
login_button.setText("LOGIN");  
login_button.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        login_buttonActionPerformed(evt);  
    }  
});  
  
reset_button.setText("RESET");  
reset_button.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        reset_buttonActionPerformed(evt);  
    }  
});  
  
exit_button.setText("EXIT");  
exit_button.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        exit_buttonActionPerformed(evt);  
    }  
});  
  
javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);  
jPanel1.setLayout(jPanel1Layout);  
jPanel1Layout.setHorizontalGroup(  
    jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)  
        .addGroup(jPanel1Layout.createSequentialGroup()  
            .addGap(30, 30, 30)  
            .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)  
                .addGroup(jPanel1Layout.createSequentialGroup()  

```

```

        .addComponent(login_button, javax.swing.GroupLayout.PREFERRED_SIZE, 96,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addGap(41, 41, 41)
        .addComponent(reset_button, javax.swing.GroupLayout.PREFERRED_SIZE,
102, javax.swing.GroupLayout.PREFERRED_SIZE)
        .addGap(41, 41, 41)
        .addComponent(exit_button, javax.swing.GroupLayout.PREFERRED_SIZE, 102,
javax.swing.GroupLayout.PREFERRED_SIZE))
        .addGroup(jPanel1Layout.createSequentialGroup())
        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.LEADING, false)
            .addComponent(adminID_label, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addComponent(adminpw_label, javax.swing.GroupLayout.DEFAULT_SIZE,
70, Short.MAX_VALUE))
        .addGap(45, 45, 45)
        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.LEADING)
            .addComponent(adminpw_input)
            .addComponent(adminID_input))))
        .addContainerGap(48, Short.MAX_VALUE)
    );
    jPanel1Layout.setVerticalGroup(
        jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addGap(57, 57, 57)
            .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.LEADING, false)
                .addComponent(adminID_label, javax.swing.GroupLayout.PREFERRED_SIZE, 32,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(5, 5, 5)
                    .addComponent(adminID_input)))
                .addGap(18, 18, 18)
                .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.BASELINE)
                    .addComponent(adminpw_label)
                    .addComponent(adminpw_input, javax.swing.GroupLayout.PREFERRED_SIZE, 31,
javax.swing.GroupLayout.PREFERRED_SIZE))
                    .addGap(89, 89, 89)
                    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.LEADING, false)

```



```

        if (adminpw.contains("1234") && (adminID.contains("admin123")))
        {
            adminpw_input.setText(null);
            adminID_input.setText(null);
            systemExit();

            AdminLeaveApproval newApproval = new AdminLeaveApproval();
            newApproval.setVisible(true);
        }

        else
        {
            JOptionPane.showMessageDialog(null, "Invalid Login Details", "Login Error",
JOptionPane.ERROR_MESSAGE);
            adminpw_input.setText(null);
            adminID_input.setText(null);
        }

    }

    private void reset_buttonActionPerformed(java.awt.event.ActionEvent evt) {
        adminpw_input.setText(null);
        adminID_input.setText(null);
    }

    private void exit_buttonActionPerformed(java.awt.event.ActionEvent evt) {
        System.exit(0);
    }

    private void adminID_inputActionPerformed(java.awt.event.ActionEvent evt) {

    }

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

    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.

```

```

        * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
        */
    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(AdminLoginPage.class.getName()).log(java.util.logging.Level.
SEVERE, null, ex);
    } catch (InstantiationException ex) {

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

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

java.util.logging.Logger.getLogger(AdminLoginPage.class.getName()).log(java.util.logging.Level.
SEVERE, null, ex);
    }
    //</editor-fold>

    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new AdminLoginPage().setVisible(true);
        }
    });
}

// Variables declaration - do not modify
private javax.swing.JTextField adminID_input;
private javax.swing.JLabel adminID_label;
private javax.swing.JLabel adminLogin_label;
private javax.swing.JPasswordField adminpw_input;

```

```
private javax.swing.JLabel adminpw_label;  
private javax.swing.JButton exit_button;  
private javax.swing.JPanel jPanel1;  
private javax.swing.JButton login_button;  
private javax.swing.JButton reset_button;  
// End of variables declaration
```

```
private void systemExit()  
{  
    WindowEvent winCloseing = new WindowEvent(this,WindowEvent.WINDOW_CLOSING);  
}  
}
```

GRAPHICAL USER INTERFACE – AdminLoginPage

The screenshot shows a Java Swing window titled "HC00 COMPANY LEAVE MANAGEMENT SYSTEM". Inside the window, there is a panel titled "ADMIN LOGIN PAGE". This panel contains two text input fields: "STAFF ID" and "PASSWORD". Below these fields are three buttons: "LOGIN", "RESET", and "EXIT". The "STAFF ID" field has a blue border, while the "PASSWORD" field has a grey border. The buttons are light blue with black text.

3. CLASS – AdminLeaveApproval

```
package Project2;

import java.awt.event.WindowEvent;
import java.io.*;
import java.util.Scanner;
import java.io.FileNotFoundException;
import javax.swing.JOptionPane;

public class AdminLeaveApproval extends javax.swing.JFrame {

    public AdminLeaveApproval() {
        initComponents();
    }

    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        adminApproval_label = new javax.swing.JLabel();
        leaveApproval_panel = new javax.swing.JPanel();
        jScrollPane1 = new javax.swing.JScrollPane();
        loadReq_textArea = new javax.swing.JTextArea();
        load_button = new javax.swing.JButton();
        leaveApproval_label = new javax.swing.JLabel();
        authorise_button = new javax.swing.JButton();
        exit_button = new javax.swing.JButton();
        leaveApproval_combox = new javax.swing.JComboBox<>();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setTitle("HC00 COMPANY LEAVE MANAGEMENT SYSTEM");

        adminApproval_label.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        adminApproval_label.setText("STAFF LEAVE APPROVAL ");

        leaveApproval_panel.setBorder(javax.swing.BorderFactory.createBevelBorder(javax.swing.border.BevelBorder.RAISED));

        loadReq_textArea.setColumns(20);
        loadReq_textArea.setRows(5);
```



```
jScrollPane1.setViewportViewView(loadReq_textArea);

load_button.setText("LOAD REQUEST");
load_button.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        load_buttonActionPerformed(evt);
    }
});

leaveApproval_label.setFont(new java.awt.Font("Tahoma", 1, 13)); // NOI18N
leaveApproval_label.setText("LEAVE APPROVAL");

authorise_button.setText("AUTHORISE");
authorise_button.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        authorise_buttonActionPerformed(evt);
    }
});

exit_button.setText("EXIT");
exit_button.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        exit_buttonActionPerformed(evt);
    }
});

leaveApproval_combox.setModel(new javax.swing.DefaultComboBoxModel<>(new
String[] { "[SELECT APPROVAL MESSAGE]", "(LEAVE REQUEST IS APPROVED)", "(LEAVE
REQUEST IS DISAPPROVED)" }));
leaveApproval_combox.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        leaveApproval_comboxActionPerformed(evt);
    }
});

javax.swing.GroupLayout leaveApproval_panelLayout = new
javax.swing.GroupLayout(leaveApproval_panel);
leaveApproval_panel.setLayout(leaveApproval_panelLayout);
leaveApproval_panelLayout.setHorizontalGroup(

leaveApproval_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(leaveApproval_panelLayout.createSequentialGroup()
        .addContainerGap()
        .addGroup(leaveApproval_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(loadReq_textArea, javax.swing.GroupLayout.DEFAULT_SIZE, 200, true)
            .addComponent(load_button, javax.swing.GroupLayout.DEFAULT_SIZE, 100, true)
            .addComponent(leaveApproval_label, javax.swing.GroupLayout.DEFAULT_SIZE, 150, true)
            .addComponent(leaveApproval_combox, javax.swing.GroupLayout.DEFAULT_SIZE, 150, true)
            .addComponent(authorise_button, javax.swing.GroupLayout.DEFAULT_SIZE, 100, true)
            .addComponent(exit_button, javax.swing.GroupLayout.DEFAULT_SIZE, 100, true)
        )
    )
    .addContainerGap(100, true)
);
```

```

        .addGap(32, 32, 32)
        .addGroup(leaveApproval_panelLayout.createParallelGroup(javax.swing.Grou
pLayout.Alignment.TRAILING)
            .addGroup(leaveApproval_panelLayout.createParallelGroup(javax.swing.Gr
oupLayout.Alignment.LEADING, false)
                .addComponent(exit_button,
javax.swing.GroupLayout.Alignment.TRAILING, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(authorise_button,
javax.swing.GroupLayout.Alignment.TRAILING, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
            .addGroup(leaveApproval_panelLayout.createParallelGroup(javax.swing.Gr
oupLayout.Alignment.LEADING)
                .addGroup(leaveApproval_panelLayout.createSequentialGroup())
                .addGap(10, 10, 10)
                .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 534,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addComponent(load_button)
                .addGroup(leaveApproval_panelLayout.createSequentialGroup())
                .addComponent(leaveApproval_label)
                .addGap(34, 34, 34)
                .addComponent(leaveApproval_combox,
javax.swing.GroupLayout.PREFERRED_SIZE, 290,
javax.swing.GroupLayout.PREFERRED_SIZE))))
        .addContainerGap(36, Short.MAX_VALUE))
    );
    leaveApproval_panelLayout.setVerticalGroup(

leaveApproval_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEA
DING)
    .addGroup(leaveApproval_panelLayout.createSequentialGroup())
        .addContainerGap()
        .addComponent(load_button, javax.swing.GroupLayout.PREFERRED_SIZE, 34,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATE
D)
        .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE,
235, javax.swing.GroupLayout.PREFERRED_SIZE)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATE
D)
        .addGroup(leaveApproval_panelLayout.createParallelGroup(javax.swing.Grou
pLayout.Alignment.BASELINE)

```

```
.addComponent(leaveApproval_label,  
javax.swing.GroupLayout.PREFERRED_SIZE, 28,  
javax.swing.GroupLayout.PREFERRED_SIZE)  
.addComponent(leaveApproval_comboBox,  
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,  
javax.swing.GroupLayout.PREFERRED_SIZE))  
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,  
18, Short.MAX_VALUE)  
.addComponent(authorise_button)  
.addGap(18, 18, 18)  
.addComponent(exit_button)  
.addGap(11, 11, 11))  
);  
  
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()  
                    .addComponent(adminApproval_label,  
javax.swing.GroupLayout.PREFERRED_SIZE, 241,  
javax.swing.GroupLayout.PREFERRED_SIZE))  
                    .addGroup(layout.createSequentialGroup()  
                        .addComponent(leaveApproval_panel,  
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,  
javax.swing.GroupLayout.PREFERRED_SIZE)))  
                .addGap(25, 25, Short.MAX_VALUE))  
            .addContainerGap())  
        .addGroup(layout.createSequentialGroup()  
            .addComponent(leaveApproval_label,  
javax.swing.GroupLayout.PREFERRED_SIZE, 28,  
javax.swing.GroupLayout.PREFERRED_SIZE))  
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)  
            .addComponent(authorise_button)  
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)  
            .addComponent(exit_button)  
            .addContainerGap())  
    );  
layout.setVerticalGroup(  
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)  
        .addGroup(layout.createSequentialGroup()  
            .addContainerGap()  
            .addComponent(leaveApproval_label,  
javax.swing.GroupLayout.PREFERRED_SIZE, 28,  
javax.swing.GroupLayout.PREFERRED_SIZE)  
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)  
            .addComponent(authorise_button)  
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)  
            .addComponent(exit_button)  
            .addContainerGap()
```

```

        .addComponent(leaveApproval_panel,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
        .addGap(32, 32, 32))
    );

```

```

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

```

```

private void authorise_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    StringBuilder sb = new StringBuilder();
    String strLine = "";
    try {
        String filename = "New Leave Application.txt";
        FileWriter fw = new FileWriter(filename, true);
        String leaveApproval_selected = (String)
leaveApproval_combox.getSelectedItem();
        String lineGap = " ";
        sb.append(System.lineSeparator());

        //appends the string to the file
        fw.write(lineGap + leaveApproval_selected +
sb.append(System.lineSeparator()));
        fw.close();
        JOptionPane.showMessageDialog(null,"Staff leave application has been
authorised.", "Status of Approval", JOptionPane.DEFAULT_OPTION);
    }
    catch (IOException ioe) {
        JOptionPane.showMessageDialog(null," Approval cannot be done",
"Approval Error", JOptionPane.ERROR_MESSAGE);
    }
}

```

```

private void load_buttonActionPerformed(java.awt.event.ActionEvent evt) {

    try {
        File myObj = new File("New Leave Application.txt");
        Scanner myReader = new Scanner(myObj);
        while (myReader.hasNextLine()) {
            String data = myReader.nextLine();
            loadReq_textArea.append(data);
        }
    }
}

```

```

        myReader.close();
    } catch (FileNotFoundException e) {
        JOptionPane.showMessageDialog(null, "File not exist.", "No new leave
request found", JOptionPane.DEFAULT_OPTION);
        e.printStackTrace();
    }

}

private void leaveApproval_comboBoxActionPerformed(java.awt.event.ActionEvent evt)
{

}

private void exit_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    System.exit(0);
}

public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
    /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
    * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
    */
    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(AdminLeaveApproval.class.getName()).log(java.util.lo
gging.Level.SEVERE, null, ex);
    } catch (InstantiationException ex) {

```

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

```
java.util.logging.Logger.getLogger(AdminLeaveApproval.class.getName()).log(java.util.lo  
gging.Level.SEVERE, null, ex);  
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
```

```
java.util.logging.Logger.getLogger(AdminLeaveApproval.class.getName()).log(java.util.lo  
gging.Level.SEVERE, null, ex);  
    }  
    //</editor-fold>
```

```
    /* Create and display the form */  
    java.awt.EventQueue.invokeLater(new Runnable() {  
        public void run() {  
            new AdminLeaveApproval().setVisible(true);  
        }  
    });  
}
```

```
// Variables declaration - do not modify  
private javax.swing.JLabel adminApproval_label;  
private javax.swing.JButton authorise_button;  
private javax.swing.JButton exit_button;  
private javax.swing.JScrollPane jScrollPane1;  
private javax.swing.JComboBox<String> leaveApproval_comboBox;  
private javax.swing.JLabel leaveApproval_label;  
private javax.swing.JPanel leaveApproval_panel;  
private javax.swing.JTextArea loadReq_textArea;  
private javax.swing.JButton load_button;  
// End of variables declaration
```

```
private void systemExit(){  
    WindowEvent winCloseing = new  
WindowEvent(this,WindowEvent.WINDOW_CLOSING);  
    }
```

```
}
```

GRAPHICAL USER INTERFACE – AdminLeaveApproval

The screenshot shows a graphical user interface window titled "HC00 COMPANY LEAVE MANAGEMENT SYSTEM". The window has a standard Windows-style title bar with minimize, maximize, and close buttons. The main content area is titled "STAFF LEAVE APPROVAL". Inside this area, there is a "LOAD REQUEST" button in the top left corner. Below it is a large, empty rectangular box, likely for displaying a list of requests. At the bottom left, the text "LEAVE APPROVAL" is displayed. To its right is a dropdown menu with the text "[SELECT APPROVAL MESSAGE]". In the bottom right corner, there are two buttons: "AUTHORISE" and "EXIT".

HC00 COMPANY LEAVE MANAGEMENT SYSTEM

STAFF LEAVE APPROVAL

LOAD REQUEST

LEAVE APPROVAL [SELECT APPROVAL MESSAGE]

AUTHORISE

EXIT

4. CLASS- **StaffLoginPage**

```
package Project2;

import java.awt.event.WindowEvent;
import javax.swing.JOptionPane;
import Project2.StaffMainMenu;

public class StaffLoginPage extends javax.swing.JFrame {

    public StaffLoginPage() {
        initComponents();
    }

    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        staffLogin_label = new javax.swing.JLabel();
        staffLogin_panel = new javax.swing.JPanel();
        staffID_label = new javax.swing.JLabel();
        staffpw_label = new javax.swing.JLabel();
        staffID_input = new javax.swing.JTextField();
        staffpw_input = new javax.swing.JPasswordField();
        login_button = new javax.swing.JButton();
        reset__button = new javax.swing.JButton();
        exit_button = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        staffLogin_label.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        staffLogin_label.setText("STAFF LOGIN PAGE");

        staffLogin_panel.setBorder(javax.swing.BorderFactory.createLineBorder(new
        java.awt.Color(0, 0, 0)));
    }
}
```



```
staffID_label.setText("STAFF ID");
```

```
staffpw_label.setText("PASSWORD");
```

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

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

```
login_button.setText("LOGIN");  
login_button.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        login_buttonActionPerformed(evt);  
    }  
});
```

```
reset__button.setText("RESET");  
reset__button.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        reset__buttonActionPerformed(evt);  
    }  
});
```

```
exit_button.setText("EXIT");  
exit_button.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        exit_buttonActionPerformed(evt);  
    }  
});
```

```
javax.swing.GroupLayout staffLogin_panelLayout = new  
javax.swing.GroupLayout(staffLogin_panel);
```

```

staffLogin_panel.setLayout(staffLogin_panelLayout);
staffLogin_panelLayout.setHorizontalGroup(

staffLogin_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
    .addGroup(staffLogin_panelLayout.createSequentialGroup())
        .addGroup(staffLogin_panelLayout.createParallelGroup(javax.swing.Gr
oupLayout.Alignment.LEADING)
            .addGroup(staffLogin_panelLayout.createSequentialGroup())
                .addGap(51, 51, 51)
                .addGroup(staffLogin_panelLayout.createParallelGroup(javax.sw
ing.GroupLayout.Alignment.LEADING, false)
                    .addComponent(staffID_label,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                    .addComponent(staffpw_label,
javax.swing.GroupLayout.DEFAULT_SIZE, 73, Short.MAX_VALUE))
                .addGap(34, 34, 34))
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
staffLogin_panelLayout.createSequentialGroup())
                .addContainerGap()
                .addComponent(login_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 93,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(20, 20, 20)))
        .addGroup(staffLogin_panelLayout.createParallelGroup(javax.swing.Gr
oupLayout.Alignment.LEADING)
            .addGroup(staffLogin_panelLayout.createParallelGroup(javax.swing
.GroupLayout.Alignment.LEADING, false)
                .addComponent(staffID_input,
javax.swing.GroupLayout.DEFAULT_SIZE, 244, Short.MAX_VALUE)
                .addComponent(staffpw_input))
            .addGroup(staffLogin_panelLayout.createSequentialGroup())
                .addGap(25, 25, 25)
                .addComponent(reset__button,
javax.swing.GroupLayout.PREFERRED_SIZE, 96,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(45, 45, 45)

```

```

        .addComponent(exit_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 90,
javax.swing.GroupLayout.PREFERRED_SIZE)))
        .addContainerGap(61, Short.MAX_VALUE))
    );
    staffLogin_panelLayout.setVerticalGroup(

staffLogin_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
        .addGroup(staffLogin_panelLayout.createSequentialGroup())
            .addGap(64, 64, 64)
            .addGroup(staffLogin_panelLayout.createParallelGroup(javax.swing.Gr
oupLayout.Alignment.TRAILING)
                .addComponent(staffID_label,
javax.swing.GroupLayout.PREFERRED_SIZE, 33,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(staffID_input,
javax.swing.GroupLayout.PREFERRED_SIZE, 36,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNR
ELATED)
                .addGroup(staffLogin_panelLayout.createParallelGroup(javax.swing.Gr
oupLayout.Alignment.BASELINE)
                    .addComponent(staffpw_label)
                    .addComponent(staffpw_input,
javax.swing.GroupLayout.PREFERRED_SIZE, 34,
javax.swing.GroupLayout.PREFERRED_SIZE))
                    .addGap(58, 58, 58)
                    .addGroup(staffLogin_panelLayout.createParallelGroup(javax.swing.Gr
oupLayout.Alignment.LEADING, false)
                        .addComponent(login_button,
javax.swing.GroupLayout.DEFAULT_SIZE, 34, Short.MAX_VALUE)
                        .addComponent(reset__button,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                        .addComponent(exit_button,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                    .addContainerGap(194, 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()
                .add(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent(staffLogin_panel,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .add(layout.createSequentialGroup()
                    .addGap(172, 172, 172)
                    .addComponent(staffLogin_label,
javax.swing.GroupLayout.PREFERRED_SIZE, 186,
javax.swing.GroupLayout.PREFERRED_SIZE)))
            .addContainerGap(37, Short.MAX_VALUE))
    );
    layout.setVerticalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .add(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addContainerGap()
                    .addComponent(staffLogin_label,
javax.swing.GroupLayout.PREFERRED_SIZE, 34,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(18, 18, 18)
                .add(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent(staffLogin_panel,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addContainerGap(19, Short.MAX_VALUE))
    );

    pack();
```

```
}// </editor-fold>
```

```
private void reset__buttonActionPerformed(java.awt.event.ActionEvent evt) {  
    staffpw_input.setText(null);  
    staffID_input.setText(null);  
}
```

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

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

```
private void login_buttonActionPerformed(java.awt.event.ActionEvent evt) {  
    String staffpw = staffpw_input.getText();  
    String staffID = staffID_input.getText();
```

```
    if (staffpw.contains("4321")&& staffID.contains("user123"))  
    {  
        staffpw_input.setText(null);  
        staffID_input.setText(null);  
        systemExit();
```

```
        StaffMainMenu newMenu = new StaffMainMenu();  
        newMenu.setVisible(true);
```

```
    }  
    else
```

```
    {  
        JOptionPane.showMessageDialog(null,"Invalid Login Details", "Login  
Error", JOptionPane.ERROR_MESSAGE);  
        staffpw_input.setText(null);  
        staffID_input.setText(null);  
    }  
}
```

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

```
}
```

```
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code
(optional) ">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the
default look and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        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(StaffLoginPage.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {

            java.util.logging.Logger.getLogger(StaffLoginPage.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {

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

            java.util.logging.Logger.getLogger(StaffLoginPage.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
        }
    }
}
//</editor-fold>
//</editor-fold>
```

```

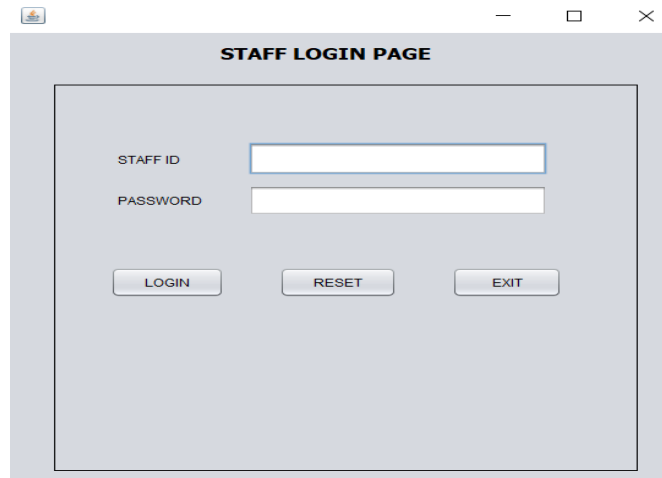
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new StaffLoginPage().setVisible(true);
    }
});
}

// Variables declaration - do not modify
private javax.swing.JButton exit_button;
private javax.swing.JButton login_button;
private javax.swing.JButton reset__button;
private javax.swing.JTextField staffID_input;
private javax.swing.JLabel staffID_label;
private javax.swing.JLabel staffLogin_label;
private javax.swing.JPanel staffLogin_panel;
private javax.swing.JPasswordField staffpw_input;
private javax.swing.JLabel staffpw_label;
// End of variables declaration

private void systemExit(){
    WindowEvent winCloseing = new WindowEvent(this,
WindowEvent.WINDOW_CLOSING );
}
}

```

GRAPHICAL USER INTERFACE – **AdminLeaveApproval**



The screenshot shows a window titled "STAFF LOGIN PAGE". Inside the window, there is a form with two input fields: "STAFF ID" and "PASSWORD". Below these fields are three buttons: "LOGIN", "RESET", and "EXIT". The window has a standard title bar with minimize, maximize, and close buttons.

5. CLASS – **StaffMainMenu**

```
package Project2;

import java.awt.event.WindowEvent;
import Project2.StaffCheckLeave;
import Project2.StaffApplyLeave;

public class StaffMainMenu extends javax.swing.JFrame {

    public StaffMainMenu() {
        initComponents();
    }

    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        staffMenu_label = new javax.swing.JLabel();
        mainMenu_panel = new javax.swing.JPanel();
        applyLeave_button = new javax.swing.JButton();
        checkLeave_button = new javax.swing.JButton();
        exit_button = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setTitle("HC00 COMPANY LEAVE MANAGEMENT SYSTEM");

        staffMenu_label.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        staffMenu_label.setText("STAFF PAGE MENU");

        mainMenu_panel.setBorder(javax.swing.BorderFactory.createLineBorder(new
        java.awt.Color(0, 0, 0)));

        applyLeave_button.setText("APPLY NEW LEAVE");
```



```

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

        checkLeave_button.setText("CHECK LEAVE STATUS OF APPROVAL");
        checkLeave_button.addActionListener(new java.awt.event.ActionListener()
        {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                checkLeave_buttonActionPerformed(evt);
            }
        });

        exit_button.setText("EXIT");
        exit_button.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                exit_buttonActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout mainMenu_panelLayout = new
        javax.swing.GroupLayout(mainMenu_panel);
        mainMenu_panel.setLayout(mainMenu_panelLayout);
        mainMenu_panelLayout.setHorizontalGroup(

mainMenu_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
            .addGroup(mainMenu_panelLayout.createSequentialGroup()
                .addGroup(mainMenu_panelLayout.createParallelGroup(javax.swing.G
roupLayout.Alignment.LEADING)
                    .addGroup(mainMenu_panelLayout.createSequentialGroup()
                        .addGap(132, 132, 132)
                        .addComponent(checkLeave_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 276,
javax.swing.GroupLayout.PREFERRED_SIZE))
                    .addGroup(mainMenu_panelLayout.createSequentialGroup()
                        .addGap(195, 195, 195)

```

```

        .addComponent(exit_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 142,
javax.swing.GroupLayout.PREFERRED_SIZE))
        .addGroup(mainMenu_panelLayout.createSequentialGroup())
        .addGap(197, 197, 197)
        .addComponent(applyLeave_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 138,
javax.swing.GroupLayout.PREFERRED_SIZE)))
        .addContainerGap(143, Short.MAX_VALUE))
    );
    mainMenu_panelLayout.setVerticalGroup(

```

```

mainMenu_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)

```

```

        .addGroup(mainMenu_panelLayout.createSequentialGroup())
        .addGap(74, 74, 74)
        .addComponent(applyLeave_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 52,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addGap(41, 41, 41)
        .addComponent(checkLeave_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 56,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addGap(51, 51, 51)
        .addComponent(exit_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 47,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addContainerGap(118, 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.Align
ment.LEADING)
                .addGroup(layout.createSequentialGroup()
                    .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Align
ment.LEADING)
                        .addGroup(layout.createSequentialGroup()

```

```

        .addGap(225, 225, 225)
        .addComponent(staffMenu_label))
    .addGroup(layout.createSequentialGroup()
        .addGap(40, 40, 40)
        .addComponent(mainMenu_panel,
            javax.swing.GroupLayout.PREFERRED_SIZE,
            javax.swing.GroupLayout.DEFAULT_SIZE,
            javax.swing.GroupLayout.PREFERRED_SIZE)))
    .addContainerGap(42, Short.MAX_VALUE))
    );
    layout.setVerticalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addComponent(staffMenu_label,
                javax.swing.GroupLayout.PREFERRED_SIZE, 49,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.REL
ATED)
                .addComponent(mainMenu_panel,
                    javax.swing.GroupLayout.PREFERRED_SIZE,
                    javax.swing.GroupLayout.DEFAULT_SIZE,
                    javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(0, 25, Short.MAX_VALUE))
            );

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

```

```

private void checkLeave_buttonActionPerformed(java.awt.event.ActionEvent
evt) {
    StaffCheckLeave newUpdate = new StaffCheckLeave();
    newUpdate.setVisible(true);
}

private void exit_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    System.exit(0);
}

```

```

private void applyLeave_buttonActionPerformed(java.awt.event.ActionEvent
evt) {
    StaffApplyLeave newApply = new StaffApplyLeave();
    newApply.setVisible(true);
}

```

```

public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code
(optional) ">
    /* If Nimbus (introduced in Java SE 6) is not available, stay with the
default look and feel.
    * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
    */
    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(StaffMainMenu.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
    } catch (InstantiationException ex) {

```

```

java.util.logging.Logger.getLogger(StaffMainMenu.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
    } catch (IllegalAccessException ex) {

```

```

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

```

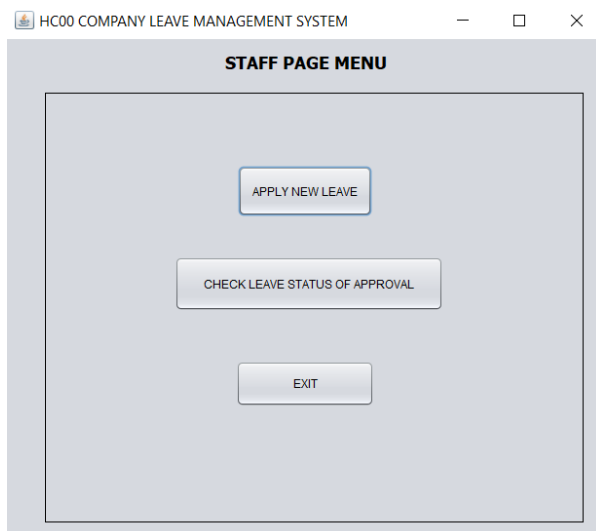
```

java.util.logging.Logger.getLogger(StaffMainMenu.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
    }
    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new StaffMainMenu().setVisible(true);
        }
    });
}
// Variables declaration - do not modify
private javax.swing.JButton applyLeave_button;
private javax.swing.JButton checkLeave_button;
private javax.swing.JButton exit_button;
private javax.swing.JPanel mainMenu_panel;
private javax.swing.JLabel staffMenu_label;
// End of variables declaration

private void systemExit(){
    WindowEvent winCloseing = new
WindowEvent(this,WindowEvent.WINDOW_CLOSING);
}
}

```

GRAPHICAL USER INTERFACE – **StaffMainMenu**



6. CLASS – **StaffApplyLeave**

```
package Project2;
```

```
import java.awt.event.WindowEvent;
```

```
import java.io.FileWriter;
```

```
import javax.swing.JOptionPane;
```

```
import javax.swing.JRadioButton;
```

```
import java.io.*;
```

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

```
    public StaffApplyLeave() {
```

```
        initComponents();
```

```
    }
```

```
@SuppressWarnings("unchecked")
```

```
// <editor-fold defaultstate="collapsed" desc="Generated Code">
```

```
private void initComponents() {
```

```
    leaveForm_label = new javax.swing.JLabel();
```

```
    leaveForm_panel = new javax.swing.JPanel();
```

```
    fullname_label = new javax.swing.JLabel();
```

```
    staffID_label = new javax.swing.JLabel();
```

```
    leaveType_label = new javax.swing.JLabel();
```

```
    staffID_input = new javax.swing.JTextField();
```

```
fullname_input = new javax.swing.JTextField();
dateStart_label = new javax.swing.JLabel();
dateEnd_leave = new javax.swing.JLabel();
confirm_button = new javax.swing.JButton();
exit_button = new javax.swing.JButton();
jScrollPane1 = new javax.swing.JScrollPane();
leaveDetails_txtarea = new javax.swing.JTextArea();
leaveDetails_Output = new javax.swing.JLabel();
leaveType_combox = new javax.swing.JComboBox<>();
dateStart_input = new javax.swing.JTextField();
dateEnd_input = new javax.swing.JTextField();
jLabel1 = new javax.swing.JLabel();
jLabel2 = new javax.swing.JLabel();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
setTitle("HC00 COMPANY LEAVE MANAGEMENT SYSTEM");

leaveForm_label.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
leaveForm_label.setText("STAFF LEAVE APPLICATION FORM");

leaveForm_panel.setBorder(javax.swing.BorderFactory.createLineBorder(new
java.awt.Color(0, 0, 0)));

fullname_label.setText("FULL NAME");
```

```
staffID_label.setText("STAFF ID");
```

```
leaveType_label.setText("TYPE OF LEAVE");
```

```
dateStart_label.setText("DATE START LEAVE");
```

```
dateEnd_leave.setText("DATE END LEAVE");
```

```
confirm_button.setFont(new java.awt.Font("Tahoma", 1, 13)); // NOI18N
```

```
confirm_button.setText("CONFIRM");
```

```
confirm_button.addActionListener(new java.awt.event.ActionListener() {
```

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

```
        confirm_buttonActionPerformed(evt);
```

```
    }
```

```
});
```

```
exit_button.setFont(new java.awt.Font("Tahoma", 1, 13)); // NOI18N
```

```
exit_button.setText("EXIT");
```

```
exit_button.addActionListener(new java.awt.event.ActionListener() {
```

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

```
        exit_buttonActionPerformed(evt);
```

```
    }
```

```
});
```

```
leaveDetails_txtarea.setColumns(20);
```



```
leaveDetails_txtarea.setRows(5);
```

```
jScrollPane1.setViewportViewView(leaveDetails_txtarea);
```

```
leaveDetails_Output.setText("LEAVE DETAILS");
```

```
leaveType_combox.setModel(new javax.swing.DefaultComboBoxModel<>(new  
String[] { "[SELECT]", "ANNUAL LEAVE", "MEDICAL LEAVE", "MATERNITY LEAVE",  
"PUBLIC HOLIDAYS", "EMERGENCY LEAVE" }));
```

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

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

```
jLabel1.setText("(e.g 8/12/2020)");
```

```
jLabel2.setText("(e.g 8/12/2020)");
```

```
javax.swing.GroupLayout leaveForm_panelLayout = new  
javax.swing.GroupLayout(leaveForm_panel);
```

```

leaveForm_panel.setLayout(leaveForm_panelLayout);

leaveForm_panelLayout.setHorizontalGroup(

leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

    .addGroup(leaveForm_panelLayout.createSequentialGroup()

        .addGap(28, 28, 28)

        .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

            .addComponent(staffID_label)

            .addComponent(fullname_label,
javax.swing.GroupLayout.PREFERRED_SIZE, 82,
javax.swing.GroupLayout.PREFERRED_SIZE)

            .addComponent(dateEnd_leave, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

            .addComponent(dateStart_label, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

            .addComponent(leaveType_label,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)

            .addComponent(leaveDetails_Output,
javax.swing.GroupLayout.PREFERRED_SIZE, 92,
javax.swing.GroupLayout.PREFERRED_SIZE))

        .addGap(31, 31, 31)

        .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

            .addGroup(leaveForm_panelLayout.createSequentialGroup()

                .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 573,
javax.swing.GroupLayout.PREFERRED_SIZE)

```

```
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.REL  
ATED, 30, Short.MAX_VALUE)
```

```
.addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.Gr  
oupLayout.Alignment.LEADING)
```

```
.addComponent(confirm_button)
```

```
.addComponent(exit_button,  
javax.swing.GroupLayout.PREFERRED_SIZE, 89,  
javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
.addContainerGap(24, Short.MAX_VALUE))
```

```
.addGroup(leaveForm_panelLayout.createSequentialGroup())
```

```
.addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.Gr  
oupLayout.Alignment.LEADING)
```

```
.addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.  
GroupLayout.Alignment.LEADING, false)
```

```
.addComponent(fullname_input,  
javax.swing.GroupLayout.DEFAULT_SIZE, 575, Short.MAX_VALUE)
```

```
.addComponent(staffID_input))
```

```
.addComponent(leaveType_combox,  
javax.swing.GroupLayout.PREFERRED_SIZE, 305,  
javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
.addGroup(leaveForm_panelLayout.createSequentialGroup())
```

```
.addComponent(dateStart_input,  
javax.swing.GroupLayout.PREFERRED_SIZE, 220,  
javax.swing.GroupLayout.PREFERRED_SIZE)
```

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

```
.addComponent(jLabel1,  
javax.swing.GroupLayout.PREFERRED_SIZE, 115,  
javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
.addGroup(leaveForm_panelLayout.createSequentialGroup())
```

```

        .addComponent(dateEnd_input,
javax.swing.GroupLayout.PREFERRED_SIZE, 220,
javax.swing.GroupLayout.PREFERRED_SIZE)

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

        .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED_SIZE, 95,
javax.swing.GroupLayout.PREFERRED_SIZE)))

        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))))

    );

    leaveForm_panelLayout.setVerticalGroup(

leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(leaveForm_panelLayout.createSequentialGroup())

            .addGap(31, 31, 31)

                .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                    .addComponent(staffID_input,
javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE)

                        .addComponent(staffID_label))

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

                                .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                                    .addComponent(fullname_label,
javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE)

```

```

        .addComponent(fullname_input,
javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE))

        .addGap(18, 18, 18)

        .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                .addComponent(leaveType_combox,
javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE)

                .addComponent(leaveType_label))

        .addGap(18, 18, 18)

        .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                .addComponent(dateStart_label)

                .addComponent(dateStart_input,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

                .addComponent(jLabel1))

        .addGap(18, 18, 18)

        .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                .addComponent(dateEnd_leave)

                .addComponent(dateEnd_input)

                .addComponent(jLabel2))

        .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

                .addGroup(leaveForm_panelLayout.createSequentialGroup()

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

```

```

        .addComponent(confirm_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 33,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addGap(18, 18, 18)

        .addComponent(exit_button,
javax.swing.GroupLayout.PREFERRED_SIZE, 33,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addContainerGap(172, Short.MAX_VALUE))

    .addGroup(leaveForm_panelLayout.createSequentialGroup())

    .addGap(30, 30, 30)

    .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.Gr
oupLayout.Alignment.LEADING)

        .addComponent(leaveDetails_Output,
javax.swing.GroupLayout.PREFERRED_SIZE, 29,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 176,
javax.swing.GroupLayout.PREFERRED_SIZE))

    .addContainerGap(58, 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.L
EADING)

```

```

        .addGroup(layout.createSequentialGroup())
            .addGap(317, 317, 317)
            .addComponent(leaveForm_label))
        .addGroup(layout.createSequentialGroup())
            .addContainerGap()
            .addComponent(leaveForm_panel,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)))
        .addContainerGap(38, Short.MAX_VALUE))
    );

    layout.setVerticalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(leaveForm_label,
javax.swing.GroupLayout.PREFERRED_SIZE, 26,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
23, Short.MAX_VALUE)
                .addComponent(leaveForm_panel,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap())
            );

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

```

```

private void confirm_buttonActionPerformed(java.awt.event.ActionEvent evt) {

    String leaveType_selected = (String) leaveType_combox.getSelectedItem();

    leaveDetails_txtarea.append("Staff Leave Application Details" + "\n");

    leaveDetails_txtarea.append( "\n"+"STAFF ID: " + staffID_input.getText() + "\n"
+ "FULLNAME: " + fullname_input.getText() + "\n" + "TYPE OF LEAVE: " +
leaveType_selected + "\n" + "DATE START LEAVE: " + dateStart_input.getText() +
"\n" + "DATE END LEAVE: " + dateEnd_input.getText() );

    JOptionPane.showMessageDialog(null," Leave Application is successfully
recorded.", "Valid Application", JOptionPane.DEFAULT_OPTION);

    //write data into new text file

    File file = new File(filepath);

    FileWriter fr = null;

    BufferedWriter br = null;

    PrintWriter pr = null;

    String lines;

    lines = "\n"+"Staff ID: " + staffID_input.getText() + "\n" + "Full Name: " +
fullname_input.getText() + "\n" + "Type of Leave: " + leaveType_selected + "\n" +
"Date Start Leave: " + dateStart_input.getText() + "\n" + "Date End Leave: "+
dateEnd_input.getText() + "\n";

    //exception handling

    try {

        // to append to file, you need to initialize FileWriter using below
constructor

```



```

        fr = new FileWriter(file, true);
        br = new BufferedWriter(fr);
        pr = new PrintWriter(br);
        pr.println(lines);

        br.close();
        pr.close();
        fr.close();

    }
    catch (IOException e) {
        JOptionPane.showMessageDialog(null, "Application unsuccessful",
        "Invalid Application", JOptionPane.ERROR_MESSAGE);

    }
}

private void exit_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    System.exit(0);
}

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

```

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

```
public static void main(String args[]) {  
    /* Set the Nimbus look and feel */  
    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code  
(optional) ">  
    /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look  
and feel.  
    * For details see  
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html  
    */  
    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(StaffApplyLeave.class.getName()).log(java.util.logging.  
Level.SEVERE, null, ex);  
    }  
    catch (InstantiationException ex) {
```

```
java.util.logging.Logger.getLogger(StaffApplyLeave.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
```

```
    } catch (IllegalAccessException ex) {
```

```
java.util.logging.Logger.getLogger(StaffApplyLeave.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
```

```
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
```

```
java.util.logging.Logger.getLogger(StaffApplyLeave.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
```

```
    }
```

```
//</editor-fold>
```

```
/* Create and display the form */
```

```
java.awt.EventQueue.invokeLater(new Runnable() {
```

```
    public void run() {
```

```
        new StaffApplyLeave().setVisible(true);
```

```
    }
```

```
});
```

```
}
```

```
// Variables declaration - do not modify
```

```
private javax.swing.JButton confirm_button;
```

```
private javax.swing.JTextField dateEnd_input;
```

```
private javax.swing.JLabel dateEnd_leave;
```

```
private javax.swing.JTextField dateStart_input;
```

```
private javax.swing.JLabel dateStart_label;
private javax.swing.JButton exit_button;
private javax.swing.JTextField fullname_input;
private javax.swing.JLabel fullname_label;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JScrollPane jScrollPane1;
private javax.swing.JLabel leaveDetails_Output;
private javax.swing.JTextArea leaveDetails_txtarea;
private javax.swing.JLabel leaveForm_label;
private javax.swing.JPanel leaveForm_panel;
private javax.swing.JComboBox<String> leaveType_combox;
private javax.swing.JLabel leaveType_label;
private javax.swing.JTextField staffID_input;
private javax.swing.JLabel staffID_label;
// End of variables declaration
```

Global

```
String leave_details = "";
String filepath = "New Leave Application.txt"; // in the same directory

/*
public boolean printLeaveDetails(){
    leave_details = "<html>";
    leave_details += "Status of leave approval is pending<br><br>";
    leave_details += "Staff ID: " + staffID_input.getText() + "<br>";
}
```

```
        leave_details += "Name: " + fullname_input.getText() + "<br>";

        leave_details += "Type of leave: " + leaveType_selected + "<br>";

        leave_details += "Date Start Leave: " + dayStart_selected + "/" +
monthStart_selected + "/" + yearStart_selected + "<br>";

        leave_details += "Date End Leave: " + dayEnd_selected + "/" +
monthEnd_selected + "/" + yearEnd_selected + "<br>";

        leave_details += "<html>";

        leaveDetails_txtarea.setText(leave_details);

        jsp.getViewport().revalidate();

        return true;

    }

    */
```


```
private void systemExit()

{

    WindowEvent winCloseing = new WindowEvent(this,
WindowEvent.WINDOW_CLOSING);

}
```

GRAPHICAL USER INTERFACE – **StaffApplyLeave**

 HC00 COMPANY LEAVE MANAGEMENT SYSTEM—□×

STAFF LEAVE APPLICATION FORM

STAFF ID	<input type="text"/>	
FULL NAME	<input type="text"/>	
TYPE OF LEAVE	<input type="text" value="[SELECT]"/>	
DATE START LEAVE	<input type="text"/>	(e.g 8/12/2020)
DATE END LEAVE	<input type="text"/>	(e.g 8/12/2020)
LEAVE DETAILS	<div></div>	

CONFIRM
EXIT

7. CLASS – **StaffCheckLeave**

```
package Project2;

import java.awt.event.WindowEvent;
import java.io.File;
import java.io.FileNotFoundException;
import java.util.Scanner;
import javax.swing.JOptionPane;

public class StaffCheckLeave extends javax.swing.JFrame {

    public StaffCheckLeave() {
        initComponents();
    }

    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        checkApproval_label = new javax.swing.JLabel();
        jPanel1 = new javax.swing.JPanel();
        jScrollPane1 = new javax.swing.JScrollPane();
        leaveDetails_txtArea = new javax.swing.JTextArea();
        checkReq_button = new javax.swing.JButton();
        exit_button = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setTitle("HC00 COMPANY LEAVE MANAGEMENT SYSTEM");

        checkApproval_label.setFont(new java.awt.Font("Tahoma", 1, 18)); //
        NOI18N
        checkApproval_label.setText("LEAVE APPLICATION STATUS OF
        APPROVAL");

        jPanel1.setBorder(javax.swing.BorderFactory.createLineBorder(new
        java.awt.Color(0, 0, 0)));

        leaveDetails_txtArea.setColumns(20);
```

```

leaveDetails_txtArea.setRows(5);
jScrollPane1.setViewportViewView(leaveDetails_txtArea);

checkReq_button.setText("CHECK REQUEST");
checkReq_button.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        checkReq_buttonActionPerformed(evt);
    }
});

exit_button.setText("EXIT");
exit_button.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        exit_buttonActionPerformed(evt);
    }
});

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

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(jPanel1Layout.createSequentialGroup()
        .addGap(43, 43, 43)
        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
            .addComponent(exit_button,
                javax.swing.GroupLayout.PREFERRED_SIZE, 87,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addComponent(jScrollPane1,
                    javax.swing.GroupLayout.PREFERRED_SIZE, 567,
                    javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(checkReq_button)))
        .addGap(46, Short.MAX_VALUE))
    );
jPanel1Layout.setVerticalGroup(

```



```

        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(layout.createSequentialGroup()
                    .addContainerGap()
                    .addComponent(checkApproval_label)
                    .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.REL
ATED, 25, Short.MAX_VALUE)
                    .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addGap(22, 22, 22))
                );

```

```

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

```

```

private void checkReq_buttonActionPerformed(java.awt.event.ActionEvent evt)
{
    StringBuilder sb = new StringBuilder();

    try {
        File myObj = new File("New Leave Application.txt");
        Scanner myReader = new Scanner(myObj);
        while (myReader.hasNextLine()) {
            String data = myReader.nextLine();
            leaveDetails_txtArea.append(data);
            sb.append(System.lineSeparator());
        }
        myReader.close();
    } catch (FileNotFoundException e) {
        JOptionPane.showMessageDialog(null," File not exist.", "Valid
Application", JOptionPane.DEFAULT_OPTION);
        e.printStackTrace();
    }
}

```

```

private void exit_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    System.exit(0);
}

```

```
}
```

```
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code
(optional) ">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the
default look and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        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(StaffCheckLeave.class.getName()).log(java.util.
logging.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {

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

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

            java.util.logging.Logger.getLogger(StaffCheckLeave.class.getName()).log(java.util.
logging.Level.SEVERE, null, ex);
        }
    }
    //</editor-fold>
```

```

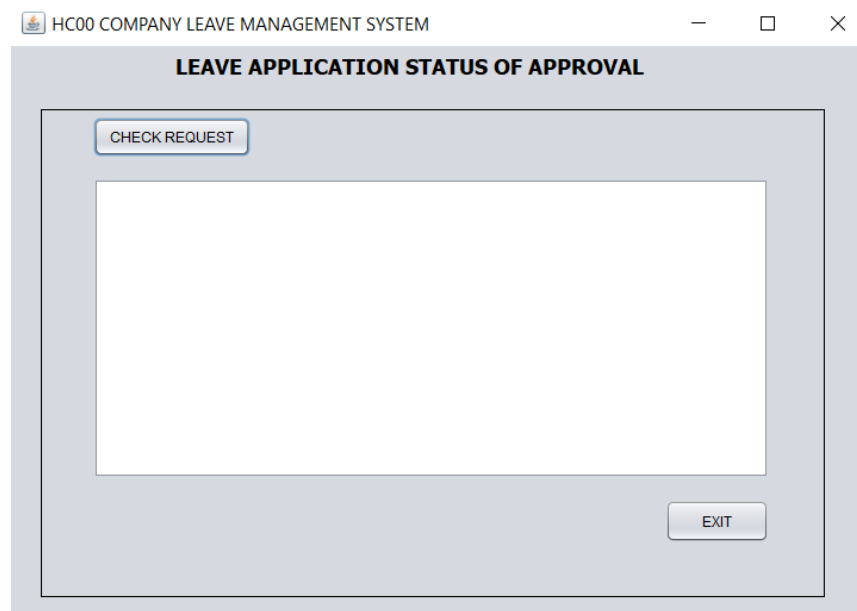
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new StaffCheckLeave().setVisible(true);
    }
});
}

// Variables declaration - do not modify
private javax.swing.JLabel checkApproval_label;
private javax.swing.JButton checkReq_button;
private javax.swing.JButton exit_button;
private javax.swing.JPanel jPanel1;
private javax.swing.JScrollPane jScrollPane1;
private javax.swing.JTextArea leaveDetails_txtArea;
// End of variables declaration

private void systemExit(){
    WindowEvent winCloseing = new WindowEvent(this,
WindowEvent.WINDOW_CLOSING);
}
}

```

GRAPHICAL USER INTERFACE – **StaffCheckLeave**

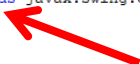


3.0 OBJECT-ORIENTED CONCEPT IMPLEMENTATION

A. INHERITANCE

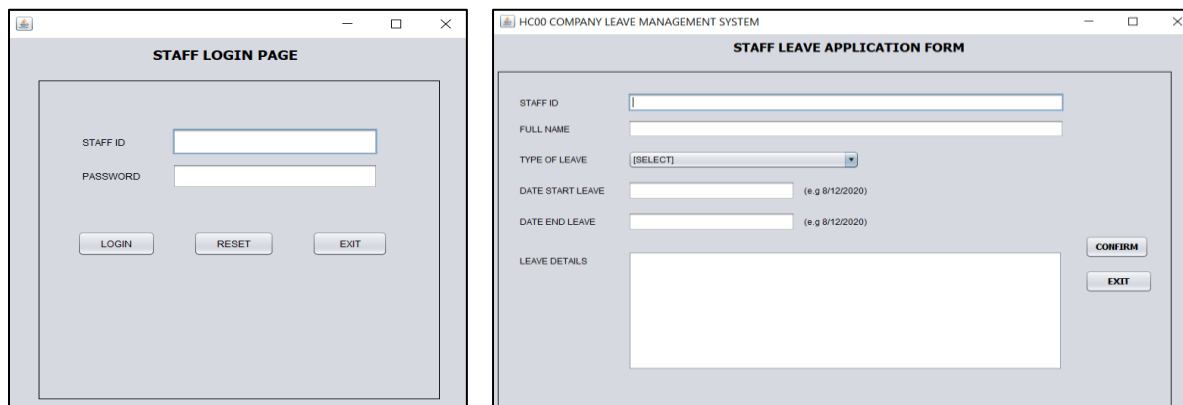
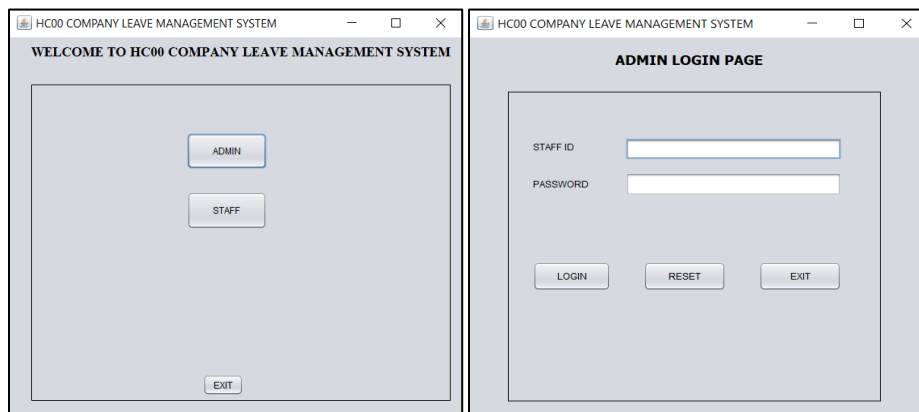
Example by using **extends** :

```
public class Home extends javax.swing.JFrame {  
  
    public Home() {  
        initComponents();  
    }  
  
    @SuppressWarnings("unchecked")  
    Generated Code  
  
    private void adminLogin_buttonActionPerformed(java.awt.event.ActionEvent evt) {  
        AdminLoginPage newLogin = new AdminLoginPage();  
        newLogin.setVisible(true);  
    }  
}
```



B. INTERFACES

Example of Home Page, Admin Login Page, Staff Login Page and Leave Application Form interfaces



C. EXCEPTION HANDLING

Example by using **try and catch**:

```
//exception handling
try {
    // to append to file, you need to initialize FileWriter using below constructor
    fr = new FileWriter(file, true);
    br = new BufferedWriter(fr);
    pr = new PrintWriter(br);
    pr.println(lines);

    br.close();
    pr.close();
    fr.close();
}
catch (IOException e) {
    JOptionPane.showMessageDialog(null, "Application unsuccessful", "Invalid Application", JOptionPane.ERROR_MESSAGE);
}
```

D. SWING CONTROLS

Examples by using **Jbutton, JLabel, JTextArea** and others

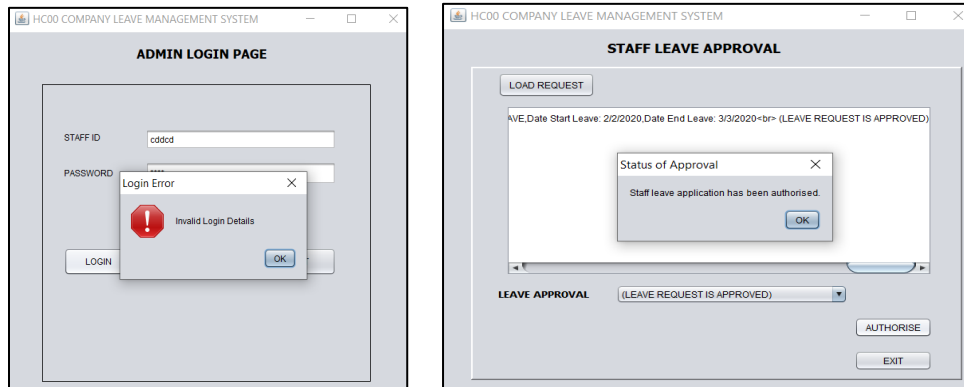
```
leaveForm_label = new javax.swing.JLabel();
leaveForm_panel = new javax.swing.JPanel();
fullname_label = new javax.swing.JLabel();
staffID_label = new javax.swing.JLabel();
leaveType_label = new javax.swing.JLabel();
staffID_input = new javax.swing.JTextField();
fullname_input = new javax.swing.JTextField();
dateStart_label = new javax.swing.JLabel();
dateEnd_leave = new javax.swing.JLabel();
confirm_button = new javax.swing.JButton();
exit_button = new javax.swing.JButton();
jScrollPane = new javax.swing.JScrollPane();
leaveDetails_txtarea = new javax.swing.JTextArea();
leaveDetails_Output = new javax.swing.JLabel();
leaveType_combox = new javax.swing.JComboBox<>();
dateStart_input = new javax.swing.JTextField();
dateEnd_input = new javax.swing.JTextField();
jLabel1 = new javax.swing.JLabel();
jLabel2 = new javax.swing.JLabel();
```

```
jLabel2.setText("(e.g 8/12/2020)");

javax.swing.GroupLayout leaveForm_panelLayout = new javax.swing.GroupLayout(leaveForm_panel);
leaveForm_panel.setLayout(leaveForm_panelLayout);
leaveForm_panelLayout.setHorizontalGroup(
    leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(leaveForm_panelLayout.createSequentialGroup()
            .addGap(28, 28, 28)
            .addGroup(leaveForm_panelLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)
                .addComponent(staffID_label)
                .addComponent(fullname_label, javax.swing.GroupLayout.PREFERRED_SIZE, 82, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(dateStart_label, javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(leaveType_label, javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(leaveDetails_Output, javax.swing.GroupLayout.PREFERRED_SIZE, 92, javax.swing.GroupLayout.PREFERRED_SIZE)
            )
            .addGap(31, 31, 31)
        )
    );
```

E. DIALOGS

Examples:



F. ENCAPSULATION

Example by using **private**:

```
private void adminLogin_buttonActionPerformed(java.awt.event.ActionEvent evt) {  
    AdminLoginPage newLogin = new AdminLoginPage();  
    newLogin.setVisible(true);  
}  
  
private void homeExit_buttonActionPerformed(java.awt.event.ActionEvent evt) {  
    System.exit(0);  
}  
  
private void staffLogin_buttonActionPerformed(java.awt.event.ActionEvent evt) {  
    StaffLoginPage newLogin = new StaffLoginPage();  
    newLogin.setVisible(true);  
}
```

G. CLASSES AND OBJECTS

Examples:

```
public class StaffMainMenu extends javax.swing.JFrame {  
  
    public StaffMainMenu() {  
        initComponents();  
    }  
  
    @SuppressWarnings("unchecked")  
    // <editor-fold defaultstate="collapsed" desc="Generated Code">  
    private void initComponents() {  
  
        staffMenu_label = new javax.swing.JLabel();  
        mainMenu_panel = new javax.swing.JPanel();  
        applyLeave_button = new javax.swing.JButton();  
        checkLeave_button = new javax.swing.JButton();  
        exit_button = new javax.swing.JButton();  
  
        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);  
        setTitle("HC00 COMPANY LEAVE MANAGEMENT SYSTEM");  
        staffMenu_label.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N  
  
        <!-->  
    }  
  
    private void checkLeave_buttonActionPerformed(java.awt.event.ActionEvent evt) {  
        StaffCheckLeave newUpdate = new StaffCheckLeave();  
        newUpdate.setVisible(true);  
    }  
}
```

Object Class

4.0 READ AND WRITE IMPLEMENTATION

- To read staff's input on Leave Application Form and display to JTextArea.
- To write into text file to save the leave details. (Class – **StaffApplyLeave**)

```
String leaveType_selected = (String) leaveType_combox.getSelectedItem();
leaveDetails_txtarea.append("Staff Leave Application Details" + "\n");
leaveDetails_txtarea.append( "\n" + "STAFF ID: " + staffID_input.getText() + "\n" + "FULLNAME: " + fullname_input.getText() + "\n" + "TY
JOptionPane.showMessageDialog(null, " Leave Application is successfully recorded.", "Valid Application", JOptionPane.DEFAULT_OPTION);

//write data into new text file
File file = new File(filepath);
FileWriter fr = null;
BufferedWriter br = null;
PrintWriter pr = null;

String lines;
lines = "\n" + "Staff ID: " + staffID_input.getText() + "\n" + "Full Name: " + fullname_input.getText() + "\n" + "Type of Leave: " + lea

//exception handling
try {
    // to append to file, you need to initialize FileWriter using below constructor
    fr = new FileWriter(file, true);
    br = new BufferedWriter(fr);
    pr = new PrintWriter(br);
    pr.println(lines);

    br.close();
    pr.close();
    fr.close();
}
catch (IOException e) {
    JOptionPane.showMessageDialog(null, "Application unsuccessful", "Invalid Application", JOptionPane.ERROR_MESSAGE);
}
```

- To read data from text file of staff's new leave application form and display into JTextArea. (Class – **AdminLeaveApproval**)

```
private void load_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    try {
        File myObj = new File("New Leave Application.txt");
        Scanner myReader = new Scanner(myObj);
        while (myReader.hasNextLine()) {
            String data = myReader.nextLine();
            loadReq_textArea.append(data);
        }
        myReader.close();
    } catch (FileNotFoundException e) {
        JOptionPane.showMessageDialog(null, " File not exist.", "No new leave request found", JOptionPane.DEFAULT_OPTION);
        e.printStackTrace();
    }
}
```


- Administrator page, to modify the text file content of staff leave application form (appending String for approval ; Approve / Disapprove (Class – **AdminLeaveApproval**)

```
private void authorise_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    StringBuilder sb = new StringBuilder();
    String strLine = "";
    try {
        String filename = "New Leave Application.txt";
        FileWriter fw = new FileWriter(filename, true);
        String leaveApproval_selected = (String) leaveApproval_comboBox.getSelectedItem();
        String lineGap = " ";
        sb.append(System.lineSeparator());

        //appends the string to the file
        fw.write(lineGap + leaveApproval_selected + sb.append(System.lineSeparator()));
        fw.close();
        JOptionPane.showMessageDialog(null, "Staff leave application has been authorised.", "Status of Approval", JOptionPane.DEFAULT_OPTION);
    } catch (IOException ioe) {
        JOptionPane.showMessageDialog(null, "Approval cannot be done", "Approval Error", JOptionPane.ERROR_MESSAGE);
    }
}
```

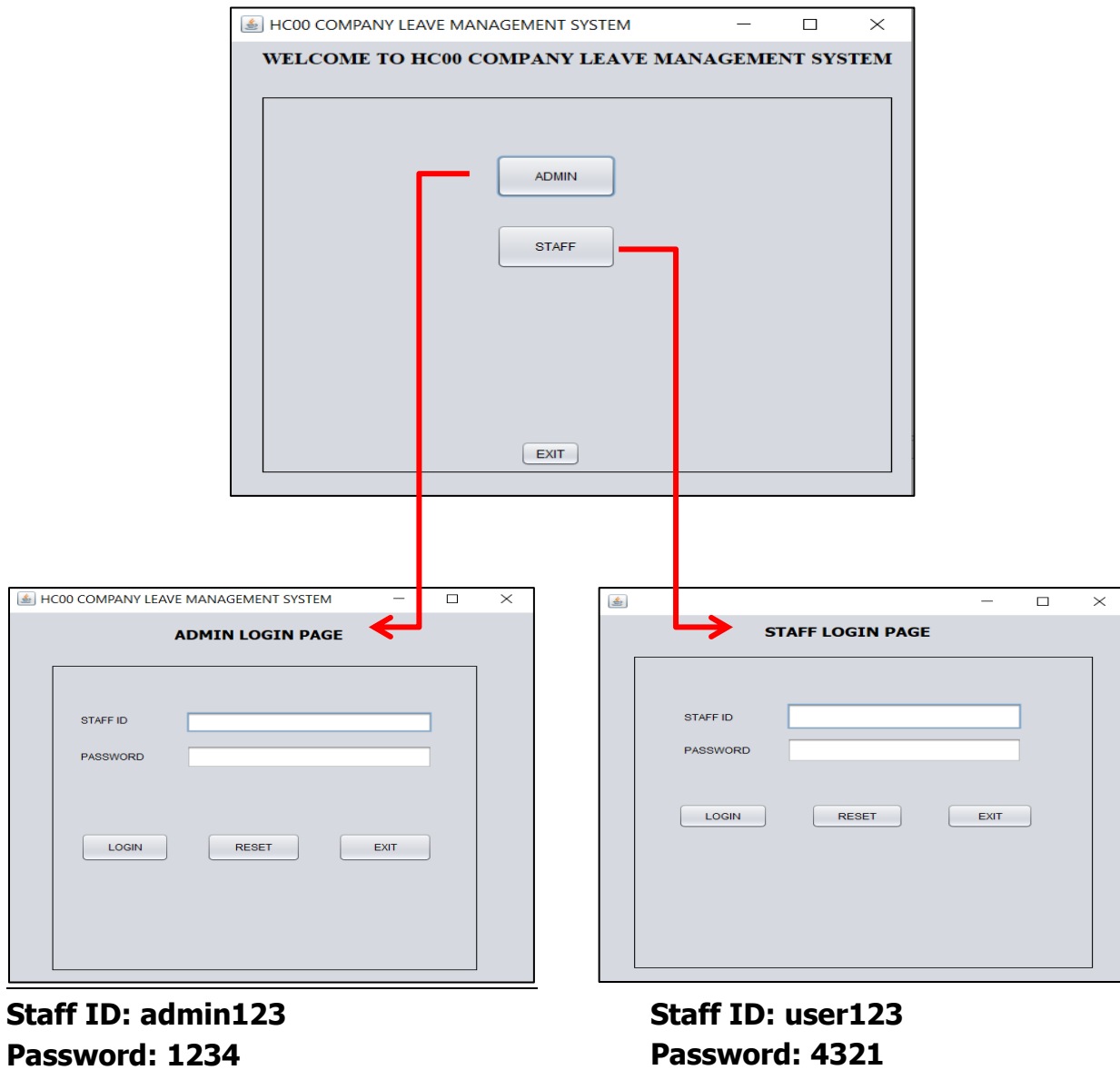
- To reopen and display updated text file of leave application form into JTextArea, whether leave is approved/disapproved (class- **StaffCheckLeave**)

```
private void checkReq_buttonActionPerformed(java.awt.event.ActionEvent evt) {
    StringBuilder sb = new StringBuilder();

    try {
        File myObj = new File("New Leave Application.txt");
        Scanner myReader = new Scanner(myObj);
        while (myReader.hasNextLine()) {
            String data = myReader.nextLine();
            leaveDetails_txtArea.append(data);
            sb.append(System.lineSeparator());
        }
        myReader.close();
    } catch (FileNotFoundException e) {
        JOptionPane.showMessageDialog(null, "File not exist.", "Valid Application", JOptionPane.DEFAULT_OPTION);
        e.printStackTrace();
    }
}
```

5.0 USER MANUAL (HOW TO USE THE SYSTEM)

Step 1: The Home page is a role-based login system. Both Admin and Staff users will log in into different pages.



Step 2: After a staff has logged in, staff will be directed into page of **Staff main menu**.

Step 3: To apply new leave, staff need to click on button **Apply New Leave** and will be directed into **Leave Application Form**.

Step 3: Fill in the leave application form and click button **Confirm** to submit application. A summary of the leave application will be displayed in **JTextArea**.

Step 4: Exit system by clicking button **Exit**.

The image displays two screenshots of a web application titled "HC00 COMPANY LEAVE MANAGEMENT SYSTEM".

The top screenshot shows the "STAFF PAGE MENU" with three buttons: "APPLY NEW LEAVE", "CHECK LEAVE STATUS OF APPROVAL", and "EXIT". A red arrow points from the "APPLY NEW LEAVE" button to the bottom screenshot.

The bottom screenshot shows the "STAFF LEAVE APPLICATION FORM". It contains the following fields and controls:

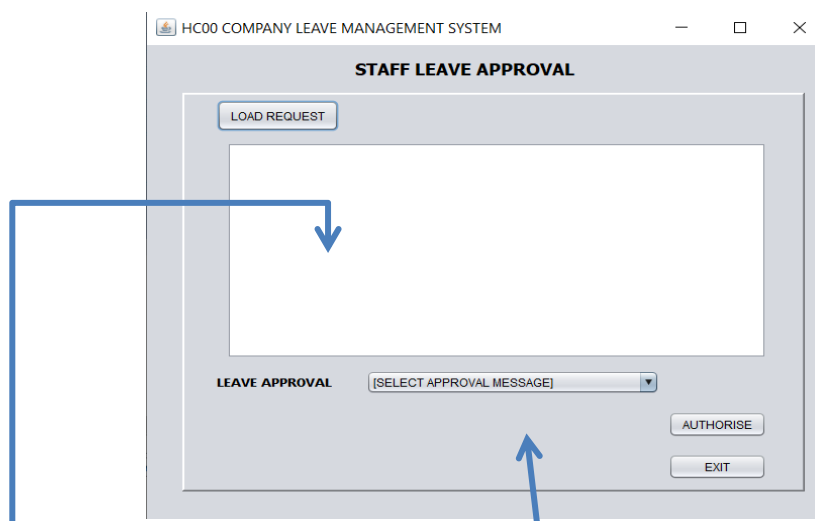
- STAFF ID:
- FULL NAME:
- TYPE OF LEAVE:
- DATE START LEAVE: (e.g 8/12/2020)
- DATE END LEAVE: (e.g 8/12/2020)
- LEAVE DETAILS:
- CONFIRM:
- EXIT:

Step 5: After **Admin** has been logged in, Admin will be directed into new page, **Staff Leave Approval Page**. Click on button **Load Request** to check new leave application form details from staff.

Step 6: **Select** an item of leave approval combo box, either to approve or disapprove leave.

Step 7: After selected item of approve/disapprove combo box, click button **Authorize**.

Step 8: Exit system by clicking **Exit** button.



The data of staff leave application will be displayed in the JTextArea after button Load Request is clicked.

Select either Approve or Disapprove

Step 9: Staff **log in** back into the system to check whether their leave request has been responded by Admin. Click button **Check Request** to displayed their application form details with updated leave status of approve/disapprove.



