

**SIES COLLEGE OF ARTS, SCIENCE & COMMERCE**  
**(AUTONOMOUS)**  
**SION (W), MUMBAI-22**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**SYBSc(IT), SEMESTER IV**

**INTERNAL PROJECT**

For the Subject

**Core Java**

Title of the Project : **JTabbedPane**

Submitted by

1. Mange Vivek Jitendra – SIT2324029
2. Sahu Kanhucharan Danardan- SIT2324047
- 3.Sharma Abhinandan Rajkishor – SIT2324051
- 4.Taleti Sujal Ravi – SIT2324060

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## **I. Details of the component**

**Classname:-** JTabbedPane

### **Hierarchy:-**

- [java.lang.Object](#)
  - [java.awt.Component](#)
    - [java.awt.Container](#)
      - [javax.swing.JComponent](#)
        - javax.swing.JTabbedPane

**About the component:-** A component that lets the user switch between a group of components by clicking on a tab with a given title and/or icon.

Tabs/components are added to a TabbedPane object by using the addTab and insertTab methods. A tab is represented by an index corresponding to the position it was added in, where the first tab has an index equal to 0 and the last tab has an index equal to the tab count minus 1.

The TabbedPane uses a SingleSelectionModel to represent the set of tab indices and the currently selected index. If the tab count is greater than 0, then there will always be a selected index, which by default will be initialized to the first tab. If the tab count is 0, then the selected index will be -1.

## **Constructors(5)**

### **1)JTabbedPane()**

Creates an empty TabbedPane with a default tab placement of JTabbedPane.TOP.

Eg :- `public void JTabbedPane()  
JTabbedPane tp = new JTabbedPane();`

### **2)JTabbedPane(int tabPlacement)**

Creates an empty TabbedPane with the specified tab placement of either: JTabbedPane.TOP, JTabbedPane.BOTTOM, JTabbedPane.LEFT, or JTabbedPane.RIGHT

Eg:-`public void JTabbedPane(int tabPlacement)  
JTabbedPane tp = new JTabbedPane(JTabbedPane.BOTTOM);`

### **3)JTabbedPane(int tabPlacement, int tabLayoutPolicy)**

Creates an empty TabbedPane with the specified tab placement and tab layout policy.

Eg:- `public void JTabbedPane(int tabPlacement, int tabLayoutPolicy)  
JTabbedPane tp = new JTabbedPane(JTabbedPane.TOP,  
JTabbedPane.WRAP_TAB_LAYOUT);`

### **4) JButton()**

Creates a button with no set text or icon.

Eg:- `public void JButton()  
JButton button = new JButton();`

### **5)JButton(String text)**

Creates a button with text.

Eg:- `public void JButton()  
JButton button = new JButton("Click me");`

## Methods (5)

### 1.addTab(String title, Component component)

This method is used to add a new tab to the tabbed pane with a given title and component.

Eg :- public addTab(String title, Component component)

```
tabbedPane.addTab("Tab 1", panel1);
```

### 2. removeTabAt(int index)

This method removes the tab at the specified index.

Eg:-public removeTabAt(int index)

```
tabbedPane.removeTabAt(2);
```

### 3. setIconAt(int index, Icon icon)

This method sets the icon of the tab at the specified index.

Eg :- public setIconAt(int index, Icon icon)

```
tabbedPane.setIconAt(1, new ImageIcon("icon.png"));
```

### 4. removeALL()

This method removes all tabs from the JTabbedPane

Eg :- public removeALL()

```
tabbedPane.removeAll();
```

### 5. setTitleAt(int index, String title)

This method sets the title of the tab at the specified index.

Eg:- public setTitleAt(int index, String title)

```
tabbedPane.setTitleAt(0, "New Tab 1");
```

## **II. Event details**

**User's Activity :-** Visiting and enrolling online courses using different Tab

**Event class :-** ChangeEvent

**Event Listener :-** ChangeListener

**Methods to be implemented :-** `public void` stateChanged(`ChangeEvent` e)

Eg :- `tabbedPane.addChangeListener(new ChangeListener() {  
 public void stateChanged(ChangeEvent e) {  
 JTabbedPane pane = (JTabbedPane) e.getSource();  
 int index = pane.getSelectedIndex();  
 JOptionPane.showMessageDialog ("Tab changed to: " +  
pane.getTitleAt(index));  
 }  
});`

### III. Java Code

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.table.DefaultTableModel;
import javax.swing.*;
import javax.swing.event.*;

public class Home1 extends JFrame {

    private static final long serialVersionUID = 1L;
    private JPanel contentPane;
    private JTable table_2;

    public static void main(String[] args) {
        Home1 frame = new Home1();
        frame.setSize(1200, 900);
        frame.setVisible(true);
    }

    public Home1() {
        getContentPane().setLayout(null);

        JTabbedPane tabbedPane = new JTabbedPane(JTabbedPane.TOP);
        tabbedPane.setBounds(100, 14, 927, 555); //10,14,956,555
        getContentPane().add(tabbedPane);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        JPanel panel_1 = new JPanel();
        tabbedPane.addTab("Home", null, panel_1, null);

        JPanel panel = new JPanel();
        tabbedPane.addTab("Course", null, panel, null);

        JPanel panel_2 = new JPanel();
        tabbedPane.addTab("Admin", null, panel_2, null);
        panel_2.setLayout(null);
        panel_1.setLayout(null);

        JTabbedPane tabbedPane_1 = new JTabbedPane(JTabbedPane.TOP);
        tabbedPane.addTab("DATABASE", null, tabbedPane_1, null);
        JScrollPane scrollPane = new JScrollPane();
        scrollPane.setBounds(17, 34, 750, 427);
        tabbedPane_1.add(scrollPane);
    }
}
```

```

        tabbedPane.addChangeListener(new ChangeListener() {
            public void stateChanged(ChangeEvent e) {
                JTabbedPane pane = (JTabbedPane) e.getSource();
                int index = pane.getSelectedIndex();
                JOptionPane.showMessageDialog(Home1.this, "Tab changed to:
" + pane.getTitleAt(index));
            }
        });

//Home Page
JLabel heading = new JLabel("Tech Star");
heading.setBounds(331, 10, 143, 48);
heading.setFont(new Font("Times New Roman", Font.BOLD, 30));
panel_1.add(heading);

JLabel lblNewLabel_6 = new JLabel("");
Image img1 = new
ImageIcon(this.getClass().getResource("/title.jpg")).getImage();
lblNewLabel_6.setIcon(new ImageIcon(img1));
lblNewLabel_6.setBounds(484, 10, 64, 48);
panel_1.add(lblNewLabel_6);

JLabel line1 = new JLabel(
    "----- Welcome
to Tech Star -----");
line1.setBounds(11, 48, 744, 48);
line1.setFont(new Font("Times New Roman", Font.BOLD, 20));
panel_1.add(line1);

JLabel lblNewLabel_3 = new JLabel("The most trusted way to
become an IT Expert");
lblNewLabel_3.setBounds(11, 119, 445, 27);
lblNewLabel_3.setFont(new Font("Times New Roman", Font.BOLD,
20));
panel_1.add(lblNewLabel_3);

JLabel line2 = new JLabel("* KEY POINTS *");
line2.setBounds(11, 143, 398, 40);
line2.setFont(new Font("Times New Roman", Font.BOLD, 18));
panel_1.add(line2);

JLabel lblNewLabel_3_1 = new JLabel("1.Land your dream tech
job");
lblNewLabel_3_1.setBounds(20, 186, 367, 27);
lblNewLabel_3_1.setFont(new Font("Times New Roman", Font.BOLD,
16));

```



```

        panel_1.add(lblNewLabel_3_1);

        JLabel lblNewLabel_3_2 = new JLabel("2.Mock interviews,
hackathons and more");
        lblNewLabel_3_2.setBounds(20, 224, 367, 27);
        lblNewLabel_3_2.setFont(new Font("Times New Roman", Font.BOLD,
16));
        panel_1.add(lblNewLabel_3_2);

        JLabel lblNewLabel_3_3 = new JLabel("3.Job-ready portfolio of
rich, functional apps");
        lblNewLabel_3_3.setBounds(20, 262, 367, 27);
        lblNewLabel_3_3.setFont(new Font("Times New Roman", Font.BOLD,
16));
        panel_1.add(lblNewLabel_3_3);

        JLabel lblNewLabel_3_4 = new JLabel("4.Ticket to fast-tracked
career growth in tech");
        lblNewLabel_3_4.setBounds(20, 300, 367, 27);
        lblNewLabel_3_4.setFont(new Font("Times New Roman", Font.BOLD,
16));
        panel_1.add(lblNewLabel_3_4);

        JLabel lblNewLabel_3_5 = new JLabel("5.Reserve a Seat for INR
500/-");
        lblNewLabel_3_5.setBounds(20, 340, 367, 27);
        lblNewLabel_3_5.setFont(new Font("Times New Roman", Font.BOLD,
16));
        panel_1.add(lblNewLabel_3_5);

        JLabel lblNewLabel_5 = new JLabel("");
        lblNewLabel_5.setBounds(491, 127, 386, 336);
        Image img = new
ImageIcon(this.getClass().getResource("/home1.jpg")).getImage();
        // Resize the image to your desired dimensions
        int width7 = 450; // New width
        int height7 = 400; // New height
        Image resizedHome = img.getScaledInstance(width7, height7,
Image.SCALE_SMOOTH);
        lblNewLabel_5.setIcon(new ImageIcon(resizedHome));
        lblNewLabel_5.setBounds(489, 85, width7, height7);
        panel_1.add(lblNewLabel_5);
        panel.setLayout(null);

        //Course Page
        JLabel lblNewLabel = new JLabel("Course");

```

```

        lblNewLabel.setBounds(400, 11, 115, 37);
        lblNewLabel.setFont(new Font("Times New Roman", Font.BOLD,
30));
        panel.add(lblNewLabel);

        JLabel lblNewLabel_2 = new JLabel("");
        lblNewLabel_2.setBounds(78, 39, 200, 150);
        panel.add(lblNewLabel_2);
        Image imgcourl = new
ImageIcon(this.getClass().getResource("/Full Stack.jpg")).getImage();
        // Resize the image to your desired dimensions
        int width = 200; // New width
        int height = 150; // New height
        Image resizedImg = imgcourl.getScaledInstance(width, height,
Image.SCALE_SMOOTH);
        lblNewLabel_2.setIcon(new ImageIcon(resizedImg));
        panel.add(lblNewLabel_2);
        JLabel lblNewLabel_4 = new JLabel("Full Stack Development");
        lblNewLabel_4.setFont(new Font("Times New Roman", Font.BOLD,
16));
        lblNewLabel_4.setBounds(100, 200, 200, 27);
        panel.add(lblNewLabel_4);
        JLabel lblNewLabel_13_2 = new JLabel("FEE :- 7000/");
        lblNewLabel_13_2.setFont(new Font("Times New Roman", Font.BOLD,
16));
        lblNewLabel_13_2.setBounds(125, 223, 100, 20);
        panel.add(lblNewLabel_13_2);

        JLabel lblNewLabel_2_1 = new JLabel("");
        lblNewLabel_2_1.setBounds(588, 39, 200, 150);
        panel.add(lblNewLabel_2_1);
        Image img2 = new
ImageIcon(this.getClass().getResource("/Python.jpg")).getImage();
        // Resize the image to your desired dimensions
        int width1 = 200; // New width
        int height1 = 150; // New height
        Image resizedImg2 = img2.getScaledInstance(width1, height1,
Image.SCALE_SMOOTH);
        lblNewLabel_2_1.setIcon(new ImageIcon(resizedImg2));
        panel.add(lblNewLabel_2_1);
        JLabel lblNewLabel_7 = new JLabel("Python Programming");
        lblNewLabel_7.setFont(new Font("Times New Roman", Font.BOLD,
16));
        lblNewLabel_7.setBounds(620, 203, 200, 20);
        panel.add(lblNewLabel_7);
        JLabel lblNewLabel_13_1 = new JLabel("FEE :- 3000/-");
        lblNewLabel_13_1.setFont(new Font("Times New Roman", Font.BOLD,
16));

```

```

        lblNewLabel_13_1.setBounds(650, 223, 100, 20);
        panel.add(lblNewLabel_13_1);

        JLabel lblNewLabel_2_2 = new JLabel("");
        lblNewLabel_2_2.setBounds(91, 271, 200, 150);
        panel.add(lblNewLabel_2_2);
        Image img3 = new
ImageIcon(this.getClass().getResource("/Java.jpg")).getImage();
        // Resize the image to your desired dimensions
        int width3 = 200; // New width
        int height3 = 150; // New height
        Image resizedImg3 = img3.getScaledInstance(width3, height3,
Image.SCALE_SMOOTH);
        lblNewLabel_2_2.setIcon(new ImageIcon(resizedImg3));
        panel.add(lblNewLabel_2_2);
        JLabel lblNewLabel_8 = new JLabel("Core Java");
        lblNewLabel_8.setFont(new Font("Times New Roman", Font.BOLD,
16));
        lblNewLabel_8.setBounds(160, 419, 100, 20);
        panel.add(lblNewLabel_8);
        JLabel lblNewLabel_12 = new JLabel("FEE :- 4000/-");
        lblNewLabel_12.setFont(new Font("Times New Roman", Font.BOLD,
16));
        lblNewLabel_12.setBounds(160, 450, 100, 20);
        panel.add(lblNewLabel_12);

        JLabel lblNewLabel_2_3 = new JLabel("");
        lblNewLabel_2_3.setBounds(600, 271, 200, 150);
        panel.add(lblNewLabel_2_3);
        Image img4 = new ImageIcon(this.getClass().getResource("/ML &
AI.jpg")).getImage();
        // Resize the image to your desired dimensions
        int width4 = 200; // New width
        int height4 = 150; // New height
        Image resizedImg4 = img4.getScaledInstance(width4, height4,
Image.SCALE_SMOOTH);
        lblNewLabel_2_3.setIcon(new ImageIcon(resizedImg4));
        panel.add(lblNewLabel_2_3);
        JLabel lblNewLabel_9 = new JLabel("Artificial Intelligence");
        lblNewLabel_9.setFont(new Font("Times New Roman", Font.BOLD,
16));
        lblNewLabel_9.setBounds(630, 432, 200, 20);
        panel.add(lblNewLabel_9);
        JLabel lblNewLabel_13 = new JLabel("FEE :- 5000/-");
        lblNewLabel_13.setFont(new Font("Times New Roman", Font.BOLD,
16));
        lblNewLabel_13.setBounds(660, 463, 100, 20);
        panel.add(lblNewLabel_13);

```

```
//Registration Tab
JButton Registerbtn = new JButton("Register");
Registerbtn.setBounds(400, 450, 115, 37);

Registerbtn.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        JPanel panel_3 = new JPanel();
        tabbedPane.addTab("Register", null, panel_3, null);
        panel_3.setLayout(null);
        panel_1.setLayout(null);

        JLabel lblNewLabel2 = new JLabel("Register Here");
        lblNewLabel2.setBounds(291, 11, 162, 26);
        lblNewLabel2.setFont(new Font("Segoe UI Black",
Font.PLAIN, 18));
        panel_3.add(lblNewLabel2);

        JLabel Name = new JLabel("Name");
        Name.setBounds(30, 94, 45, 13);
        panel_3.add(Name);

        JTextField textField_2 = new JTextField();
        textField_2.setBounds(142, 91, 311, 19);
        panel_3.add(textField_2);
        textField_2.setColumns(10);

        JLabel Coursename = new JLabel("Course Name");
        Coursename.setBounds(30, 143, 86, 13);
        panel_3.add(Coursename);

        JTextField textField_3 = new JTextField();
        textField_3.setColumns(10);
        textField_3.setBounds(142, 140, 234, 19);
        panel_3.add(textField_3);

        JLabel Phone = new JLabel("Phone");
        Phone.setBounds(30, 193, 45, 13);
        panel_3.add(Phone);

        JTextField textField_4 = new JTextField();
        textField_4.setColumns(10);
        textField_4.setBounds(142, 190, 234, 19);
        panel_3.add(textField_4);

        JLabel Email = new JLabel("Email");
        Email.setBounds(30, 240, 45, 13);
```

```

        panel_3.add(Email);

        JTextField textField_5 = new JTextField();
        textField_5.setColumns(10);
        textField_5.setBounds(142, 237, 311, 19);
        panel_3.add(textField_5);

        JLabel City = new JLabel("City");
        City.setBounds(30, 291, 45, 13);
        panel_3.add(City);

        JTextField textField_6 = new JTextField();
        textField_6.setColumns(10);
        textField_6.setBounds(142, 288, 104, 19);
        panel_3.add(textField_6);

        JTextField textField = new JTextField();

        JButton backbtn = new JButton("Back");
        backbtn.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                int selectedIndex =
tabbedPane.getSelectedIndex();
                if (selectedIndex != -1) {
                    tabbedPane.setSelectedIndex(1);
                    tabbedPane.removeTabAt(selectedIndex);
                    tabbedPane.setSelectedIndex(selectedIndex -
3);
                }
            }
        });

        JButton btnNewButton_1 = new JButton("SUBMIT");
        btnNewButton_1.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                if (textField_2.getText().equals("") ||
textField_3.getText().equals("")
                || textField_4.getText().equals("") ||
textField_5.getText().equals("")
                || textField_6.getText().equals("")) {

JOptionPane.showMessageDialog(Homel.this, "Enter All data");
                } else {
                    String data[] = {
textField_2.getText(), textField_3.getText(), textField_4.getText(),
                    textField_5.getText(),
textField_6.getText() };

```

```

DefaultTableModel tblModel =
(DefaultTableModel) table_2.getModel();
tblModel.addRow(data);

JOptionPane.showMessageDialog(Home1.this, "Registration Succesfull");
textField.setText("");
    }
    }
});
backbtn.setBounds(400, 383, 94, 38);
btnNewButton_1.setBounds(64, 383, 94, 38);
panel_3.add(btnNewButton_1);
panel_3.add(backbtn);

tabbedPane.setSelectedIndex(tabbedPane.getTabCount() - 1); // Switch to
the new tab
    }
});
panel.add(Registerbtn);

//Admin Tab
JLabel lblNewLabel2 = new JLabel("Admin");
lblNewLabel2.setBounds(291, 100, 162, 26);
lblNewLabel2.setFont(new Font("Segoe UI Black", Font.PLAIN,
25));
panel_2.add(lblNewLabel2);

JLabel lblNewLabel_1 = new JLabel("Admin ID :");
lblNewLabel_1.setFont(new Font("Tahoma", Font.BOLD, 18));
lblNewLabel_1.setBounds(121, 150, 107, 39);
panel_2.add(lblNewLabel_1);

JTextField textField = new JTextField();
textField.setBounds(226, 150, 272, 39);
panel_2.add(textField);
textField.setColumns(10);

JLabel lblNewLabel_1_1 = new JLabel("Password:");
lblNewLabel_1_1.setFont(new Font("Tahoma", Font.BOLD, 18));
lblNewLabel_1_1.setBounds(121, 243, 107, 39);
panel_2.add(lblNewLabel_1_1);

JPasswordField passwordField = new JPasswordField();
passwordField.setBounds(226, 238, 272, 39);
panel_2.add(passwordField);

```

```

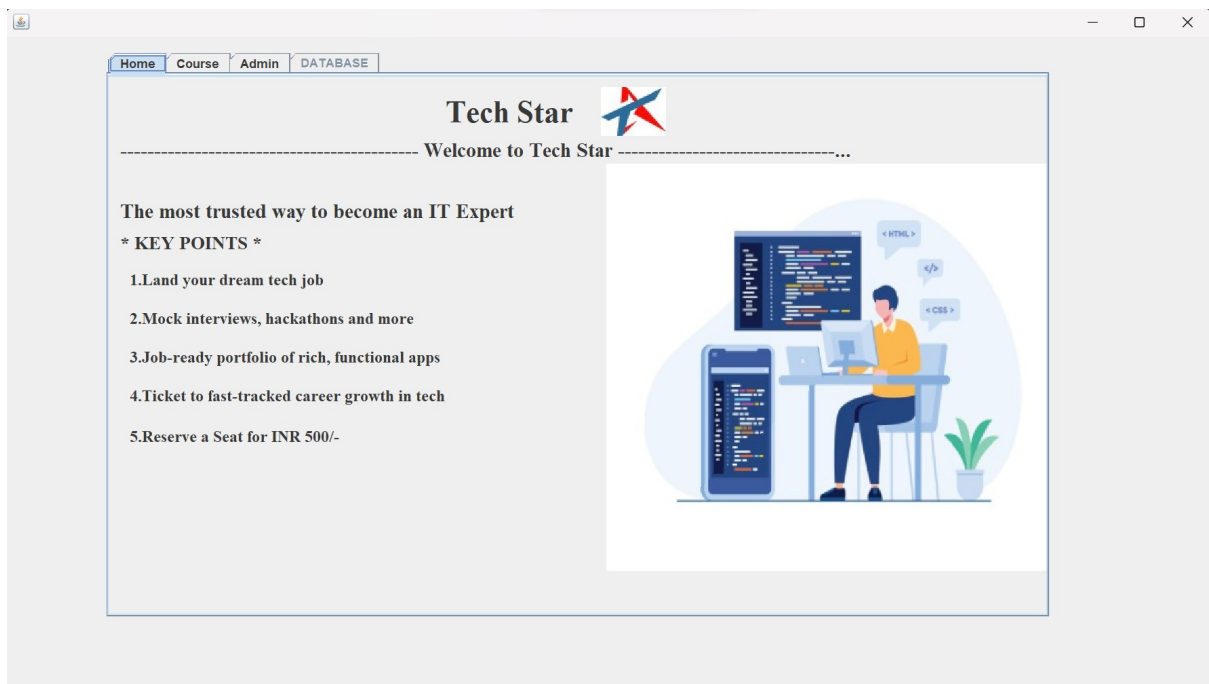
        JButton loginButton = new JButton("Login");
        loginButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                String username = textField.getText();
                String password = new
String(passwordField.getPassword());
                if (username.equals("admin") &&
password.equals("12345")) {
                    tabbedPane.setEnabledAt(3, true);
                } else {
                    JOptionPane.showMessageDialog(Home1.this,
"Invalid Username or password");
                }
            }
        });
        loginButton.setFont(new Font("Tahoma", Font.BOLD, 18));
        loginButton.setBounds(295, 342, 185, 63);
        panel_2.add(loginButton);

        //Database Tab
        table_2 = new JTable();
        scrollPane.setViewportView(table_2);
        table_2.setModel(new DefaultTableModel(new Object[][] {},
            new String[] { "NAME", "COURSE NAME", "PHONE NUMBER",
"EMAIL", "CITY" }));

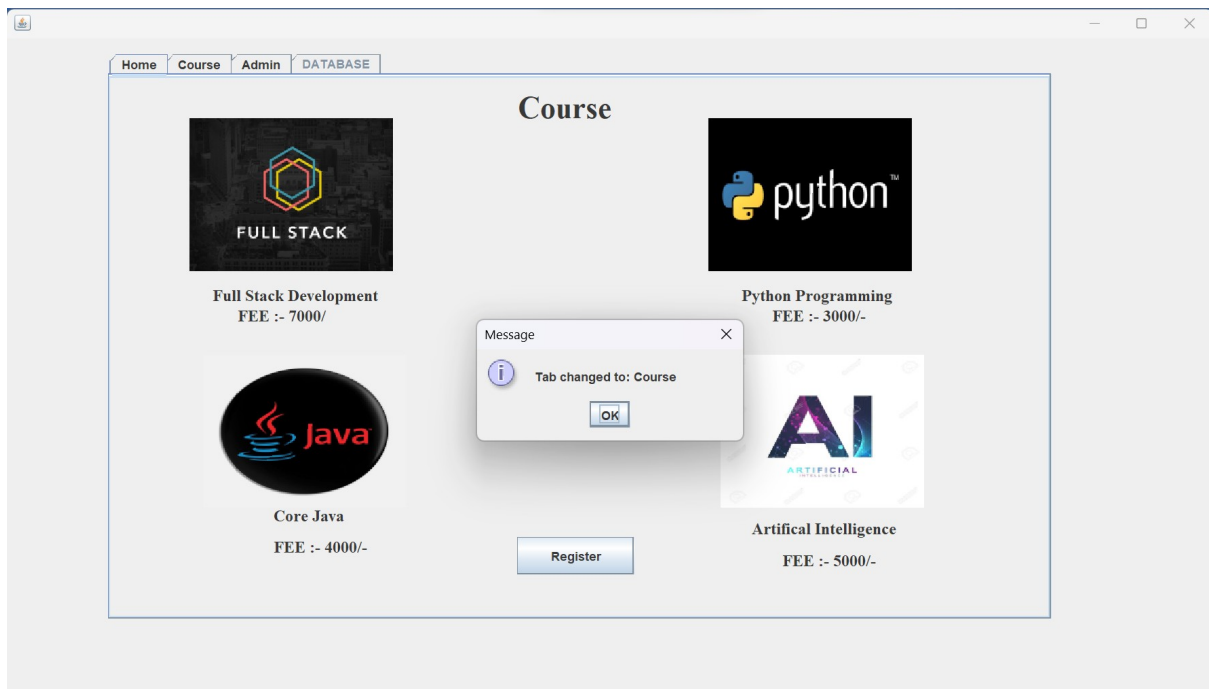
        table_2.getColumnModel().getColumn(0).setMinWidth(100);
        table_2.getColumnModel().getColumn(1).setMinWidth(100);
        table_2.getColumnModel().getColumn(2).setMinWidth(180);
        table_2.getColumnModel().getColumn(2).setMaxWidth(0);
        tabbedPane.setEnabledAt(3, false);
    }
}

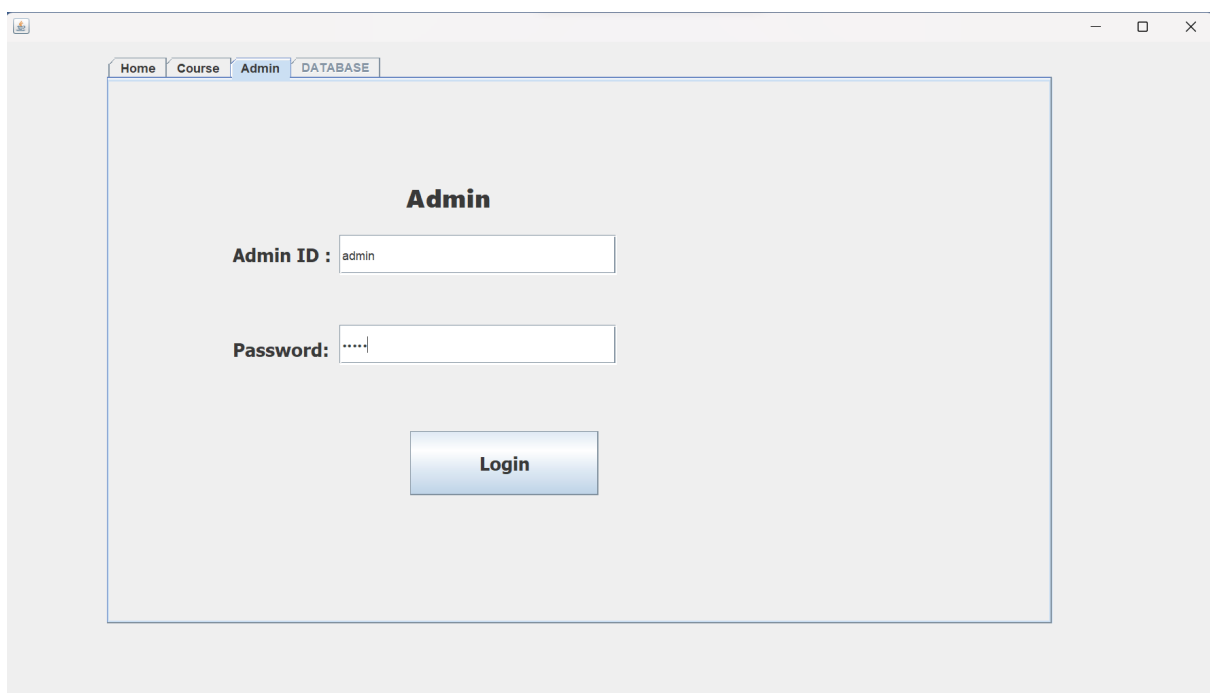
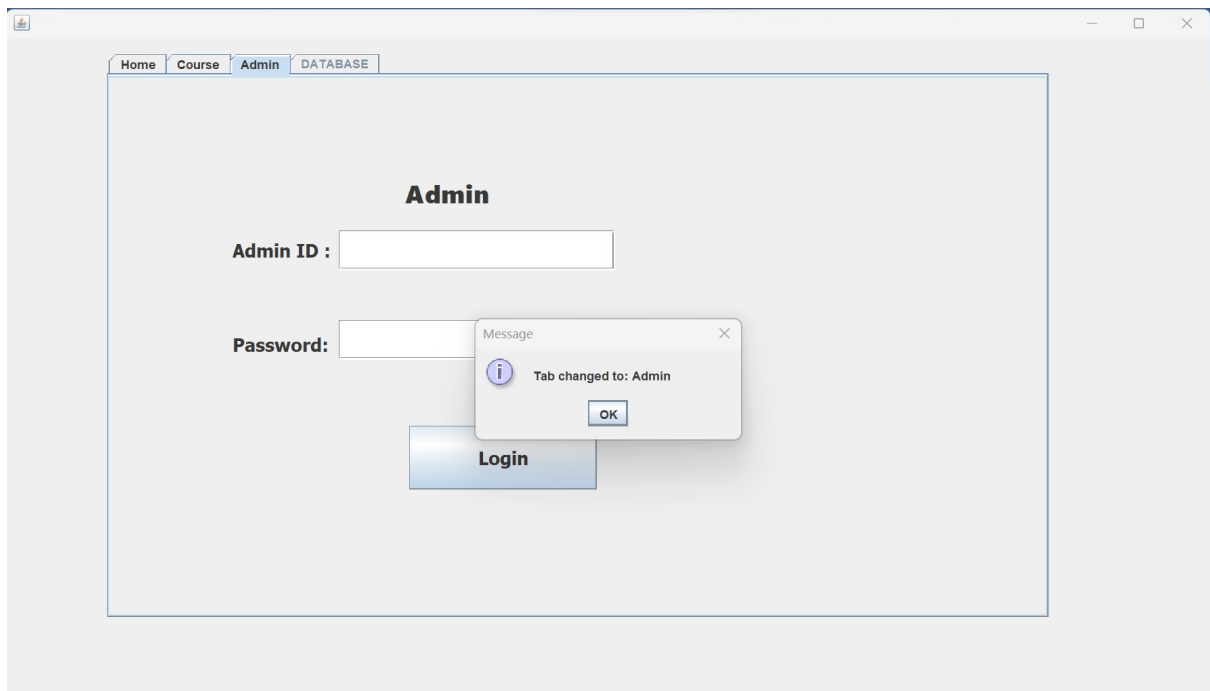
```

## IV. Snapshots of the Code Output









HomeCourseAdminDATABASERegister

Register Here

Name

Course Name

Phone

Email

City

SUBMIT

Back

Message

i

Tab changed to: Register

OK

HomeCourseAdminDATABASERegister

Register Here

Name

Course Name

Phone

Email

City

SUBMIT

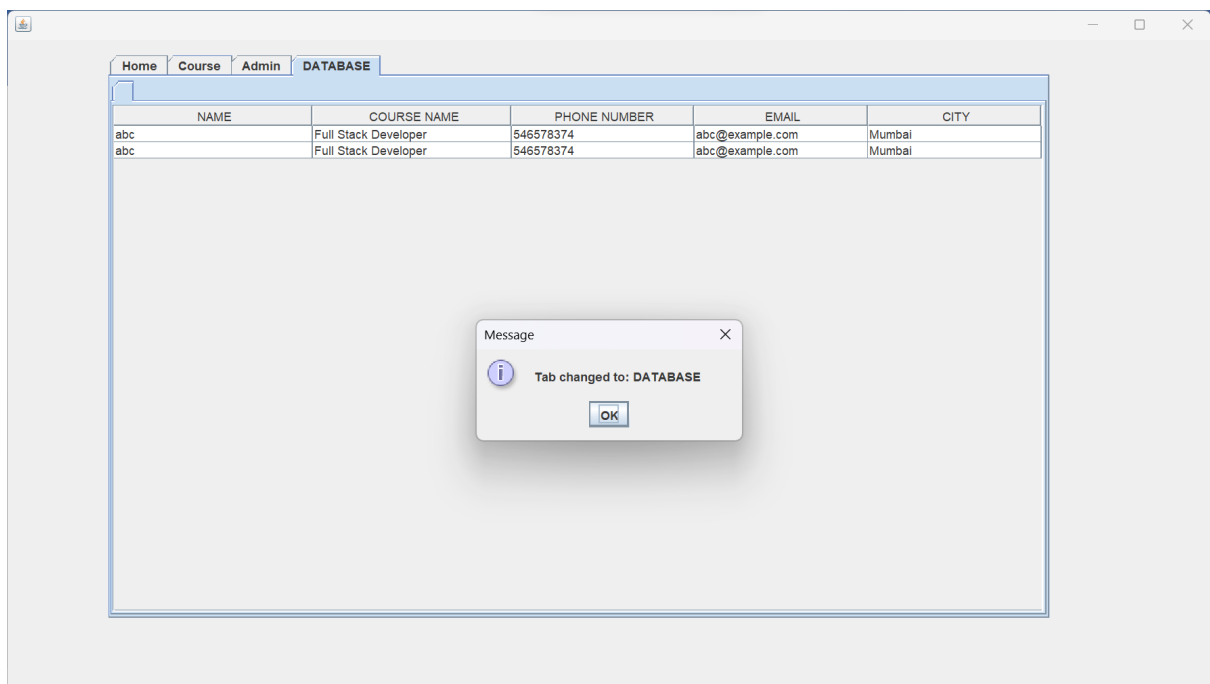
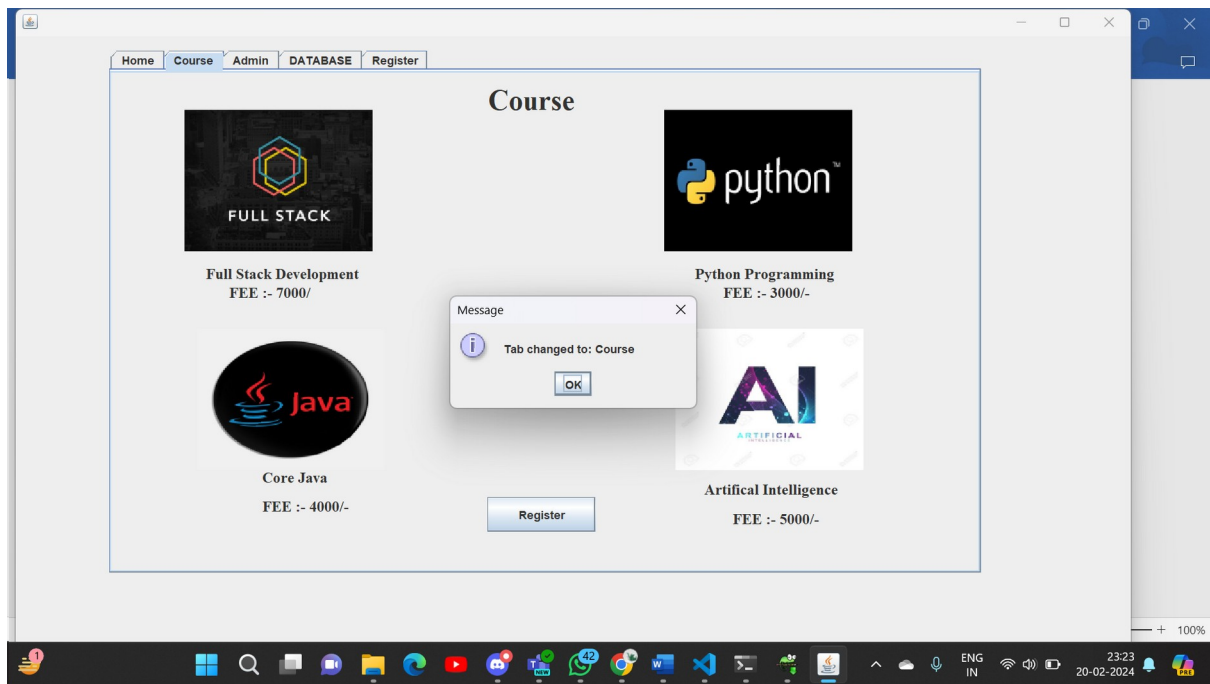
Back

The screenshot shows a web application window with a navigation bar at the top containing tabs: Home, Course, Admin, DATABASE, and Register. The 'Register' tab is active. Below the navigation bar, the title 'Register Here' is centered. The registration form contains the following fields and values:

Field	Value
Name	abc
Course Name	Full Stack Developer
Phone	546578374
Email	abc@example.com
City	Mumbai

At the bottom of the form, there are two buttons: 'SUBMIT' and 'Back'. A modal message box is overlaid on the form, displaying the text 'Registration Succesfull' (note the spelling) with an 'OK' button.

When we press Back Button back to Course Tab



Home Course Admin DATABASE				
NAME	COURSE NAME	PHONE NUMBER	EMAIL	CITY
abc	Full Stack Developer	546578374	abc@example.com	Mumbai
abc	Full Stack Developer	546578374	abc@example.com	Mumbai