

**BITS PILANI, DUBAI CAMPUS**  
**DUBAI INTERNATIONAL ACADEMIC CITY, DUBAI**

**FIRST SEMESTER 2025 – 2026**

**COURSE:** CSF213/ECOM213/MACF212 (Object Oriented Programming)

**COMPONENT:** Lab 13

**Week: 14**

**Aim:** Learn Java Swing programming and understand how GUI components, layouts, and event handling are used to build interactive desktop applications.

**Objective:** To understand and apply Swing components, layout managers, and event-handling mechanisms to design user-friendly graphical interfaces using Java. Students will learn to create windows, handle events, arrange components with layout managers, and develop functional GUI applications.

**Problem Descriptions:**

1. Write a Java program that makes a simple graphical window that asks for the user's name. The program should show a JFrame with the title "User Info." Inside the JFrame, there should be a JLabel asking the user to type in their name, a JTextField where they can do so, and a JButton with the label "Submit." The program should read the text from the JTextField and show a message dialog that says "Welcome, <name>!" when the button is clicked. To put the parts in the frame, use a simple layout like FlowLayout.
2. Write a Java Swing program that uses checkboxes and radio buttons to get basic information about what the user likes. The window should have a JLabel that asks the user to choose their hobbies, and below that, there should be a list of JCheckBox options like Reading, Gaming, and Music. Add another JLabel below that one that asks the user to choose their gender. This should be followed by two JRadioButton options (Male and Female) that are grouped together in a ButtonGroup. Add a button that says "Show Selection." When the user clicks it, a dialog box should show their chosen hobbies and gender. GridLayout should be used to keep components in order.
3. Write a Java Swing program that lets users interact with menus and combo boxes. At the top of the program, there should be a JMenuBar with a File menu that has two items: Clear and Exit. A JLabel that asks the user to choose a country and a JComboBox that lists at least five countries should be in the main part of the window. Add a JButton with the label "Show Country." When you click it, it should show the chosen country in a dialog box. The Exit menu item should close the app, and the Clear menu item should reset the combo box selection. Use BorderLayout to put the menu and parts in the right places.
4. Use Swing to make a Java program that makes a full Student Registration Form with different types of Swing components arranged with different layout managers. There should be JTextField inputs for Name and Email, JCheckBox options for choosing skills (like Java, Python, and C++), JRadioButton options for choosing the course type (Online or Offline), and a JComboBox for choosing the semester. There should be a button with the word "Register" on it. When you click it, it should gather all the information you entered and show it clearly in a dialog box or separate panel. The main form should use BoxLayout to arrange things vertically. You should also use FlowLayout or GridLayout to organize the subcomponents in a way that is structured and easy for users to understand.