



PUNE INSTITUTE OF COMPUTER TECHNOLOGY, PUNE -43

Department of Electronics and Telecommunication Engineering

ASSESSMENT YEAR: - 2021-22

CLASS: - TE-V

Subject: - Advanced Java Programming

Expt. No: 09

LAB Ref: ETC/2021-22/

ROLL NO: 32147

SUBMISSION DATE:

Title: - Introduction to Swing Components

Problem Statement: - Creating Notepad application using Swing

Objectives: -

- 1.To study and learn about Swing in java.
- 2.To study and learn the functionalities of swing components.
- 3.To implement the components of swing in java.

Theory :

Java Swing is a part of Java Foundation Classes (JFC) that is used to create window-based applications. It is built on the top of AWT (Abstract Windowing Toolkit) API and entirely written in Java. Unlike AWT, Java Swing provides platform-independent and lightweight components.

The javax.swing package provides classes for java swing API such as JButton, JTextField, JTextArea, JRadioButton, JCheckbox, JMenu, JColorChooser etc.

To create simple frame using Swing. There are two ways to create a GUI using JFrame in swing:

By extending Frame class (inheritance)

By creating the object of Frame class (association)

Create a frame using Swing inside main()

The methods of Component class are widely used in java swing that are given below.

Method	Description
public void add(Component c)	add a component on another component.
public void setSize(int width,int height)	sets size of the component.
public void setLayout(LayoutManager m)	sets the layout manager for the component.
public void setVisible(boolean b)	sets the visibility of the component. It is by default false.

Creation of JFrame using Inheritance:

```
import javax.swing.*;
public class FirstSwingExample {
    public static void main(String[] args) {
        JFrame f=new JFrame();//creating instance of JFrame
```

```
f.setSize(400,500);//400 width and 500 height
f.setLayout(null);//using no layout managers
f.setVisible(true);//making the frame visible
}
}
```

Swing Framework contains a large set of components that allow a high level of customization and provide rich functionalities and is used to create window-based applications.

By creating the object of Frame class (association):

```
import javax.swing.*;
public class test1
{
    JFrame frame;

    test1()
    {
        // creating instance of JFrame with name "first way"
        frame=new JFrame("first way");

        // setting close operation
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        // adds button in JFrame
        frame.add(button);

        // sets 500 width and 600 height
        frame.setSize(500, 600);

        // uses no layout managers
        frame.setLayout(null);

        // makes the frame visible
        frame.setVisible(true);
    }
}
```

To create a simple notepad in Java Swing we will use a JTextArea, a JMenuBar and add JMenu to it and we will add JMenuItem. All the menu items will have ActionListener to detect any action.

There will be a menu bar and it will contain two menus and a button:

1. **File menu**
2. **Edit menu**
 - **cut**: this menu item is to cut the selected area and copy it to clipboard
 - **copy**: this menu item is to copy the selected area to the clipboard
 - **paste** : this menu item is to paste the text from the clipboard to the text area
3. **Close menu**

Diagram: -

Learning Outcomes: -		
	1	Studied Swing in Java
	2	Studied and implement various methods in swing.
	3	Studied and learnt the swing components in java.
	4	Learnt the difference between AWT and swing in Java

Continuous Assessment

RPP (out of 5)	SPO (out of 5)	Total (Out of 10)	Sign
			Date: -

*(RPP – Regularity, Punctuality, Performance), (SPO – Submission, Presentation, Oral)

Important Questions: -

- 1.What is Swing in java?
2. What is the difference between swing and AWT?
- 3.Enlist the different methods of JFrame component in Java?
- 4.Enlist different ways to create Frame in Swing?
- 5.Which events should be performed on JMenuItem component?