PARSHVANATH CHARITABLE TRUST'S

A.P. SHAH INSTITUTE OF TECHNOLOGY

Department of Computer Science and Engineering

Data Science

Subject: SBL-OOPM **Class: SE-DS**

Semester: III **A.Y. 2022-2023**

Experiment No. 14

- **Aim :** Write a Java program to demonstrate the use of AWT components like Label, Textfield, TextArea, Button, Checkbox, RadioButton etc.

  Objectives : To will learn about Java program to demonstrate the use of AWT components like Label, Textfield, TextArea, Button, Checkbox, RadioButton etc.

- **Prerequisites :** Students should know disadvantages of Procedure oriented programming language & the need of OOPs concepts to overcome those disadvantages.

- **Software used :** jdk 1.6.0

- **Theory :**

Java AWT (Abstract Window Toolkit) is *an API to develop Graphical User Interface (GUI) or windows-based applications* in Java.

Java AWT components are platform-dependent i.e. components are displayed according to the view of operating system. AWT is heavy weight i.e. its components are using the resources of underlying operating system (OS).

The java.awt package provides classes for AWT API such as TextField, Label, TextArea, RadioButton, CheckBox, Choice, List etc.

The AWT tutorial will help the user to understand Java GUI programming in simple and easy steps.

Java AWT Hierarchy

The hierarchy of Java AWT classes are given below.

Components

All the elements like the button, text fields, scroll bars, etc. are called components. In Java AWT, there are classes for each component as shown in above diagram. In order to place every component in a particular position on a screen, we need to add them to a container.

Container

The Container is a component in AWT that can contain another components like buttons, textfields, labels etc. The classes that extends Container class are known as container such as **Frame, Dialog** and **Panel**.

It is basically a screen where the where the components are placed at their specific locations. Thus it contains and controls the layout of components.

Types of containers:

There are four types of containers in Java AWT:

1. Window
2. Panel
3. Frame
4. Dialog

Window

The window is the container that have no borders and menu bars. You must use frame, dialog or another window for creating a window. We need to create an instance of Window class to create this container.

Panel

The Panel is the container that doesn't contain title bar, border or menu bar. It is generic container for holding the components. It can have other components like button, text field etc. An instance of Panel class creates a container, in which we can add components.

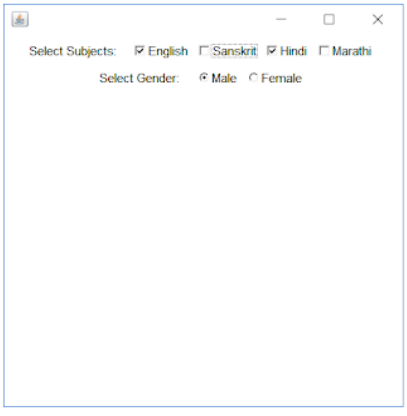
Frame

The Frame is the container that contain title bar and border and can have menu bars. It can have other components like button, text field, scrollbar etc. Frame is most widely used container while developing an AWT application.

```
import java.awt.*;
import java.util.*;

public class RadioDemo
{
   public static void main( String args[] )
   {
      Frame f = new Frame();
      f.setVisible(true);
```

```
        f.setSize(400,400);
        f.setLayout(new FlowLayout());

       Label l1 = new Label("Select Subjects:");

        Checkbox cb1 = new Checkbox("English");
        Checkbox cb2 = new Checkbox("Sanskrit");
        Checkbox cb3 = new Checkbox("Hindi");
        Checkbox cb4 = new Checkbox("Marathi");

        Label l2 = new Label("Select Gender:");
       CheckboxGroup cg = new CheckboxGroup();
        Checkbox c1 = new Checkbox("Male",cg,true);
        Checkbox c2 = new Checkbox("Female",cg,true);

        f.add(l1);
        f.add(cb1);
        f.add(cb2);
        f.add(cb3);
        f.add(cb4);
        f.add(l2);
        f.add(c1);
        f.add(c2);
    }

}
```

Output:



CONCLUSION : Summaries what you understood from this lab.