Experiment No. 11
Implement a program on Applet or AWT Controls
Date of Performance:
Date of Submission:

Aim: Implement a program on Applet or AWT Controls

Objective:

To develop application like Calculator, Games, Animation using AWT Controls.

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.

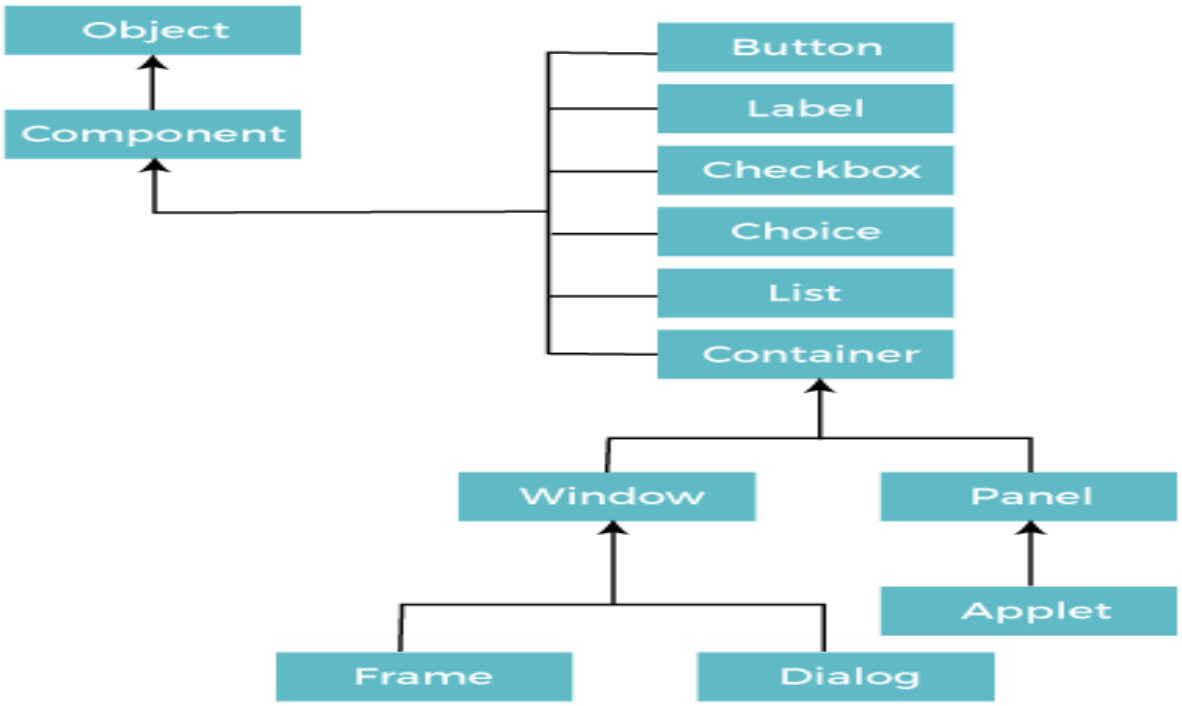
1. A general interface between Java and the native system, used for windowing, events and layout managers. This API is at the core of Java GUI programming and is also used by Swing and Java 2D. It contains the interface between the native windowing system and the Java application1.
2. A basic set of GUI widgets such as buttons, text boxes, and menus1. AWT also provides Graphics and imaging tools, such as shape, color, and font classes2. AWT also avails layout managers which helps in increasing the flexibility of the window layouts2

Java AWT calls the native platform calls the native platform (operating systems) subroutine for creating API components like TextField, ChechBox, button, etc.

For example, an AWT GUI with components like TextField, label and button will have different look and feel for the different platforms like Windows, MAC OS, and Unix. The reason for this is the platforms have different view for their native components and AWT directly calls the native subroutine that creates those components.

In simple words, an AWT application will look like a windows application in Windows OS whereas it will look like a Mac application in the MAC OS.

Java AWT Hierarchy

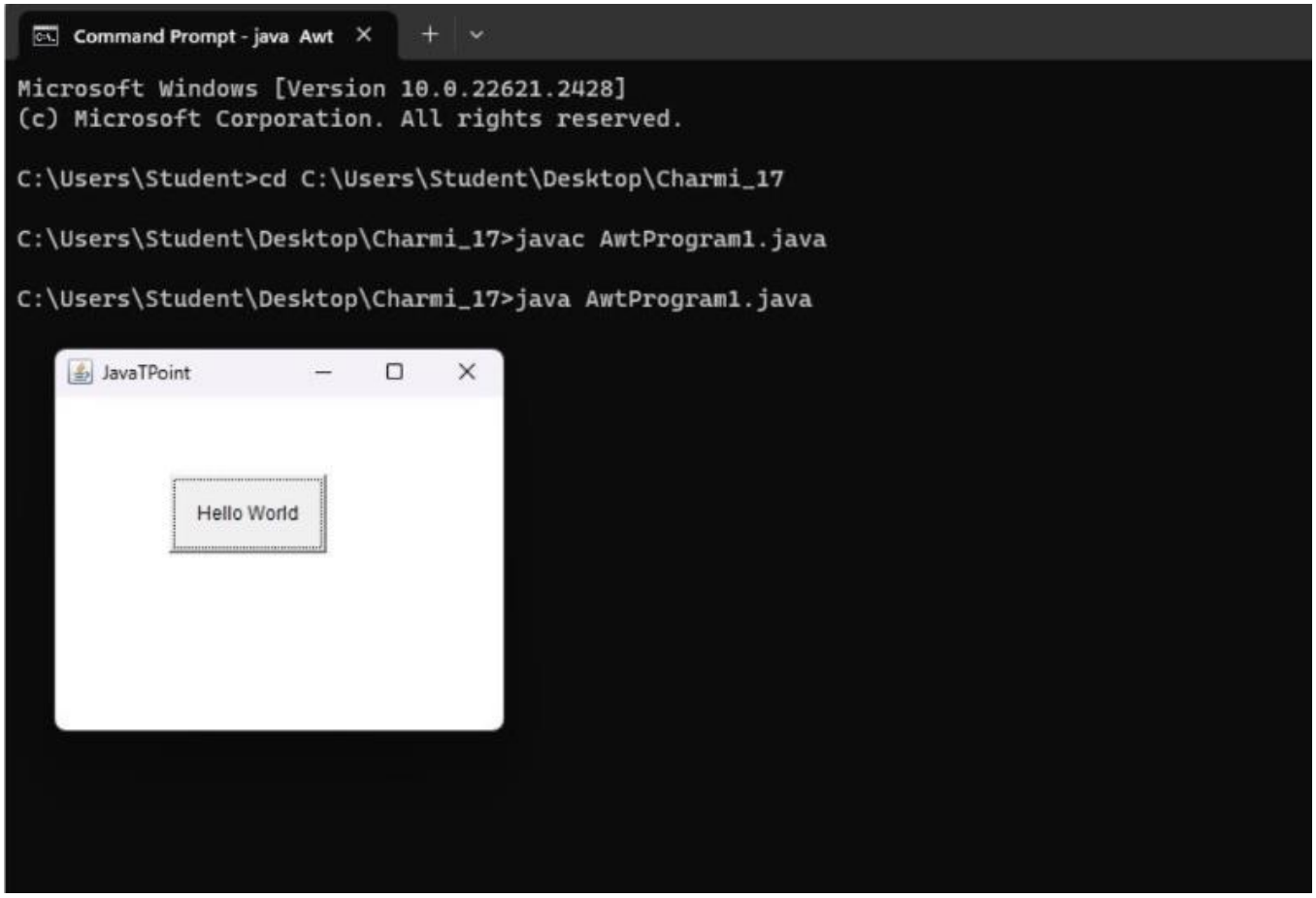


Code:

```
import java.awt.*;
public class AwtProgram1 {
public AwtProgram1()
{
Frame 1 = new Frame();
Button btn=new Button("Hello World");
btn.setBounds(80, 80, 100, 50);
f.add(btn);
f.setSize(300, 250);
f.setTitle("JavaTPoint");
f.setLayout(null);
f.setVisible(true);
}
```

```
public static void main(String[] args) {

AwtProgram1 awt = new AwtProgram1();
}
}
```



Conclusion:

Utilizing AWT (Abstract Window Toolkit) controls for application development in Java involves the creation of graphical user interfaces (GUIs) tailored for desktop applications. AWT equips you with a set of fundamental GUI components like buttons, labels, text fields, and more. Here's a concise overview:

1. AWT Controls: AWT encompasses graphical controls that enable you to design the user interface of your application.
2. Layout Managers: AWT provides layout management tools to help you arrange and position these controls effectively within your GUI.
3. Customization: You have the flexibility to customize the appearance and behavior of AWT controls as per your application's requirements.

4. Platform Neutrality: AWT maintains platform independence, making it compatible across various operating systems, though it may not provide the most up-to-date visual aesthetics.
5. Window and Frame: AWT allows for the creation of top-level containers, such as **Frame**, serving as the primary windows of your application.