



Vidyavardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science

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 windowsbased 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



Vidyavardhini's College of Engineering and Technology

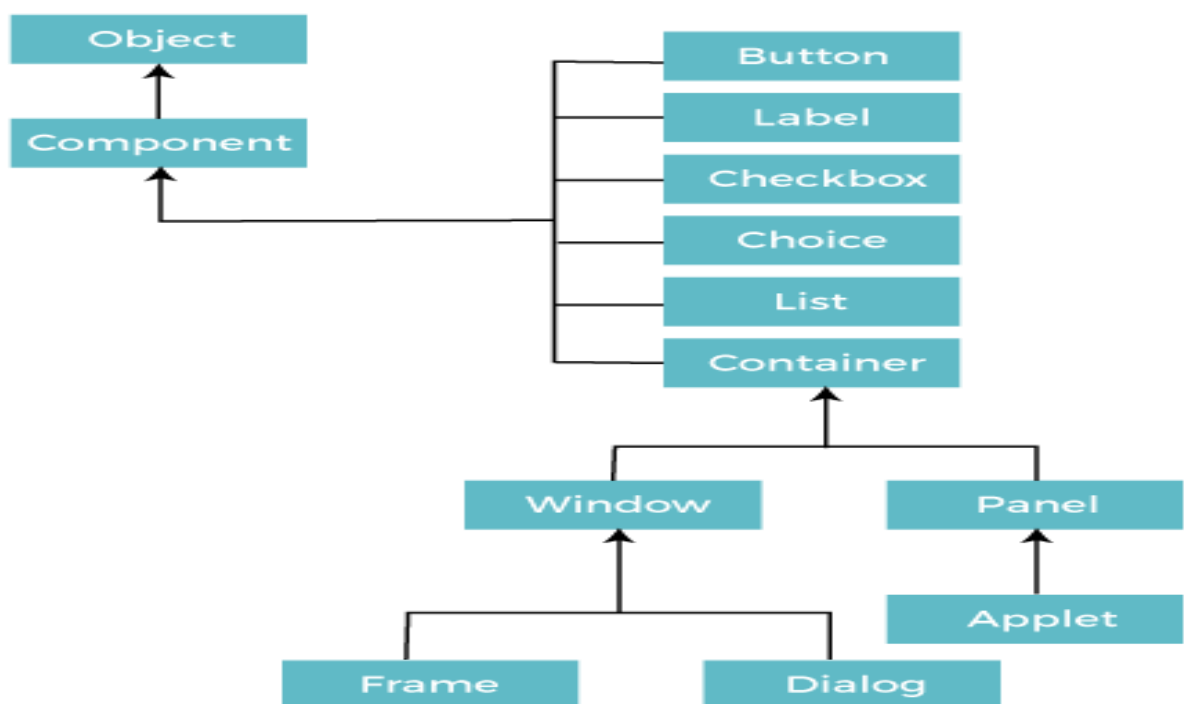
Department of Artificial Intelligence & Data Science

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`

`AwtApp extends Frame {`

`AwtApp()`



Vidyavardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science

```
{  
Label firstName = new Label("First Name"); firstName.setBounds(20,  
50,  
80, 20); Label lastName = new Label("Last Name"); lastName.setBounds(20,  
80, 80, 20); Label dob = new Label("Date of Birth"); dob.setBounds(20, 110,  
80, 20); TextField firstNameTF = new  
TextField(); firstNameTF.setBounds(120, 50, 100, 20); TextField  
lastNameTF = new TextField(); lastNameTF.setBounds(120, 80, 100, 20);  
TextField dobTF = new TextField(); dobTF.setBounds(120,  
110, 100, 20);  
Button sbmt = new Button("Submit"); sbmt.setBounds(20, 160, 100, 30);  
Button reset = new Button("Reset"); reset.setBounds(120,160,100,30);  
add(firstName); add(lastName); add(dob); add(firstNameTF);  
add(lastNameTF); add(dobTF); add(sbmt); add(reset); setSize(300,300);  
setLayout(null); setVisible(true);  
}  
public static void main(String[] args) {  
AwtApp awt = new AwtApp();  
}  
}
```

Conclusion:

Application development using AWT (Abstract Window Toolkit) controls allows for the creation of graphical user interfaces (GUIs). AWT provides a set of controls, such as buttons, labels, text fields, and checkboxes, that can be used to build interactive and visually appealing applications. These controls can be added to containers, such as frames or panels, and customized with various properties and event listeners. AWT controls provide a platformindependent way to create GUIs, making it easier to develop applications that can run on different operating systems. While AWT controls offer basic functionality, they may lack some of the advanced features and visual customization options provided by other GUI frameworks like Swing or JavaFX. Nonetheless, AWT remains a viable option for simple GUI development in Java.