

## APIs for Java Developers

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## Java AWT Tutorial

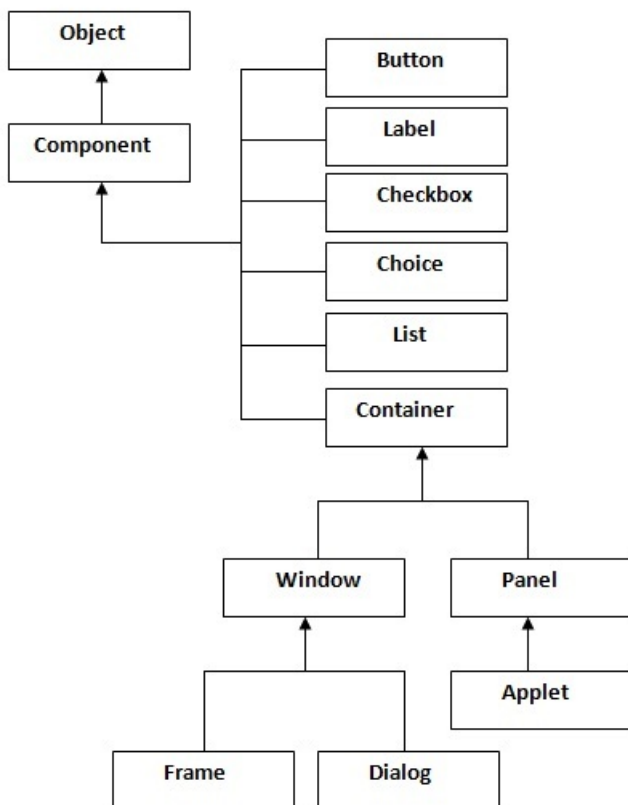
**Java AWT** (Abstract Windowing Toolkit) is an API to develop GUI or window-based application in java.

Java AWT components are platform-dependent i.e. components are displayed according to the view of operating system. AWT is heavyweight i.e. its components uses the resources of system.

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

## Java AWT Hierarchy

The hierarchy of Java AWT classes are given below.



## 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.

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## 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.

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## Panel

The Panel is the container that doesn't contain title bar and menu bars. It can have other components like button, textfield etc.

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## Frame

The Frame is the container that contain title bar and can have menu bars. It can have other components like button, textfield etc.

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## Useful Methods of Component class

Method	Description
public void add(Component c)	inserts a component on this component.
public void setSize(int width,int height)	sets the size (width and height) of the component.
public void setLayout(LayoutManager m)	defines the layout manager for the component.
public void setVisible(boolean status)	changes the visibility of the component, by default false.

## Java AWT Example

To create simple awt example, you need a frame. There are two ways to create a frame in AWT.

- By extending Frame class (inheritance)
  - By creating the object of Frame class (association)
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## AWT Example by Inheritance

Let's see a simple example of AWT where we are inheriting Frame class. Here, we are showing Button component on the Frame.

```

import java.awt.*;

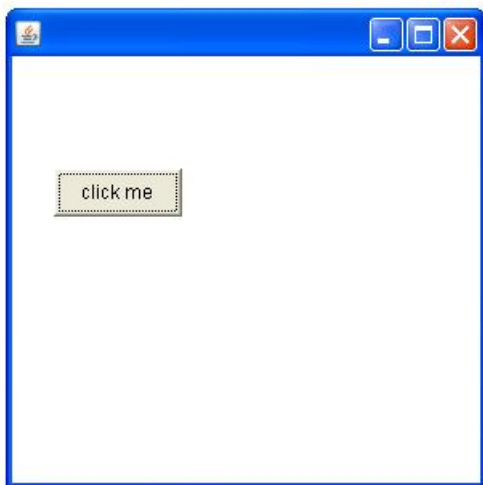
class First extends Frame{
    First(){
        Button b=new Button("click me")
        b.setBounds(30,100,80,30);// set
        add(b);//adding button into frame
        setSize(300,300);//frame size 300
        setLayout(null);//no layout manager
        setVisible(true);//now frame will
    }

    public static void main(String args[])
    {
        First f=new First();
    }
}

```

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The `setBounds(int xaxis, int yaxis, int width, int height)` method is used in the above example that sets the position of the awt button.



## AWT Example by Association

Let's see a simple example of AWT where we are creating instance of Frame class. Here, we are showing Button component on the Frame.

```

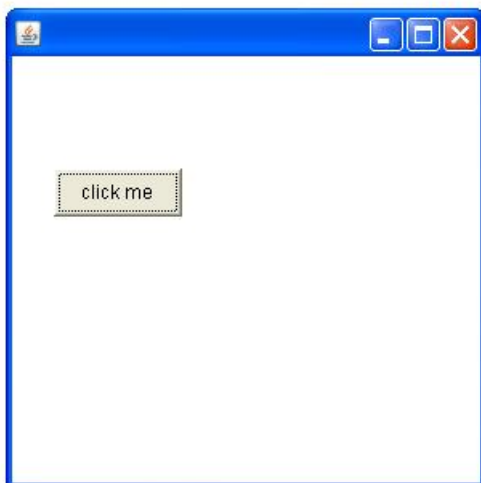
import java.awt.*;

class First2{
    First2(){
        Frame f=new Frame();
        Button b=new Button("click me")
        b.setBounds(30,50,80,30);
        f.add(b);
        f.setSize(300,300);
        f.setLayout(null);
        f.setVisible(true);
    }

    public static void main(String args[])
    {
        First2 f=new First2();
    }
}

```

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