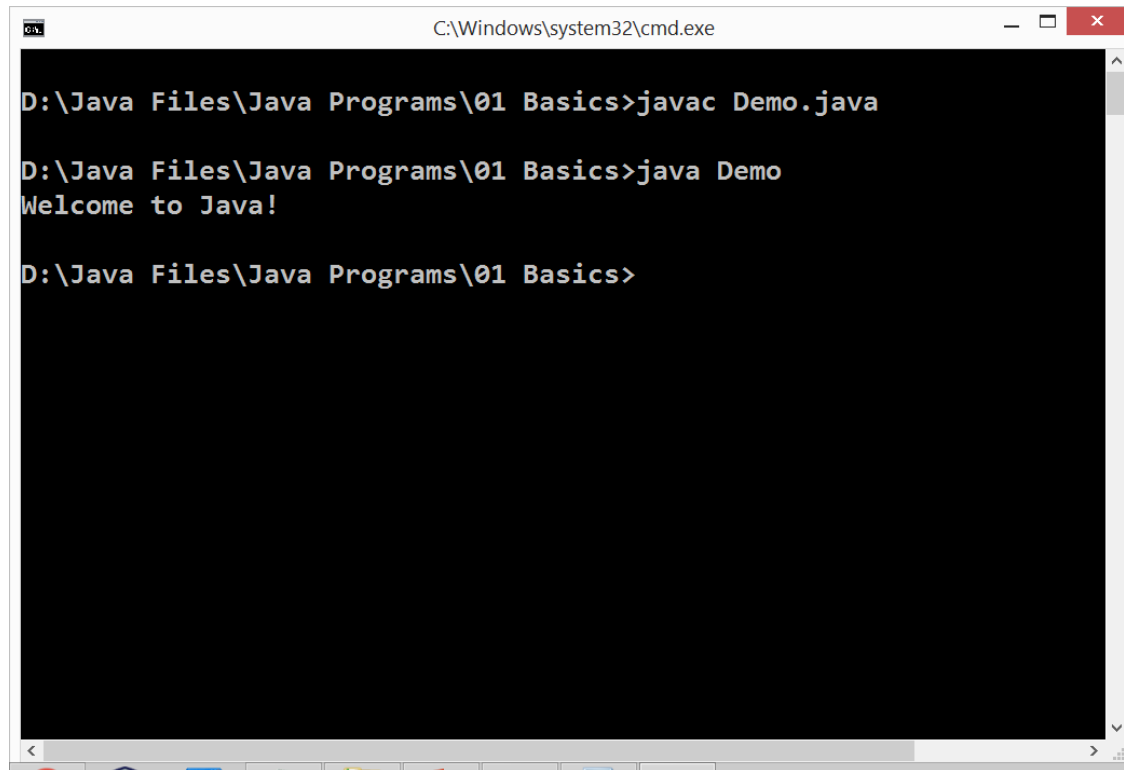


Applications

Developing applications like

- Console A/P (e.g. Shop billing) → C U I
- Windows A/P (e.g. MS-word) → G U I
- Web A/P (e.g. Gmail, Yahoo)

Console Applications



```
C:\Windows\system32\cmd.exe

D:\Java Files\Java Programs\01 Basics>javac Demo.java

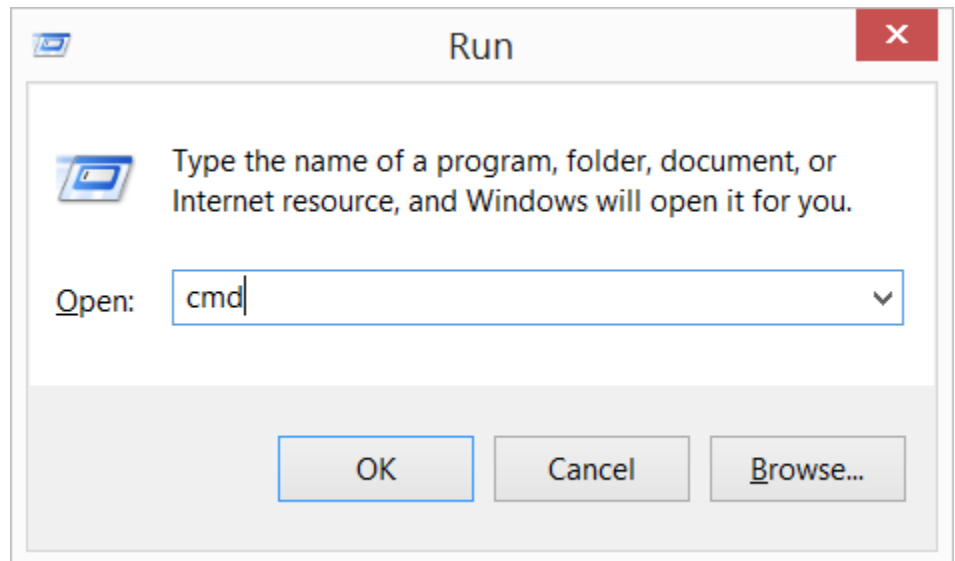
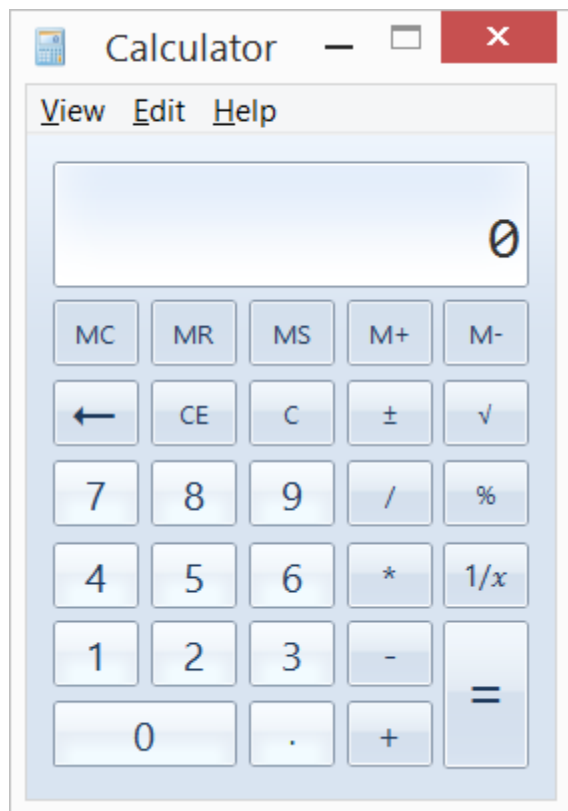
D:\Java Files\Java Programs\01 Basics>java Demo
Welcome to Java!

D:\Java Files\Java Programs\01 Basics>
```

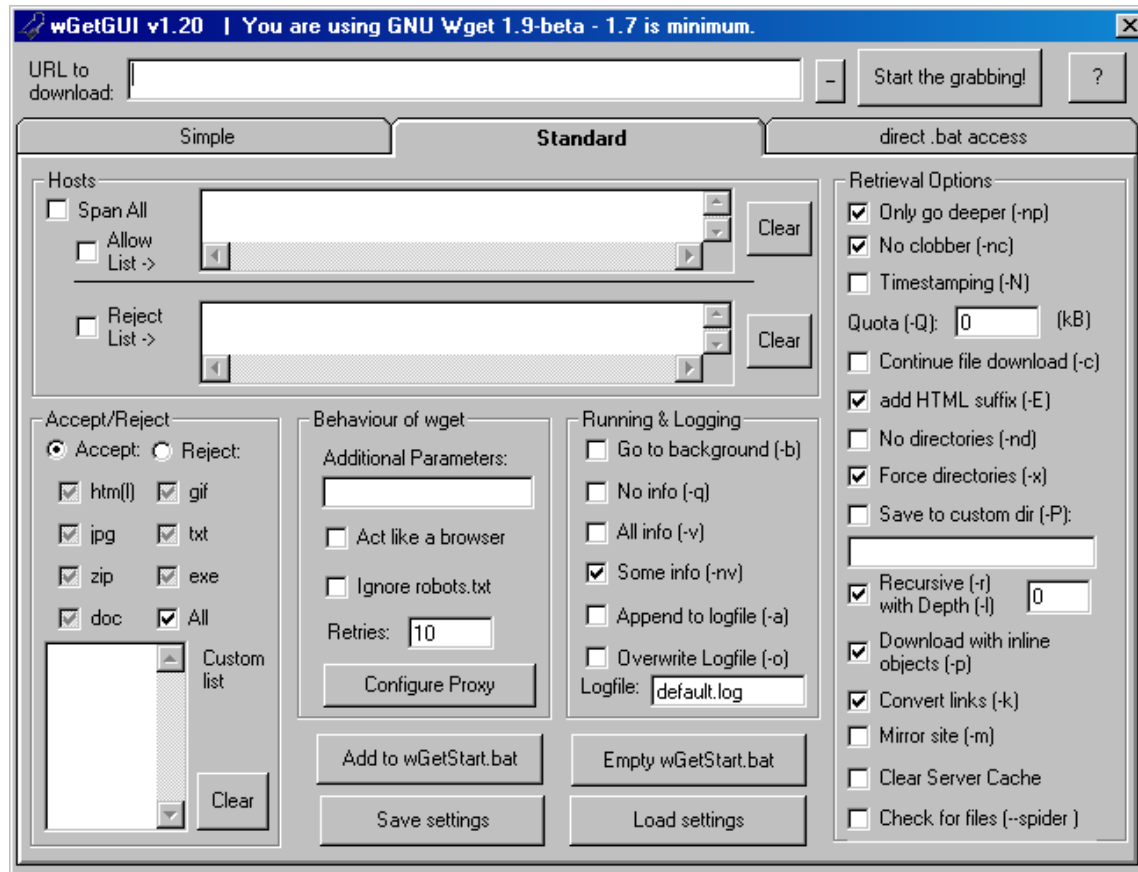
The image shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window has a black background with white text. The text shows the following sequence of commands and output:

- The prompt is `D:\Java Files\Java Programs\01 Basics>`.
- The command `javac Demo.java` is entered.
- The prompt is `D:\Java Files\Java Programs\01 Basics>`.
- The command `java Demo` is entered.
- The output `Welcome to Java!` is displayed.
- The prompt is `D:\Java Files\Java Programs\01 Basics>`.

The window includes standard Windows window controls (minimize, maximize, close) in the top right corner and a taskbar at the bottom.



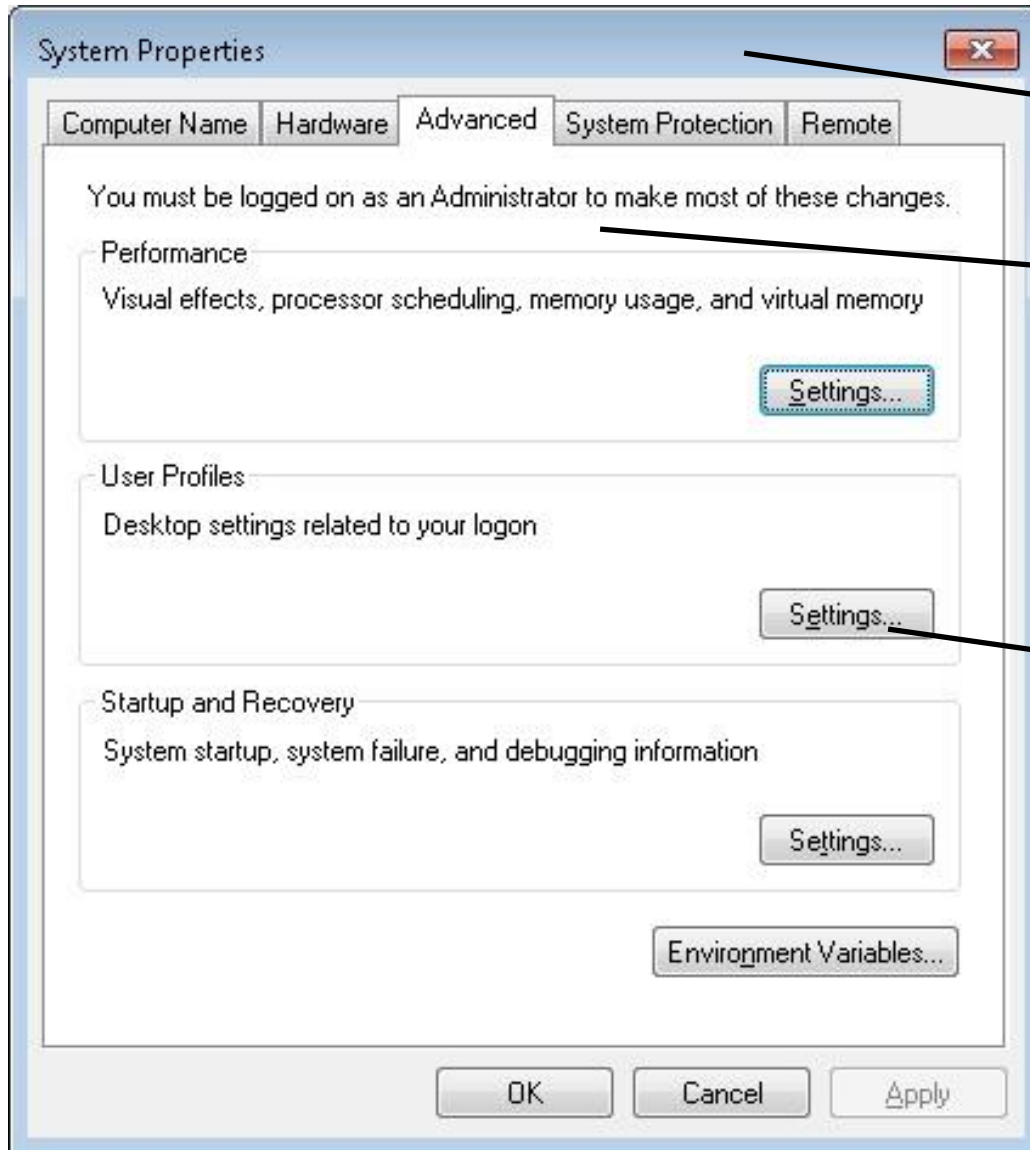
GUI



Windows Applications (GUI)

- AWT
- Event Handling
- Applets
- Swings

Containers



Top level container

Sub level container

Control components

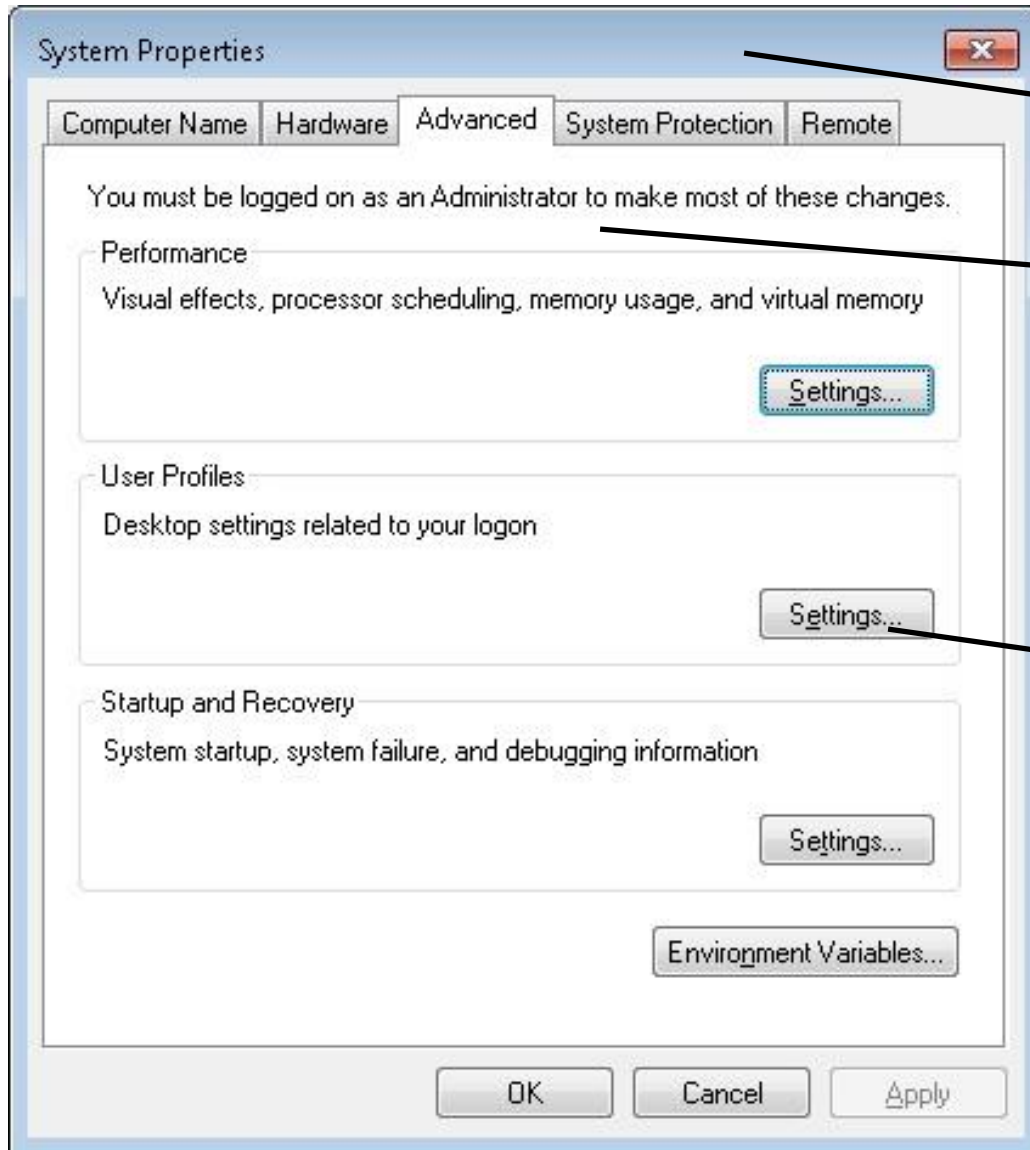
Abstract Window Toolkit (AWT)

- ▣ Its for developing GUI applications.

- ▣ API

 - `java.awt.*;`

Containers



**Top level container
(Frame)**

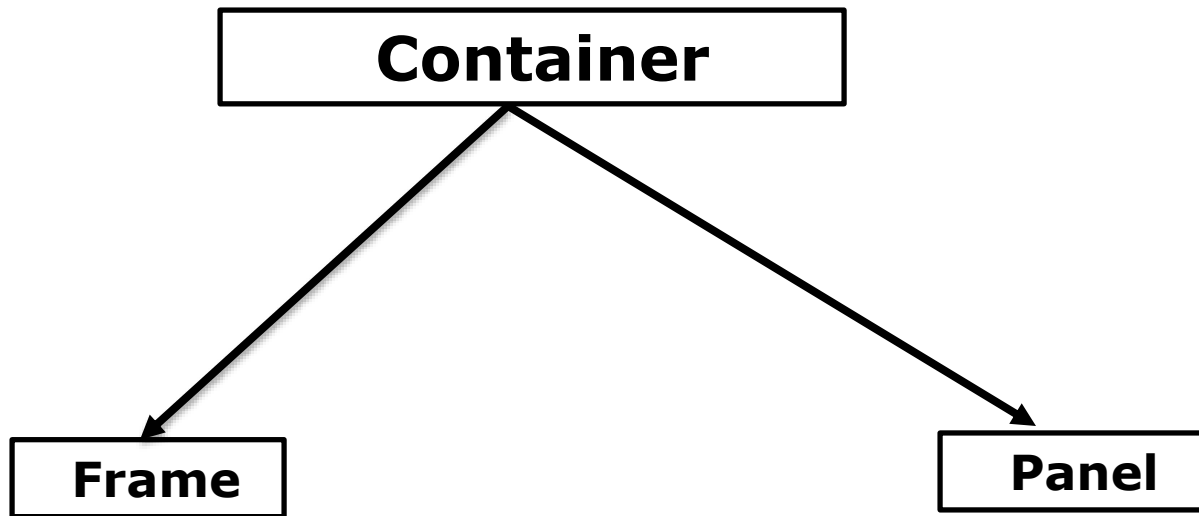
**Sub level container
(Panel)**

**Control components
(Button)**

AWT Control components

- TextField
- TextArea
- Button
- Label
- List
- Chechbox

Class Hierarchy



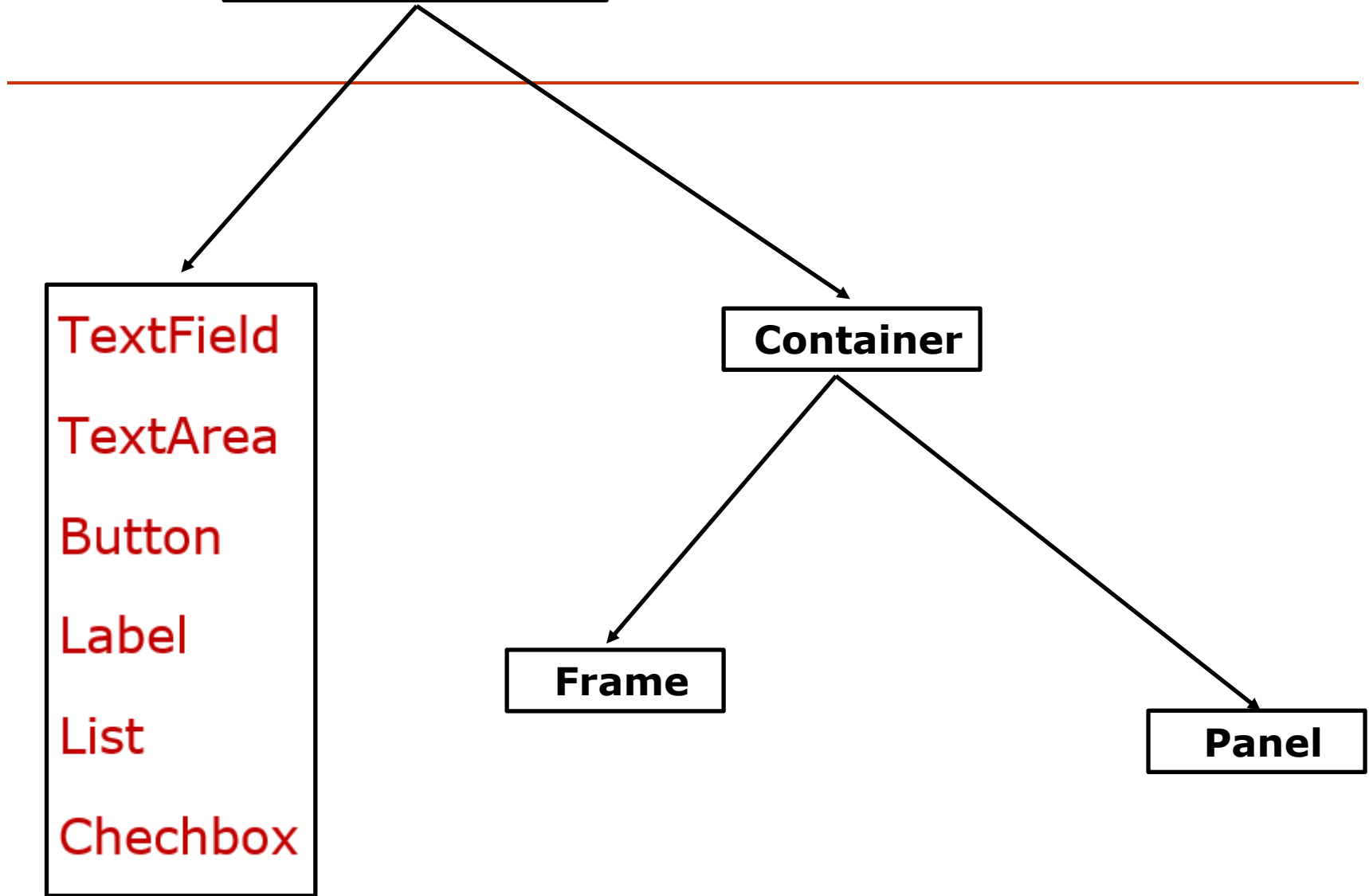
Component

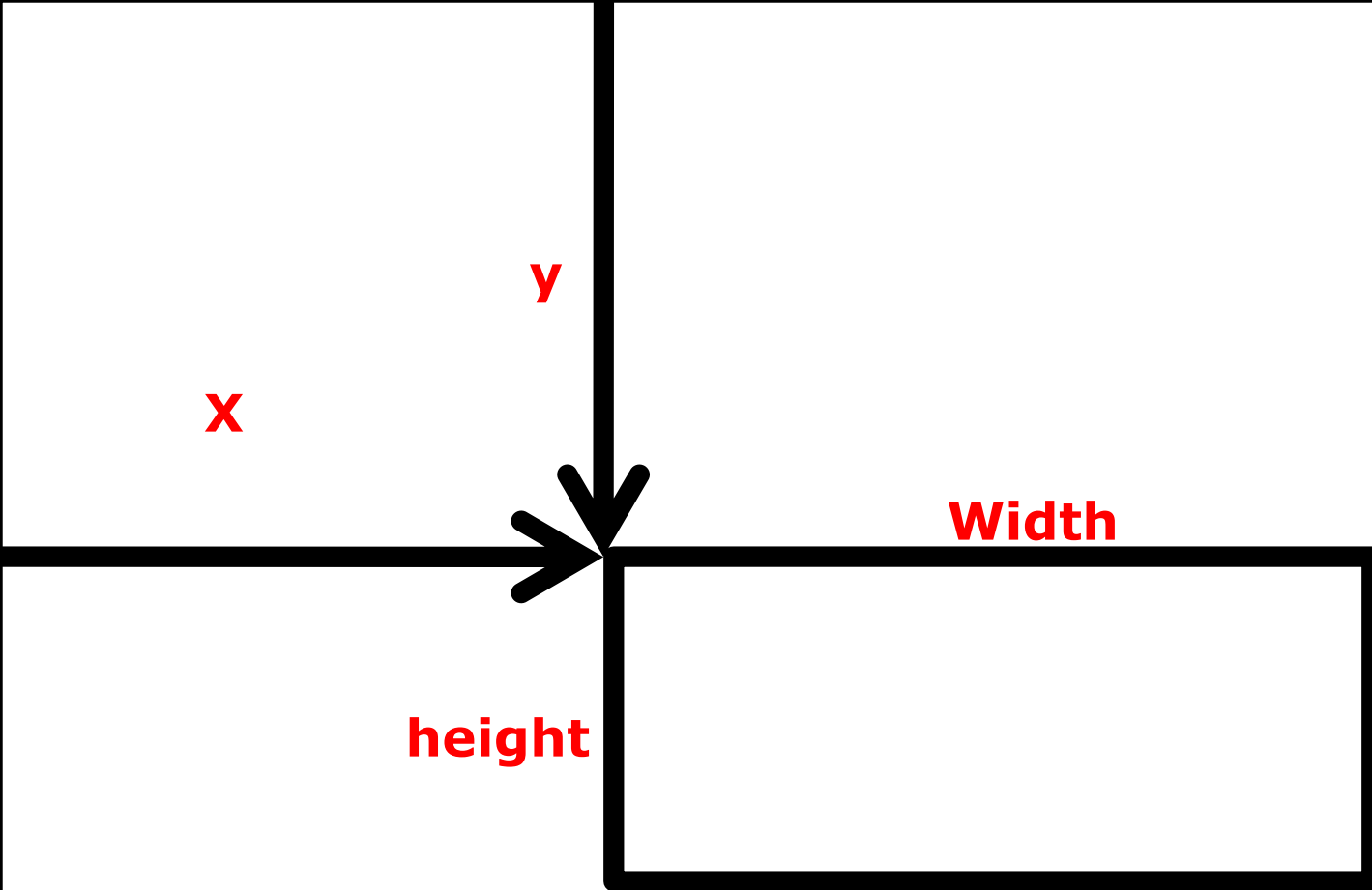
TextField
TextArea
Button
Label
List
Checkbox

Container

Frame

Panel





`setBounds(100, 100, 500, 400)`

```
import java.awt.*;
class Demo1
{
    public static void main(String aa[])
    {
        Frame f=new Frame();
        f.setLayout(new FlowLayout());
        f.setSize(400,300);
        f.setVisible(true);
    }
}
```

```
import java.awt.*;
class Demo1 extends Frame
{
    Demo1()
    {
        setLayout(new FlowLayout());
        setSize(400,300);
        setVisible(true);
    }
    public static void main(String aa[])
    {
        Demo1 ob=new Demo1();
    }
}
```

Graphics

Component

`void` `paint(Graphics)`

`Graphics` `getGraphics();`