

Building Components using Swing and JavaFX

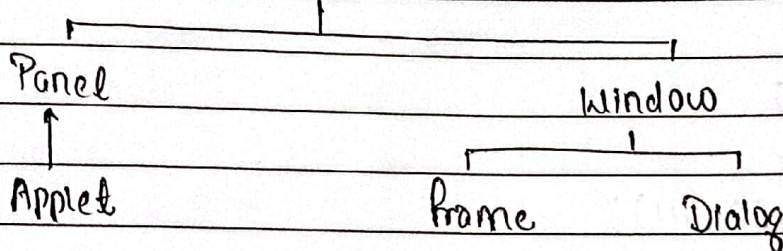
Date _____
Page _____

- AWT
- Swing
- JavaFX

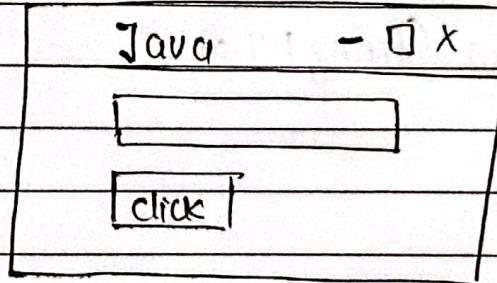
Object

↳ Component

- Button
- Checkbox
- TextField
- Container



Q. Use AWT to create the given GUI:



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

```
class Example {
```

```
Frame f;
```

```
Button b;
```

```
Textfield t;
```


3

Differentiate betⁿ AWT and living:



- | | |
|---|--|
| 8. AWT doesn't support MVC pattern. | 8. Swing supports MVC pattern |
| 9. It is used to create GUI based application | 9. It is used to create desktop as well as web applications. |
| 10. All components are in javax.swing package | 10. All components of swing are in javax.swing package. |

Q. Create a GUI application with text field and button. When the button is clicked, change the text into upper case.

```
import javax.swing.*;
import java.awt.event.*;
```

```
class Example implements ActionListener {
```

```
    JFrame f;
    JTextField t;
    JButton b;
```

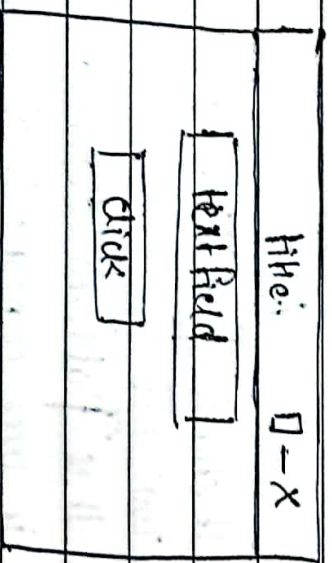
```
    public Example() {
```

```
        f = new JFrame("Hi");
        f.setSize(500, 500);
```

```
        t = new JTextField();
        t.setBounds(100, 150, 300, 100);
```

```
        b = new JButton("Click");
```

```
        b.setBounds(100, 300, 100, 100);
```




```
f.add(t);
f.addCb);
f.setLayout (null);
f.setVisible(true);
f.addActionListener (this);
}
```

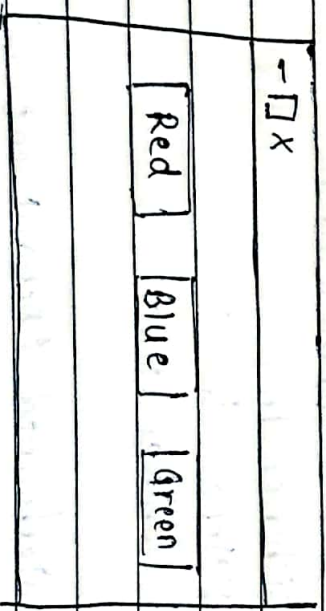
```
public void actionPerformed (ActionEvent e)
{
```

```
String text = t.getText();
j.setText (text.toUpperCase()); OR, k.setText (t.getText().to
UpperCase());
}
```

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

```
new Example();
}
```

Q. Create a GUI application with three button representing your fav. colors. When the button is clicked, change the background of the frame to the respective color.



```
import java.swing.*;
import java.awt.event.*;
import java.awt.*;    (import java.awt.color)
```

```
class Example extends JFrame implements ActionListener
```

```
{
```

```
    JButton y1, blue, black;
```

```
    public Example ()
```

```
{
```

```
        setSize (600, 500);
```

```
        y1 = new JButton ("yellow");
```

```
        blue = new JButton ("blue");
```

```
        black = new JButton ("black");
```

```
        add (yellow); (y1);
```

```
        add (blue);
```

```
        add (black);
```

```
        setLayout (new FlowLayout()); // Keep the buttons
        setDefaultCloseOperation (JFrame.EXIT_ON_CLOSE); // horizontally inside frame.
```

```
        static & final
```

```
        y1.addActionListener (this);
```

```
        blue.addActionListener (this);
```

```
        black.addActionListener (this);
```

```
    public void actionPerformed (ActionEvent e)
```

```
{
```

```
        if (e.getSource() == y1) OR (e.getActionCommand() == y1)
```

```
{
```

```
        // setBackground (Color.YELLOW); → For AWT
```



```
} getContentPane().setBackground (Color.YELLOW);
```

```
else if (e.getSource () = blue)
```

```
{
    getContentPane().setBackground (Color.BLUE);
}
```

```
if (e.getSource () =
```

```
else
```

```
{
```

```
    getContentPane().setBackground (Color.BLACK);
```

```
}
```

```
Public Static Void main (String [] args)
```

```
{
```

```
    new Example ();
```

```
}
```

```
}
```

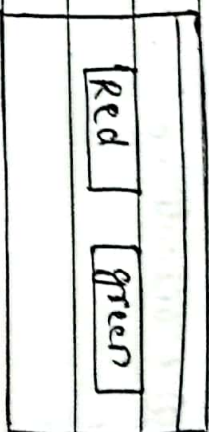
Note:

Return type of

getSource () = object

getActionCommand () = String.

Q. Create a GUI application with Red and Green when the red button is pressed, change the color of red button to green or vice versa. Also indicate the message indicating the change.



```
import javax.swing.*;
import java.awt.event.*;
import java.awt.*;
```

```
class Exam extends JFrame implements ActionListener {
```

```
    JButton red, green;
```

```
    public Exam () {
```

```
        setSize(400,400);
```

```
        red = new JButton("Red");
```

```
        green = new JButton("Green");
```

```
        add (red);
```

```
        add (green);
```

```
        setLayout (new FlowLayout());
```

```
        setViable (true);
```

```
        red.addActionListener (this);
```

```
        green.addActionListener (this);
```


@Override

```
public void actionPerformed (ActionEvent e) {
```

```
    if (e.getActionCommand().equals ("Red")
```

```
    {
```

```
        green.setBackground (color.RED);
```

```
        System.out.println ("Red is pressed");
```

```
    }
```

```
    else
```

```
    {
```

```
        red.setBackground (color.GREEN);
```

```
        System.out.println ("Green is pressed");
```

```
    }
```

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

```
{
```

```
    new Frame();
```

```
}
```

```
}
```

Note: For text:

```
setBackground (color.RED);
```


Create a GUI application with 8 text field and two buttons + and -, perform addition or subtraction and display the result in 8th text field. Make the text field for answer un-editable.

9		5								+
---	--	---	--	--	--	--	--	--	--	---

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
```

class Exam extends JFrame implements ActionListener

```
{
    JTextField first, sec, ans;
    JButton plus, minus;
```

```
public Exam() {
```

```
    first = new JTextField(10);
```

```
    sec = new JTextField(10);
```

```
    ans = new JTextField(10);
```

```
    plus = new JButton("+");
```

```
    minus = new JButton("-");
```

```
    ans.setEditable(false);
```

```
    first.addActionListener(this);
```

```
    sec.addActionListener(this);
```

```
    plus.addActionListener(this);
```

```
    minus.addActionListener(this);
```

```
    add(first);
```

```
    add(sec);
```



```
add (+plus);  
add (+minus);
```

```
pack(c);
```

```
setLayout (new FlowLayout());  
setVisible (true);
```

```
plus.add ActionListener (this);  
minus.add ActionListener (this);
```

```
public void actionPerformed (ActionEvent e)
```

```
{  
    int a = Integer.parseInt (first.getText());  
    int b = Integer.parseInt (see.getText());  
    int res = 0;
```

```
    if (e.getSource() == plus) {  
        res = a + b;
```

```
    }  
    else {
```

```
        res = a - b;  
    }
```

```
    ans.setText (" " + res);
```

```
}
```

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

```
{  
    new Exam();
```

```
}
```