Java SWING

Java provides a rich set of libraries to create Graphical User Interface (GUI), to make it work independently on different platforms. ***Swing*** is definitely the one which is most popular used, because its properties of light-weight, rich-control, easy-customizable.

**JFrame**

In Java Swing, most application will be built inside a basic component ***JFrame***, which creates a window to hold other components.

**import** javax.swing.\*;

**public** **class** Main

{

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

{

JFrame frame = **new** JFrame("Hello Swing");

frame.setSize(400, 200);

frame.setVisible(**true**);

}

}

We can initialize the frame with string “Hello Swing”, which creates a blank frame with title “Hello Swing”.

The size of the frame could be set by ***setSize*** with width and height parameters. Notice that without the ***setVisible*** function with parameter ***true***, you won’t see anything on the screen. In order to see the GUI part, we need this function and set it to be true.

**JLabel**

***JLabel*** is a area to display a short string or an image or both. Normally we can add the JLabel into the ***JFrame***  and show different displays. In the following code a label with text “I’m a JLabel” is created.

**import** javax.swing.\*;

**public** **class** Main

{

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

{

JFrame frame = **new** JFrame("Hello Swing");

frame.setSize(400, 400);

frame.setVisible(**true**);

JLabel label = **new** JLabel("I'm a JLabel", JLabel.***CENTER***);

frame.add(label);

}

}

For the position of the label, it could be specified by JLabel.LEFT, JLabel.CENTER, JLabel.RIGHT, of which the position could set to be left, center and right correspondently.

**JPanel**

***JPanel*** is a popular container to hold different components. It could be set and added by using the code similar to following:

JPanel panel = **new** JPanel();

frame.add(panel);

**JButton**

***JButton*** is an implementation of a “push” labeled button. It can be pressed and configured to have different actions, using the event listener.

Add the button into the frame:

**import** javax.swing.\*;

**public** **class** Main

{

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

{

JFrame frame = **new** JFrame("Hello Swing");

frame.setSize(400, 400);

JButton jb1 = **new** JButton("YES");

jb1.setBounds(150,50,60,30); // x axis, y axis, width, height

frame.add(jb1); // adding button in JFrame

JButton jb2 = **new** JButton("NO");

jb2.setBounds(150,100,60,30); // x axis, y axis, width, height

frame.add(jb2); // adding button in JFrame

frame.setLayout(**null**); // using no layout managers

frame.setVisible(**true**); // making the frame visible

}

}

Add the button and the label into the frame:

**import** javax.swing.\*;

**public** **class** Main

{

**static** JFrame *frame*;

**static** JButton *jb*;

**static** JLabel *l*;

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

{

*frame* = **new** JFrame("Hello Swing");

*frame*.setSize(400, 400);

JButton jb = **new** JButton("OK");

jb.setBounds(150,50,60,30); // x axis, y axis, width, height

*frame*.add(jb); // adding button in JFrame

*l* = **new** JLabel("nothing entered");

*l*.setBounds(150,100,200,30);

*frame*.add(*l*);

*l*.setText("Program is running");

*frame*.setLayout(**null**); // using no layout managers

*frame*.setVisible(**true**); // making the frame visible

}

}

Add the font to the label

**import** javax.swing.\*;

**import** java.awt.\*;

**public** **class** Main

{

**static** JFrame *frame*;

**static** JLabel *l*;

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

{

*frame* = **new** JFrame("Hello Swing");

*frame*.setSize(400, 400);

*l* = **new** JLabel("nothing entered");

*l*.setBounds(100,100,200,30);

*frame*.add(*l*);

Font f = **new** Font("TimesRoman",Font.***BOLD***,25);

*l*.setForeground(Color.***red***);

*l*.setFont(f);

*frame*.setLayout(**null**); // using no layout managers

*frame*.setVisible(**true**); // making the frame visible

}

}

Implementation inside the class:

**import** javax.swing.\*;

**public** **class** Main **extends** JFrame

{

**static** JLabel *l*;

**public** Main()

{

setTitle("Hello Swing");

setSize(400, 400);

*l* = **new** JLabel("Java Programming");

*l*.setBounds(100,100,200,30);

add(*l*);

setLayout(**null**);

}

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

{

Main m = **new** Main();

m.setVisible(**true**);

}

}

Event handling for buttons:

**import** javax.swing.\*;

**import** java.awt.event.\*;

**public** **class** Main **extends** JFrame

{

**static** JLabel *l*;

**static** JButton *jb1*, *jb2*;

**public** Main()

{

setTitle("Hello Swing");

setSize(400, 400);

JButton jb1 = **new** JButton("YES");

jb1.setBounds(100,50,60,30); // x axis, y axis, width, height

add(jb1);

JButton jb2 = **new** JButton("NO");

jb2.setBounds(100,100,60,30); // x axis, y axis, width, height

add(jb2);

*l* = **new** JLabel("Java Programming");

*l*.setBounds(100,150,200,30);

add(*l*);

jb1.addActionListener(**new** ActionListener(){

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

*l*.setText("YES pressed");

}

});

jb2.addActionListener(**new** ActionListener(){

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

*l*.setText("NO pressed");

}

});

setLayout(**null**);

}

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

{

Main m = **new** Main();

m.setVisible(**true**);

}

}

Count the number of presses the button:

**import** javax.swing.\*;

**import** java.awt.event.\*;

**public** **class** Main **extends** JFrame

{

**static** JLabel *l*;

**static** JButton *jb1*;

**static** **int** *cnt* = 0;

**public** Main()

{

setTitle("Hello Swing");

setSize(400, 400);

JButton jb1 = **new** JButton("Press me");

jb1.setBounds(100,50,100,30); // x axis, y axis, width, height

add(jb1);

*l* = **new** JLabel();

*l*.setBounds(100,100,200,30);

add(*l*);

jb1.addActionListener(**new** ActionListener(){

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

*l*.setText(String.*valueOf*(*cnt*));

*cnt*++;

}

});

setLayout(**null**);

}

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

{

Main m = **new** Main();

m.setVisible(**true**);

}

}

Override the abstract method of ActionListener

**import** javax.swing.\*;

**import** java.awt.event.\*;

**public** **class** Main **extends** JFrame **implements** ActionListener

{

**static** JLabel *l*;

**static** JButton *jb1*, *jb2*;

**public** Main()

{

setTitle("Hello Swing");

setSize(400, 400);

JButton jb1 = **new** JButton("YES");

jb1.setBounds(100,50,60,30); // x axis, y axis, width, height

add(jb1);

JButton jb2 = **new** JButton("NO");

jb2.setBounds(100,100,60,30); // x axis, y axis, width, height

add(jb2);

*l* = **new** JLabel("Java Programming");

*l*.setBounds(100,150,200,30);

add(*l*);

jb1.addActionListener(**this**);

jb2.addActionListener(**this**);

setLayout(**null**);

}

**public** **void** actionPerformed(ActionEvent e)

{

String str = e.getActionCommand(); // know which button user clicked

**if**(str.equals("YES")) // YES is the label of the button

*l*.setText("YES pressed");

**else**

*l*.setText("NO pressed");

}

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

{

Main m = **new** Main();

m.setVisible(**true**);

}

}

<https://beginnersbook.com/2015/07/java-swing-tutorial/>