

Lab 8

Java AWT

- AWT ?
 - Since the Internet was not activated in 1995, when Java was born, most client applications were developed using native UI components provided by the operating system.
 - So the AWT included in Java1.0 was a Java library of native UI components provided by the operating system. Therefore, depending on the operating system where Java applications run, the UI has different shapes and limited types.
 - However, it is suitable as an introductory course for Java developers who want to move away from the console and develop GUI application.

- AWT Implementation Order

- Container

- It acts as a window for the program, where components are to be placed on.

- Ex) Frame, Panel, Dialog

- Component

- Elements are placed on the Container and configuring the screen.

- Ex) Button, TextField, CheckBox

- Event

- Logics implemented in components

- Container Implementation

- Frame example

```
import java.awt.Frame;

public class FrameEx1 {
    public static void main(String[] args) {
        Frame f = new Frame();

        f.setTitle("Frame Test");//Title

        f.setSize(300,300); //Size
        f.setVisible(true);//Create
    }
}
```



- Container Implementation

- Frame example 2

```
import java.awt.*; //awt import
public class FrameEx2 extends
Frame{//Inheritance method
    public FrameEx2()
    {
        super("frame test");
        setSize(300,300);
        setVisible(true);
    }
    public static void main(String[]
args) {
        FrameEx2 fr = new FrameEx2();
    }
}
```

- Component Implementation

- Button example



```
import java.awt.Button;
import java.awt.Frame;
import java.awt.Panel;

public class ButtonEx {
    public static void main(String[] args) {
        Frame f = new Frame("button test");//Prame create
        Panel p = new Panel();//Panel create

        Button b1 = new Button();//Button create
        Button b2 = new Button("출력");
        Button b3 = new Button("정렬");
        Button b4 = new Button("순위");

        b1.setLabel("입력");// Set name button1
        p.add(b1);// Attach name to button
        p.add(b2);
        p.add(b3);
        p.add(b4);
        f.add(p);// Attach panel at frame

        f.setLocation(300,300);//Frame locattion
        f.setSize(300,100);//Frame size
        f.setVisible(true);//Frame create
    }
}
```

- Component Implementation

- Button example (Radio type)



```
import java.awt.Checkbox;
import java.awt.CheckboxGroup;
import java.awt.Frame;
import java.awt.Panel;

public class RadioCheckboxEx {
    public static void main(String[] args) {
        Frame f = new Frame("라디오형 체크박스 테스트");
        // Frame create
        Panel p = new Panel();// Panel create

        CheckboxGroup group = new CheckboxGroup();
        //Checkbox grouping
        Checkbox radio1 = new
Checkbox("고졸",group,false); // checkbox (radio
shape)
        Checkbox radio2 = new
Checkbox("전문대졸",group,false);
        Checkbox radio3 = new
Checkbox("대졸",group,true);

        p.add(radio1); // Attach radio button at panel
        p.add(radio2);
        p.add(radio3);

        f.add(p); //Attach panel at frame
        f.setSize(300,100);// Set size
        f.setVisible(true);// Create frame
    }
}
```

- Component Implementation

- Lable example

```
import java.awt.Frame;
import java.awt.Panel;
import java.awt.Label;

public class LabelEx {
    public static void main(String[] args) {
        Frame f = new Frame("label test");//Frame create
        Panel p = new Panel();//Panel create

        Label l1 = new ();//Label create
        Label l2 = new Label("출력");
        Label l3 = new Label("정렬");
        Label l4 = new Label("순위");

        l1.setLabel("입력");// Set name Label1
        p.add(l1);// Attach name to Label
        p.add(l2);
        p.add(l3);
        p.add(l4);
        f.add(p);// Attach panel at frame

        f.setLocation(300,300);//Frame locattion
        f.setSize(300,100);//Frame size
        f.setVisible(true);//Frame create

    }
}
```


- Component Implementation

- Text Field example



```
import java.awt.Frame;
import java.awt.Panel;
import java.awt.TextField;

public class Text_PasswordEx {
    public static void main(String[] args) {
        Frame f = new Frame("텍스트필드 테스트");
        //Create frame
        Panel p = new Panel(); //Panel create

        TextField tf1 = new TextField("아이디 입력",12);
        //Create TextField
        TextField tf2 = new TextField("암호 입력",10);

        tf1.selectAll();
        tf2.selectAll();

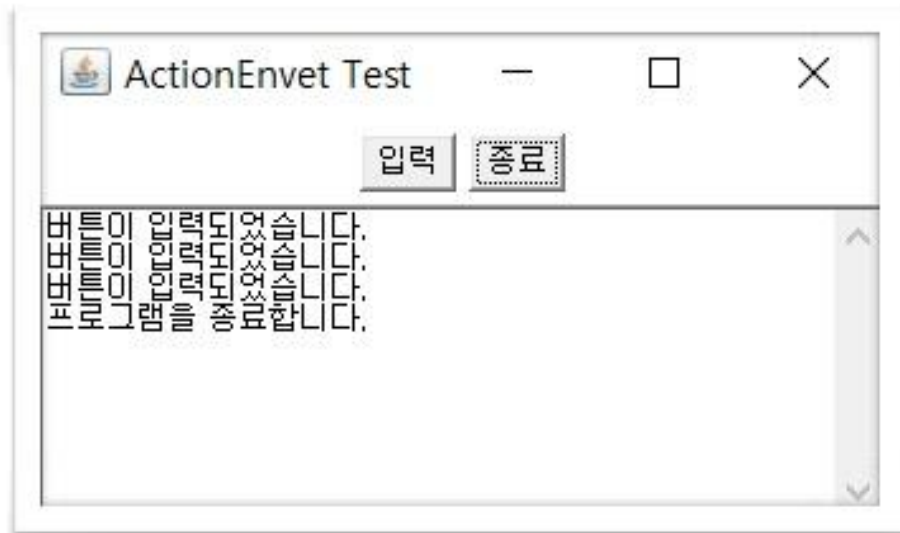
        tf2.setEchoChar('*'); //Character sees *

        p.add(tf1);
        p.add(tf2);
        f.add(p);

        f.setSize(300,100);
        f.setVisible(true);
    }
}
```

- Component Implementation

- Action Event example1



- Component Implementation
 - Action Event example2

