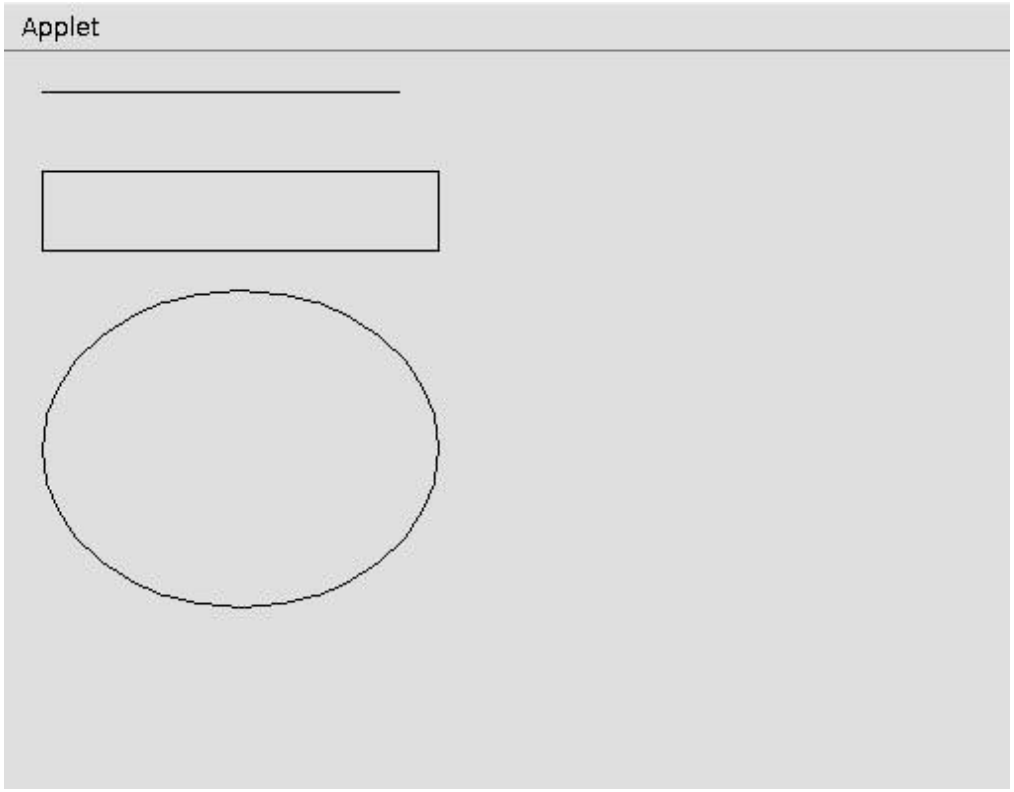
LAB CYCLE - 5

24.Program to draw Circle, Rectangle and Line in Applet

PROGRAM

```
import java.applet.Applet;
import java.awt.Graphics;

public class DrawingApplet extends Applet {
  public void paint(Graphics g) {
        g.drawLine(20, 20, 200, 20);
        g.drawRect(20, 60, 200, 40);
        g.drawOval(20, 120, 200, 160);
    }
}
```

Output:



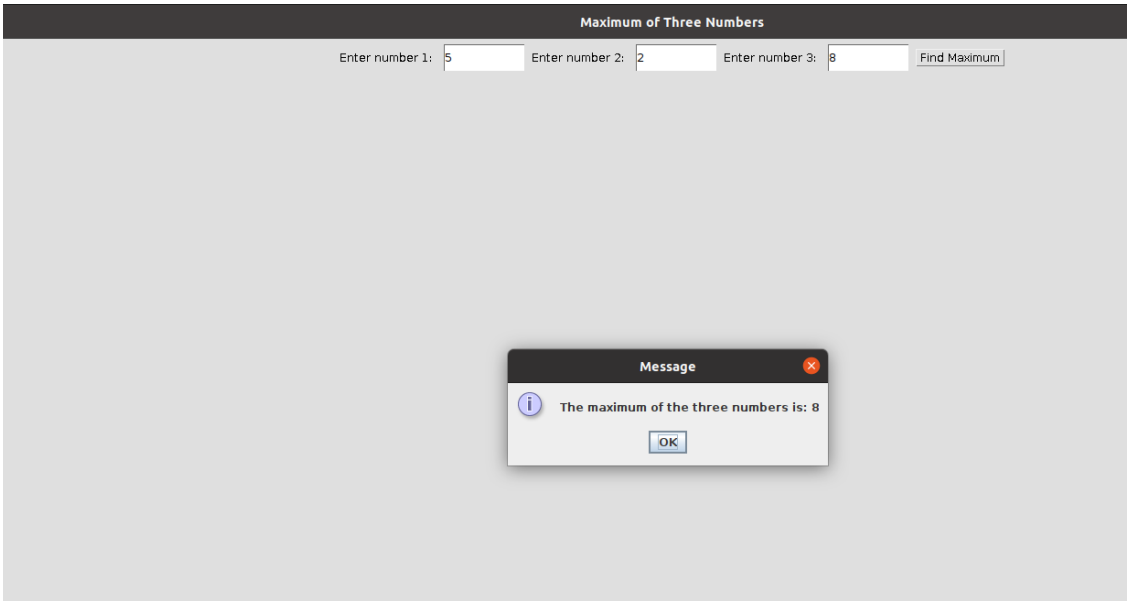
25.Program to find maximum of three numbers using AWT.

PROGRAM

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

class Max3 extends Frame implements ActionListener {
    private TextField num1Field, num2Field, num3Field;
    private Button findMaxButton;

   public Max3() {
      setTitle("Maximum of Three Numbers");
      setSize(300, 200);
      setLayout(new FlowLayout());

      Label num1Label = new Label("Enter number 1:");
      Label num2Label = new Label("Enter number 2:");
      Label num3Label = new Label("Enter number 3:");

      num1Field = new TextField(10);
      num2Field = new TextField(10);
      num3Field = new TextField(10);

      findMaxButton = new Button("Find Maximum");
      findMaxButton.addActionListener(this);

      add(num1Label);
      add(num1Field);
      add(num2Label);
      add(num2Field);
      add(num3Label);
      add(num3Field);
      add(findMaxButton);

      addWindowListener(new WindowAdapter() {
          public void windowClosing(WindowEvent we) {
          System.exit(0);
         }
      });
```

```
    }

    public void actionPerformed(ActionEvent ae) {
        if (ae.getSource() == findMaxButton) {
         try {
                int num1 = Integer.parseInt(num1Field.getText());
                int num2 = Integer.parseInt(num2Field.getText());
                int num3 = Integer.parseInt(num3Field.getText());

                int max = Math.max(Math.max(num1, num2), num3);

                String message = "The maximum of the three numbers is: " + max;
                JOptionPane.showMessageDialog(this, message);
            } catch (NumberFormatException e) {
                JOptionPane.showMessageDialog(this, "Please enter valid numbers.");
            }
        }
    }
}

public class Main {
    public static void main(String[] args) {
        Max3 maxFinder = new Max3();
        maxFinder.setVisible(true);
    }
}
```

Output:


Maximum of Three Numbers
Enter number 1:
5
Enter number 2:
2
Enter number 3:
8
Find Maximum
Message
The maximum of the three numbers is: 8
OK

26.Find the percentage of marks obtained by a student in 5 subjects.
Display a happy face if he secures above 50% or a sad face if otherwise.

PROGRAM:

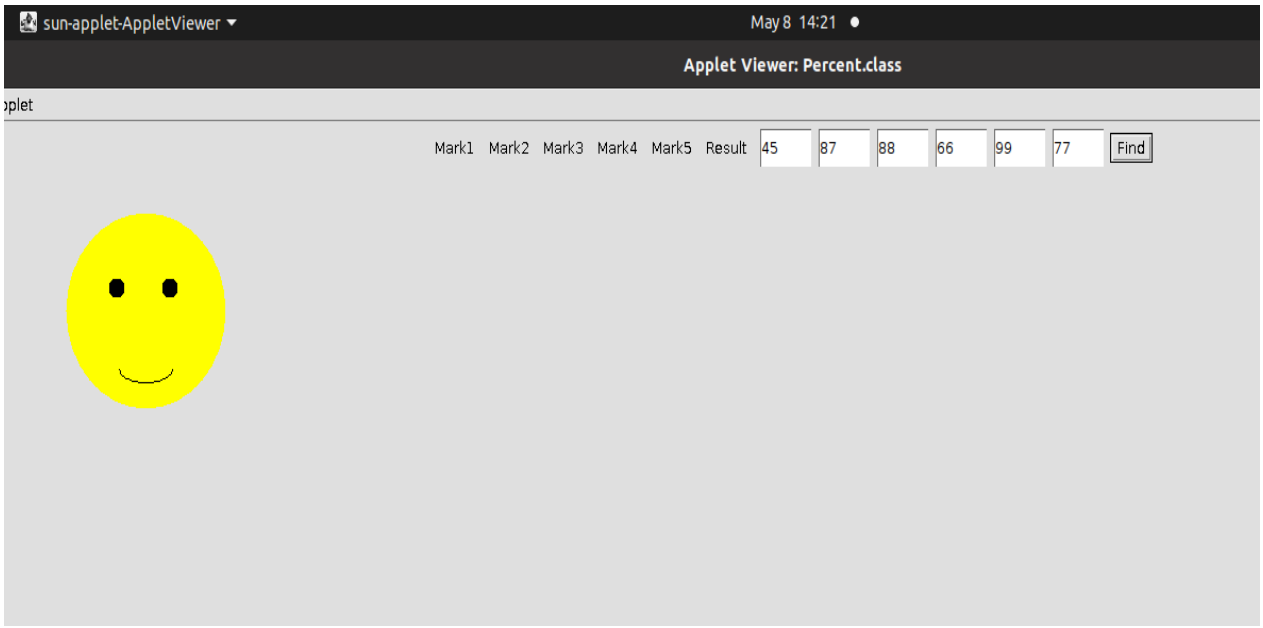
```
import java.applet.*;
import java.awt.*;
import java.awt.event.*;

public class Percent extends Applet implements ActionListener {
    TextField t1,t2,t3,t4,t5,t6;
    Button b;
    Label l1,l2,l3,l4,l5,l6;
    public void init(){
        l1=new Label("Mark1");
//l1.setBounds(100,100,200,20);
         t1= new TextField(5);
//t1.setBounds(100,50,200,20);

        l2=new Label("Mark2");
//l2.setBounds(100,130,100,30);
         t2= new TextField(5);
//t2.setBounds(100,80,100,20);

        l3=new Label("Mark3");
//l3.setBounds(100,160,100,20);
         t3= new TextField(5);
//t3.setBounds(100,120,100,20);

        l4=new Label("Mark4");
//l4.setBounds(100,200,100,20);

        t4=new TextField(5);

        l5=new Label("Mark5");
        t5=new TextField(5);

       l6=new Label("Result");
       t6=new TextField(5);
```

```
        t1.setBounds(210,40,100,20);
        t2.setBounds(210,80,100,20);
        t3.setBounds(210,120,100,20);
        t4.setBounds(210,140,100,20);
        t5.setBounds(210,140,100,20);
        t6.setBounds(210,140,100,20);
        l1.setBounds(100,40,100,20);
        l2.setBounds(100,80,100,20);
        l3.setBounds(100,120,100,20);
        l4.setBounds(100,140,100,20);
        l5.setBounds(100,140,100,20);
        l6.setBounds(100,140,100,20);

         b=new Button("Find");
         b.setBounds(230,150,60,50);

//t4.setBounds(100,200,100,20);



 add(l1);
 add(l2);
 add(l3);
 add(l4);
 add(l5);
 add(l6);
 add(t1);
 add(t2);
 add(t3);
 add(t4);
 add(t5);
 add(t6);
 add(b);
 b.addActionListener(this);
}

public void actionPerformed(ActionEvent e){
    int x=0;
    int  y=0;
    int  z=0;
    int  v=0;
    int w=0;
```

```
    int total=0;
    x=  Integer.parseInt(t1.getText());
    y=  Integer.parseInt(t2.getText());
    z=  Integer.parseInt(t3.getText());
    v=  Integer.parseInt(t4.getText());
    w=  Integer.parseInt(t5.getText());
    if(e.getSource()==b){

          total=(x+y+z+v+w)/5;
          t6.setText(String.valueOf(total));
       }



   }
   @Override     public void
    paint(Graphics g){
       int  x=0;
       int  y=0;
       int  z=0;
       int  v=0;
       int w=0;
       int total=0;


       x=  Integer.parseInt(t1.getText());
       y=  Integer.parseInt(t2.getText());
       z=  Integer.parseInt(t3.getText());
       v=  Integer.parseInt(t4.getText());
       w= Integer.parseInt(t5.getText());

      total=(x+y+z+v+w)/5;

      if(total > 50){
          g.setColor(Color.YELLOW);
          g.fillOval(80,70, 150, 150);

          g.setColor(Color.BLACK);
          g.fillOval(120,120,15,15);
          g.fillOval(170,120,15,15);

          g.drawArc(130,180,50,20,180,180);
      }
else
      {
          g.setColor(Color.YELLOW);
          g.fillOval(80,70, 150, 150);
```

```
        g.setColor(Color.BLACK);
        g.fillOval(120,120,15,15);
        g.fillOval(170,120,15,15);
        g.drawArc(130,180,50,20,180,-180);
    }
}}
```

Output:



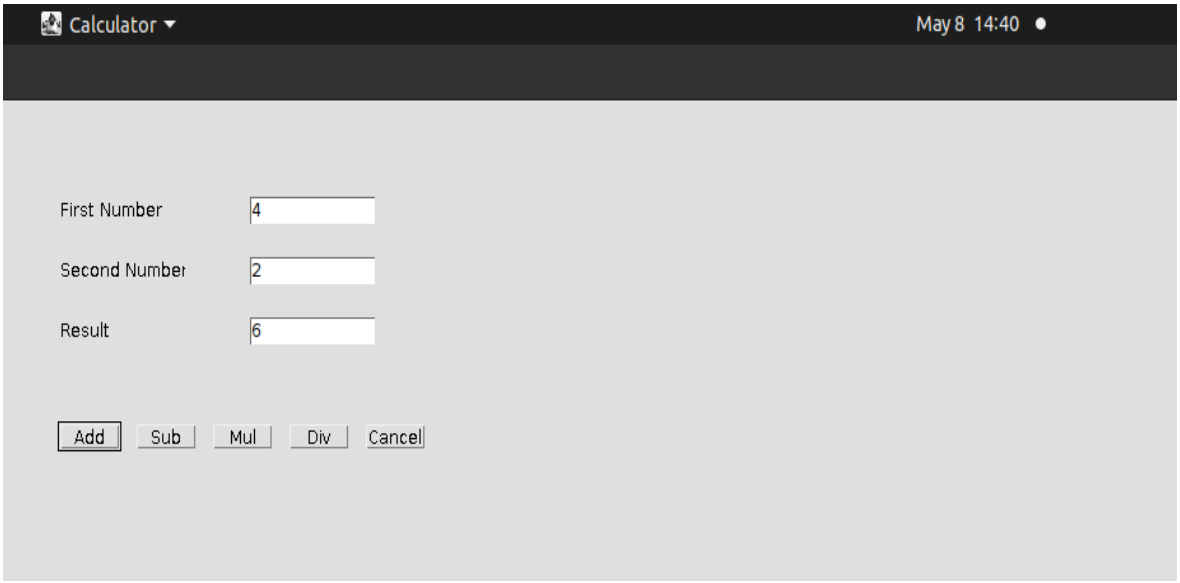
27.Implement a simple calculator using AWT components.

PROGRAM

```
import java.awt.*; import
java.awt.event.*;
public class Calculator implements ActionListener
{
   Frame f=new Frame();
   Label l1=new Label("First Number");
   Label l2=new Label("Second Number");
   Label l3=new Label("Result");
   TextField t1=new TextField();
   TextField t2=new TextField();
   TextField t3=new TextField();
   Button b1=new Button("Add");
   Button b2=new Button("Sub");
   Button b3=new Button("Mul");
   Button b4=new Button("Div");
   Button b5=new Button("Cancel");

  Calculator()
  {
    l1.setBounds(50,100,100,20);
   l2.setBounds(50,140,100,20);
   l3.setBounds(50,180,100,20);
   t1.setBounds(200,100,100,20);
   t2.setBounds(200,140,100,20);
   t3.setBounds(200,180,100,20);
   b1.setBounds(50,250,50,20);
   b2.setBounds(110,250,50,20);
   b3.setBounds(170,250,50,20);
   b4.setBounds(230,250,50,20);
   b5.setBounds(290,250,50,20); f.add(l1);
   f.add(l2);
   f.add(l3);
   f.add(t1);
   f.add(t2);
   f.add(t3);
   f.add(b1);
   f.add(b2);
```

```
   f.add(b3);
   f.add(b4);
   f.add(b5);
  b1.addActionListener(this);
  b2.addActionListener(this);
  b3.addActionListener(this);
  b4.addActionListener(this);
  b5.addActionListener(this);
  f.setLayout(null);
  f.setVisible(true);
  f.setSize(400,350);
}
public void actionPerformed(ActionEvent e)
{
int n1=Integer.parseInt(t1.getText());
int n2=Integer.parseInt(t2.getText());
if(e.getSource()==b1)
{
t3.setText(String.valueOf(n1+n2));
}
if(e.getSource()==b2)
{
t3.setText(String.valueOf(n1-n2));
}
if(e.getSource()==b3)
{
t3.setText(String.valueOf(n1*n2));
}
if(e.getSource()==b4)
{
t3.setText(String.valueOf(n1/n2));
}
if(e.getSource()==b5)
{
System.exit(0);
}
}
public static void main(String...s)
{
new Calculator();
}
}
```

OUTPUT


Calculator
May 8 14:40
First Number
4
Second Number
2
Result
6
Add
Sub
Mul
Div
Cancel

28.Develop a program to handle all mouse events and window events

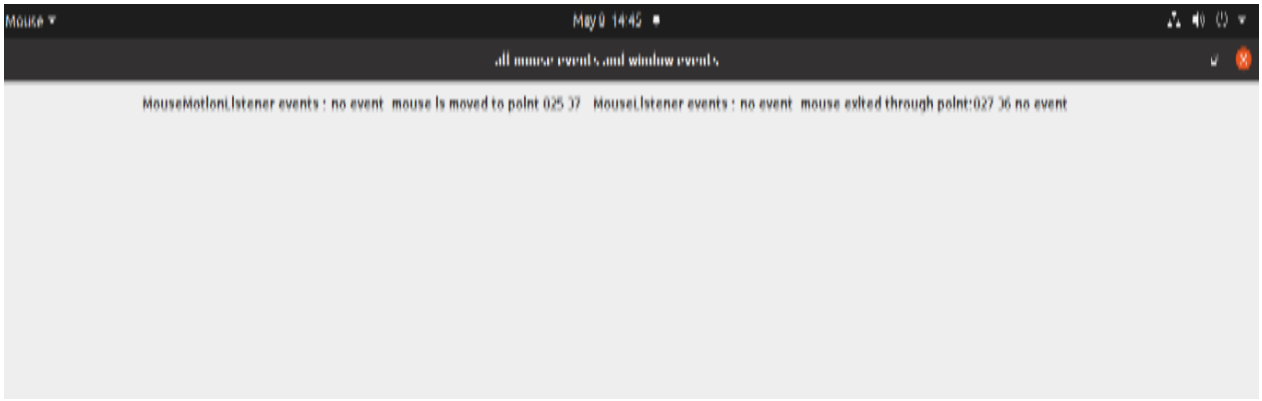
PROGRAM:

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

class Mouse extends Frame implements MouseMotionListener,
MouseListener {

    static JLabel label1, label2, label3, label4, label5;

    Mouse() {
    }

    public static void main(String[] args) {

        JFrame f = new JFrame("all mouse events and window events");

        f.setSize(900, 300);

        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        JPanel p = new JPanel();
        JPanel p1 = new JPanel();

        f.setLayout(new FlowLayout());

        JLabel l1, l2;

        l1 = new JLabel("MouseMotionListener events  :");

        l2 = new JLabel("MouseListener events  :");

        label1 = new JLabel("no event ");
        label2 = new JLabel("no event ");
        label3 = new JLabel("no event ");
        label4 = new JLabel("no event ");
        label5 = new JLabel("no event  ");

        Mouse m = new Mouse();
```

```
    f.addMouseMotionListener(m);
    f.addMouseListener(m);

    p.add(l1);
    p.add(label1);
    p.add(label2);
    p1.add(l2);
    p1.add(label3);
    p1.add(label4);
    p1.add(label5);

    f.add(p);
    f.add(p1);

    // Corrected statement to set the frame visible
    f.setVisible(true);
}

public void mouseDragged(MouseEvent e) {

   label1.setText("mouse is dragged through point " + e.getX() + " " + e.getY());
}

public void mouseMoved(MouseEvent e) {
    label2.setText("mouse is moved to point " + e.getX() + " " + e.getY());
}

public void mousePressed(MouseEvent e) {
    label3.setText("mouse pressed at point:" + e.getX() + " " + e.getY());
}

public void mouseReleased(MouseEvent e) {
    label3.setText("mouse released at point:" + e.getX() + " " + e.getY());     }

public void mouseExited(MouseEvent e) {
    label4.setText("mouse exited through point:" + e.getX() + " " + e.getY());
}

public void mouseEntered(MouseEvent e) {
    label4.setText("mouse entered at point:" + e.getX() + " " + e.getY());
}
```

```
    public void mouseClicked(MouseEvent e) {

      label5.setText("mouse clicked at point:" + e.getX() + " " + e.getY() + " mouse clicked :" +
      e.getClickCount());
    }
}
```

Output:



29.Develop a program to handle Key events.

PROGRAM:

```
import java.awt.FlowLayout;
import java.awt.Frame;
import java.awt.Label;
import java.awt.TextField;
import java.awt.event.KeyEvent;
import java.awt.event.KeyListener;

public class Key implements KeyListener {

    Label lb1, lbl2;
    TextField tf1;
    Frame fr;

    public Key() {
        fr = new Frame("KeyEventListener Example");

        lb1 = new Label(" Key Events will be displayed based on the actions", Label.CENTER);
        lbl2 = new Label();

        tf1 = new TextField(20);
        fr.setLayout(new FlowLayout());

        fr.add(lb1);        fr.add(tf1);
        fr.add(lbl2);

        tf1.addKeyListener(this);

        fr.setSize(460, 250);
        fr.setVisible(true);
    }

    public void keyPressed(KeyEvent ev) {
        lbl2.setText("Key pressed");
    }

    public void keyReleased(KeyEvent ev) {
        lbl2.setText("Released");
    }
```

```
    public void keyTyped(KeyEvent ev) {
        lbl2.setText("Key is typed");
    }

    public static void main(String[] args) {
         new Key();
    }
}
```

Output: