# ASSIGNMENT

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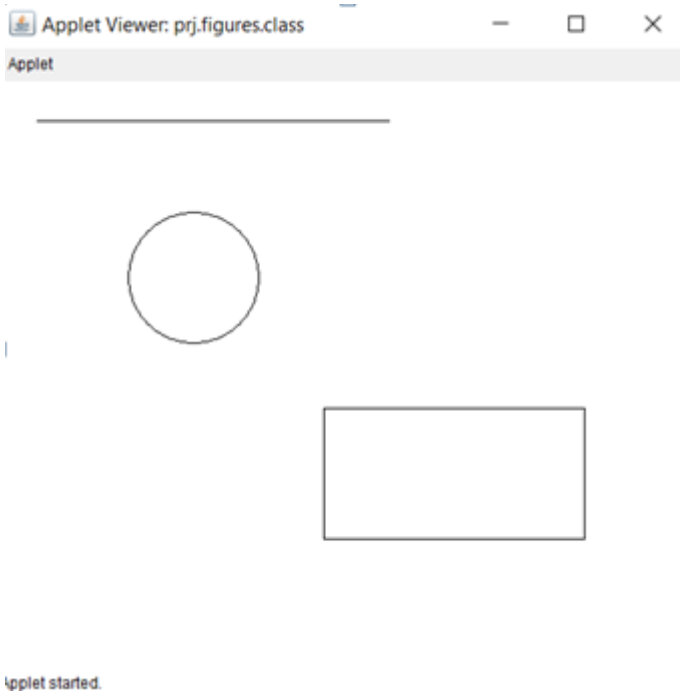
S2RMCA Batch A
Roll No:29

1. Program to draw Circle, Rectangle, Line in Applet.

**PROGRAM**

```
package prj;
import java.applet.*;
import java.awt.Graphics;
public class figures extends Applet {
	public void paint(Graphics g)
	{
		g.drawLine(30,30,300,30);
		g.drawOval(100,100,100,100);
		g.drawRect(250, 250, 200, 100);
	}

}
```

**OUTPUT**



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

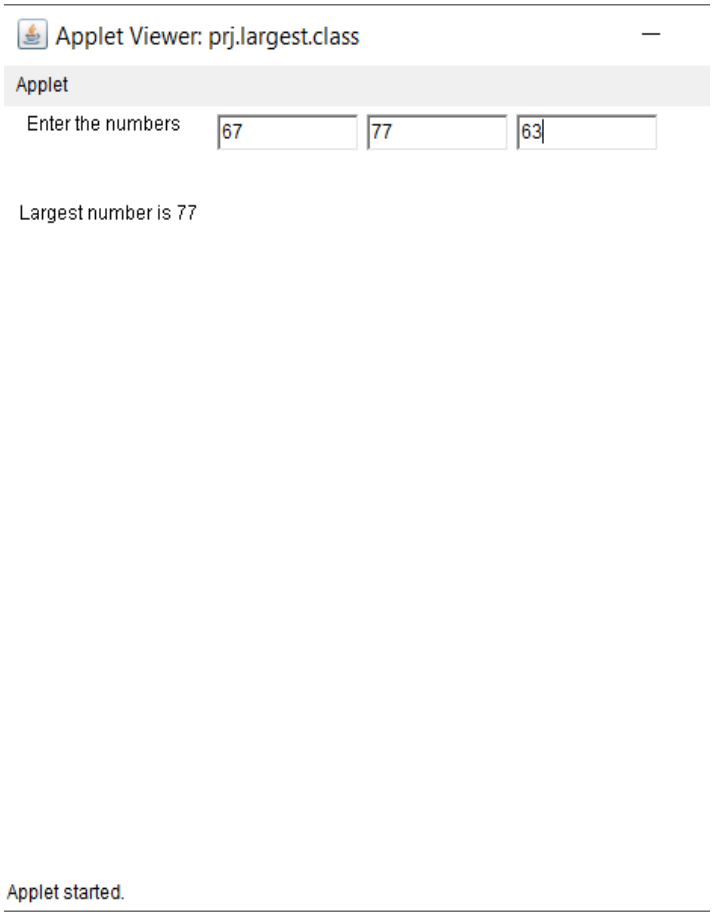
**PROGRAM**

```
package prj;
import java.awt.*;
import
java.awt.Event;import
java.applet.*;

public class largest extends Applet
{
   TextField Txt1,Txt2,Txt3;

   public void init(){
      Txt1 = new TextField(10);
      Txt2 = new TextField(10);
      Txt3 = new TextField(10);
      add(Txt1);
      add(Txt2);
      add(Txt3);
   }

   public void paint(Graphics g){
      int a, b, c,result;
      String str;

      g.drawString("Enter the numbers ",15,15);

      str=Txt1.getText();
      a=Integer.parseInt(str);
      str=Txt2.getText();
      b=Integer.parseInt(str)
      ;str=Txt3.getText();
      c=Integer.parseInt(str)
      ;if (a>=b && a>=c)
      {
            result=a;
      }
      else if(b>=a && b>=c)
      {
            result=b;
      }
       els
       e
       {     result=c;

      }
```

```
g.drawString("Largest number is "+result,10,70);
```

```
    }

    public boolean action(Event e, Object o){
        repaint();
        return true;
    }
}
```

**OUTPUT**



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

**PROGRAM**

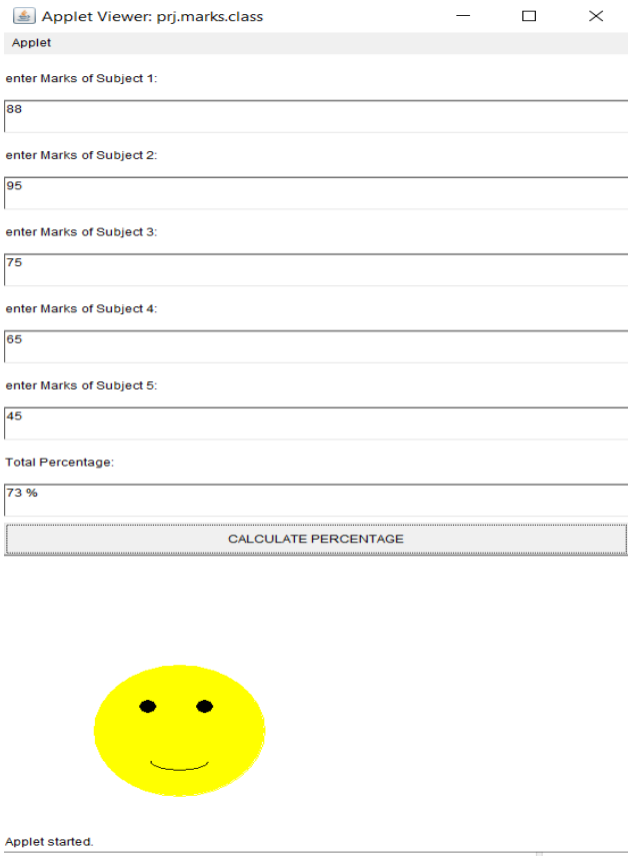
```
package prj;
import java.awt.*;
import java.awt.event.*;

import java.applet.*;
public class marks extends Applet implements ActionListener  {
        public int per =0;

            Label l1 = new Label("enter Marks of Subject 1: ");
          Label l2 = new Label("enter Marks of Subject 2: "); Label
          l3 = new Label("enter Marks of Subject 3: "); Label l4 =
          new Label("enter Marks of Subject 4: "); Label l5 = new
          Label("enter Marks of Subject 5: "); Label l6 = new
          Label("Total Percentage: ");

          TextField t1 = new TextField(10);
          TextField t2 = new TextField(10);
          TextField t3 = new TextField(10);
          TextField t4 = new TextField(10);
          TextField t5 = new TextField(10);
          TextField t6 = new TextField(10);

          Button b1 = new Button("CALCULATE PERCENTAGE");public

          marks()
          {
              l1.setBounds(50, 100, 280, 20);
            l2.setBounds(50, 150, 280, 20);
            l3.setBounds(50, 200, 280, 20);
            l4.setBounds(50, 250, 280, 20);
            l5.setBounds(50, 300, 280, 20);
            l6.setBounds(50, 350, 280, 20);

            t1.setBounds(200, 100, 300, 20);
            t2.setBounds(200, 150, 300, 20);
            t3.setBounds(200, 200, 300, 20);
            t4.setBounds(200, 250, 300, 20);
            t5.setBounds(200, 300, 300, 20);
            t6.setBounds(200, 350, 300, 20);
```

```
    b1.setBounds(200,400, 200, 20);
    GridLayout g1 = new GridLayout(20, 2, 5, 5);
    setLayout(g1);
add(l1);
 add(t1);
 add(l2);
 add(t2);
 add(l3);
 add(t3);
 add(l4);
 add(t4);
 add(l5);
 add(t5);
 add(l6);
 add(t6);
 add(b1);
 b1.addActionListener(this);
}

        public void actionPerformed(ActionEvent e) {
  int m1 = Integer.parseInt(t1.getText());
    int                                    m2=
    Integer.parseInt(t2.getText());int m3=
    Integer.parseInt(t3.getText());int m4=
    Integer.parseInt(t4.getText());int m5=
    Integer.parseInt(t5.getText());

    if(e.getSource()==b1)
    {
        int add=m1+m2+m3+m4+m5;
        per=add/5;
        t6.setText(String.valueOf(per)+" %");

        repaint();
    }


        }
        public void paint(Graphics g)
{
                if(per>=50)
                {
                        g.setColor(Color.yellow);
                        g.drawOval(80, 700, 150, 150);
```

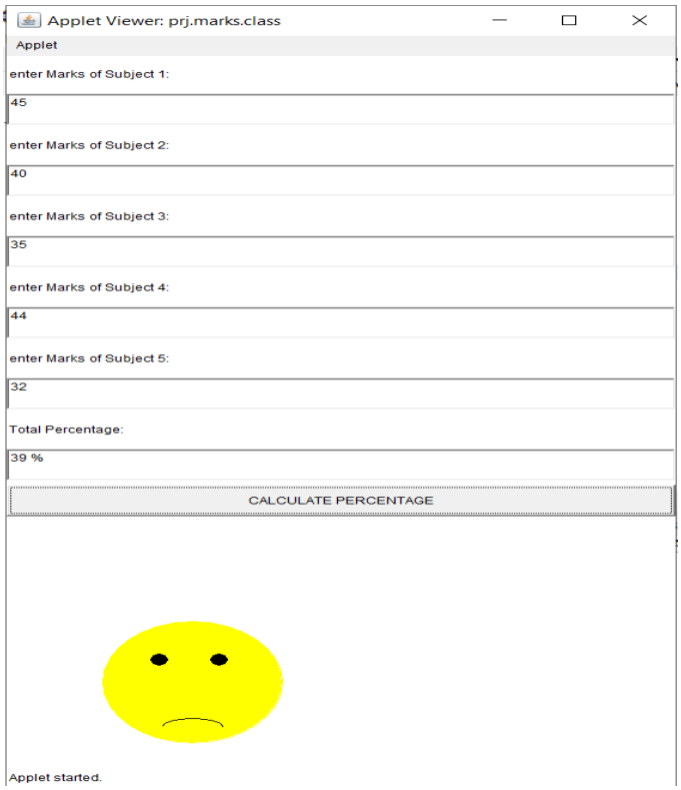
```
                    g.fillOval(80, 700, 150, 150);
                    g.setColor(Color.BLACK);
                    g.fillOval(120, 740, 15, 15);
                    g.fillOval(170, 740, 15, 15);
                    g.drawArc(130, 800, 50, 20, 180, 180);
                }
                else if(per>0 && per<50)
                {
                    g.setColor(Color.yellow);
                    g.drawOval(80, 700, 150, 150);
                    g.fillOval(80, 700, 150, 150);
                  g.setColor(Color.BLACK);
                  g.fillOval(120, 740, 15, 15);
                  g.fillOval(170, 740, 15, 15);
                    g.drawArc(130,820,50,20,0,180);
                }
        }


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


}
```

**OUTPUT**

Case1:




Case 2:



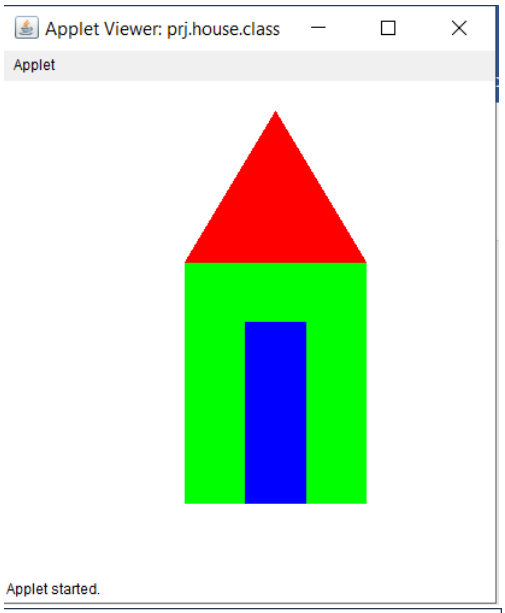
4. Using 2D graphics commands in an Applet, construct a house. On mouse click event, change the color of the door from blue to red.

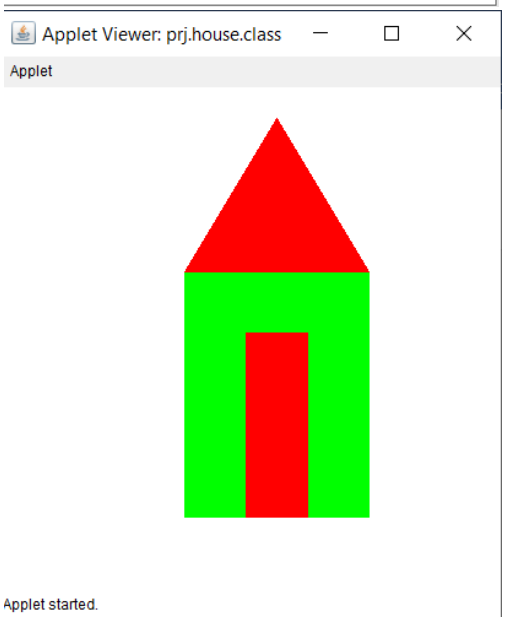
**PROGRAM**

```
package prj;
import java.applet.
*;import java.awt. *;
import java.awt.event.MouseEvent;
import java.awt.event.MouseListener;

public class house extends Applet  implements MouseListener,Runnable
{
        private Color door=Color.blue;
public void paint (Graphics g)
{
        int x[]= {150,300,225};
        int y[]= {150,150,25};
        g.setColor(Color.green);
        g.fillRect(150, 150, 150, 200);
        g.drawRect(150,150,150,200);
        g.setColor(door);
        g.fillRect(200, 200, 50, 150);
        g.drawRect(200,200,50, 150);
        g.setColor(Color.red);
        g.fillPolygon(x,y,3);
        g.drawPolygon(x,y,3);
}
public void init()
{
this.setSize(200,200);
addMouseListener(this);
}
public void run()
{
while(true)
{
repaint()
;try
{
Thread.sleep(5);
}
catch(InterruptedException e)
{
e.printStackTrace();
}
}
```

```
}
public void mouseClicked(MouseEvent e)
{
int x=e.getX(), y=e.getY();
if(x<=300) door=Color.red;
else
door=Color.blue;
repaint();
}
public void mousePressed(MouseEvent e){}
public void mouseReleased(MouseEvent e){}
public void mouseEntered(MouseEvent e){}
public void mouseExited(MouseEvent e){}

}
```

## OUTPUT


Applet Viewer: prj.house.class
Applet
Applet started.


Applet Viewer: prj.house.class
Applet
Applet started.

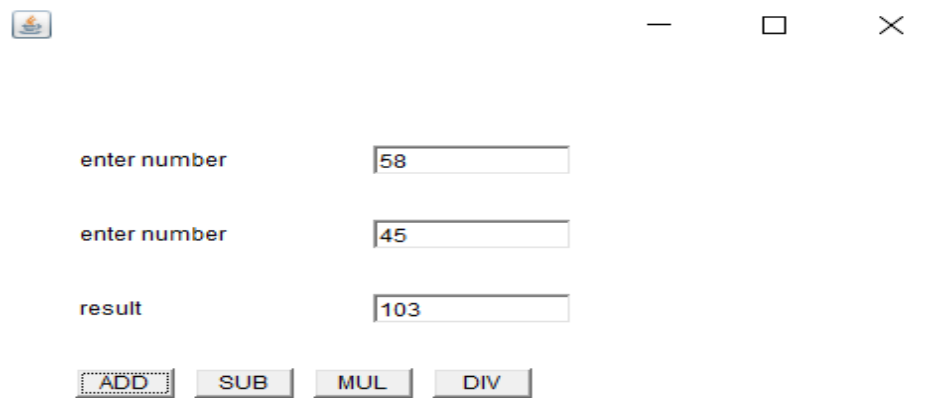
5. Implement a simple calculator using AWT components.

**PROGRAM**

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

public class calc extends Applet implements ActionListener {
   Frame f = new Frame();
   Label l1 = new Label("enter number");
   Label l2 = new Label("enter number");
   Label l3 = new Label("result");
   TextField t1 = new TextField(10);
   TextField t2 = new TextField(10);
   TextField t3 = new TextField(10);
   Button b1 = new Button("ADD");
   Button b2 = new Button("SUB");
   Button b3 = new Button("MUL");
   Button b4 = new Button("DIV");

   calc()
   {
      l1.setBounds(50, 100, 100, 20);
      l2.setBounds(50, 150, 100, 20);
      l3.setBounds(50, 200, 100, 20);
      t1.setBounds(200, 100, 100, 20);
      t2.setBounds(200, 150, 100, 20);
      t3.setBounds(200, 200, 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);
      f.add(l1);
      f.add(t1);
      f.add(l2);
      f.add(t2);
      f.add(l3);
      f.add(t3);
      f.add(b1);
      f.add(b2);
      f.add(b3);
      f.add(b4);
      b1.addActionListener(this);
      b2.addActionListener(this);
      b3.addActionListener(this);
```

```
        b4.addActionListener(this);
        f.setLayout(null);
        f.setVisible(true);
        f.setSize(500, 500);

    }

    public void actionPerformed(ActionEvent e) {
        int i = Integer.parseInt(t1.getText());
        int j = Integer.parseInt(t2.getText());
        if (e.getSource() == b1) {
            t3.setText(String.valueOf(i + j));

        }
        if (e.getSource() == b2) {
            t3.setText(String.valueOf(i - j));

        }
        if (e.getSource() == b3) {
            t3.setText(String.valueOf(i * j));

        }
        if (e.getSource() == b4) {
            t3.setText(String.valueOf(i / j));

        }

    }

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

**OUTPUT**



6. Develop a program that has a Choice component which contains the names of shapessuch as rectangle, triangle, square and circle. Draw the corresponding shapes for given parameters as per user's choice.

**PROGRAM**

```
package prj;
import
java.applet.Applet;import
java.awt.*;
import java.awt.Graphics;
import java.awt.event.*;
public class figchoice extends Applet implements ItemListener {
   Choice ch;
   int x1[]= {50,120,220,20};
         int y1[]= {50,120,20,20};
         int n=4;
   int Selection;

   public void init()
   {
      ch = new Choice();
      ch.addItem("Select a
      Shape");
      ch.addItem("Rectangle");
      ch.addItem("Triangle");
      ch.addItem("Square");
      ch.addItem("Circle");
      add(ch);
      ch.addItemListener(this);
   }

 public void itemStateChanged (ItemEvent e)
   {
       Selection = ch.getSelectedIndex();
       repaint();
   }

 public void paint(Graphics g)
          {
       super.paint(g);

       if (Selection == 1)
       {
          g.drawRect(50,50,100,150);
       }
       if (Selection == 2)
       {
```

```
            g.drawPolygon(x1,y1,n);
        }
        if (Selection == 3)
        {
            g.drawRect(50,50,100,100);
        }
        if (Selection == 4)
        {
            g.drawOval(70,30,100,100);
        }
          }
}
```

**OUTPUT**