OBJECT ORIENTED PROGRAMMING LAB

Jisha Chacko

S2RMCA:A batch

ROLLNO:44

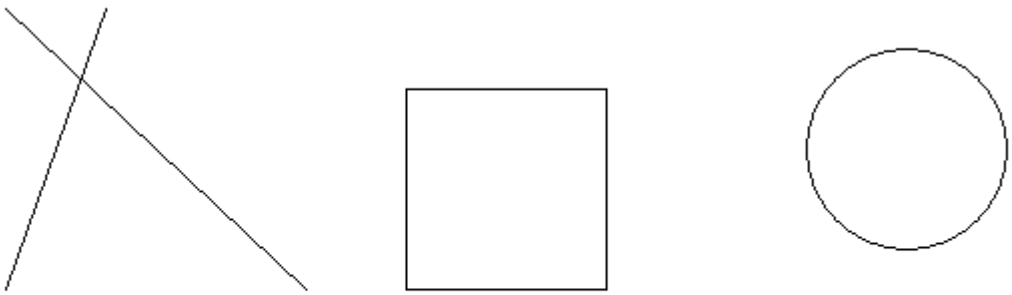
1) Program to draw circle,rectangle,line in applet

```
import java.awt.*;
import java.applet.*;
public class line extends Applet
{
 public void paint(Graphics g)
{
  g.drawLine(100,10,250, 150);
  g.drawLine(100,150,150,10);
  g.setColor(Color.black);
 g.drawRect(300, 50, 100, 100);

 g.setColor(Color.black);
 g.drawOval(500,30,100,100);
}
}
```

.html code

```
<html>
  <head>
  </head>
  <body>
      <applet code = "line.class" width = "420" height = "320"></applet>
  </body>
</html>
```

Applet



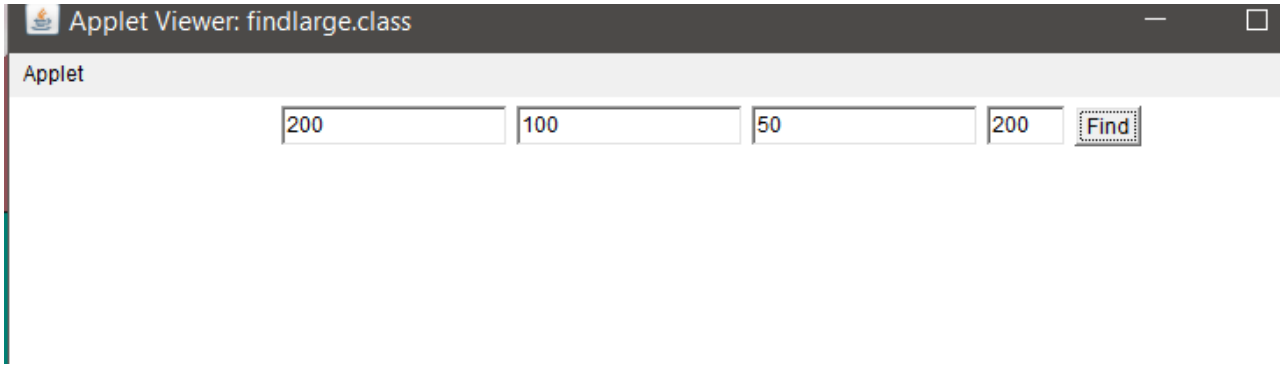
2) Program to find maximum of three numbers using AWT

```
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;
}
else
{
result=c;
}
g.drawString("Largest number is "+result,10,70);
}
public boolean action(Event e, Object o){
repaint();
return true;
}
}
```

html

```
<html>
<head>
</head>
<body>
<div align="center">
<applet code="largest.class"width="800"height="500">
</applet>
</div>
</body>
</html>
```



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

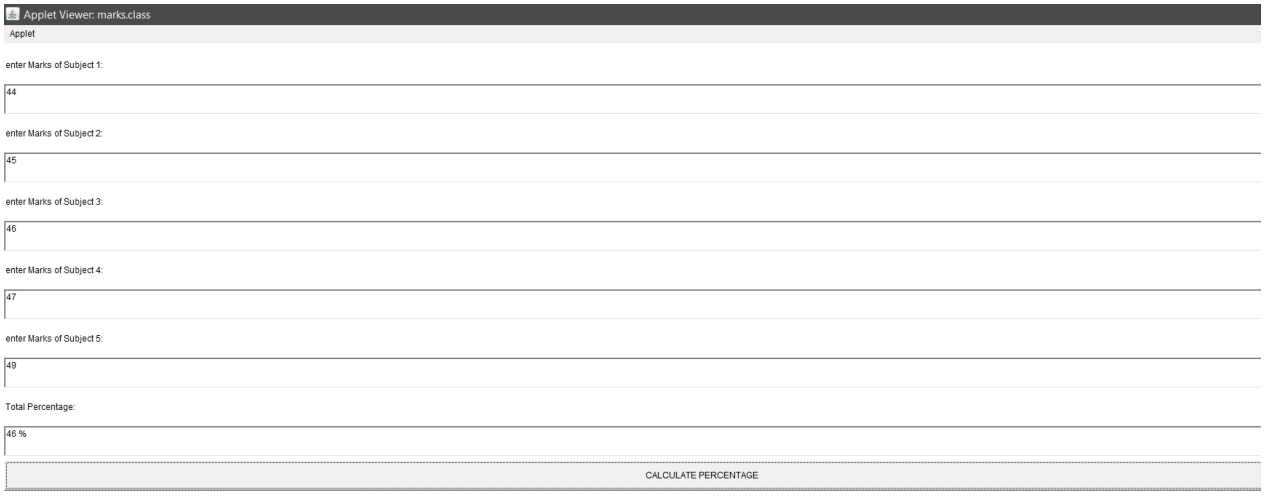
```
import java.awt.*;
import java.awt.event.*;
import java.applet.*;
public class marks extends Applet implements ActionListener {
public int per =0;
Label l1 = new Label("enter Marks of Subject 1: ");
 Label l2 = new Label("enter Marks of Subject 2: ");
 Label l3 = new Label("enter Marks of Subject 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);
 }
@Override
public void actionPerformed(ActionEvent  e) {
// TODO Auto-generated method stub
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);
```

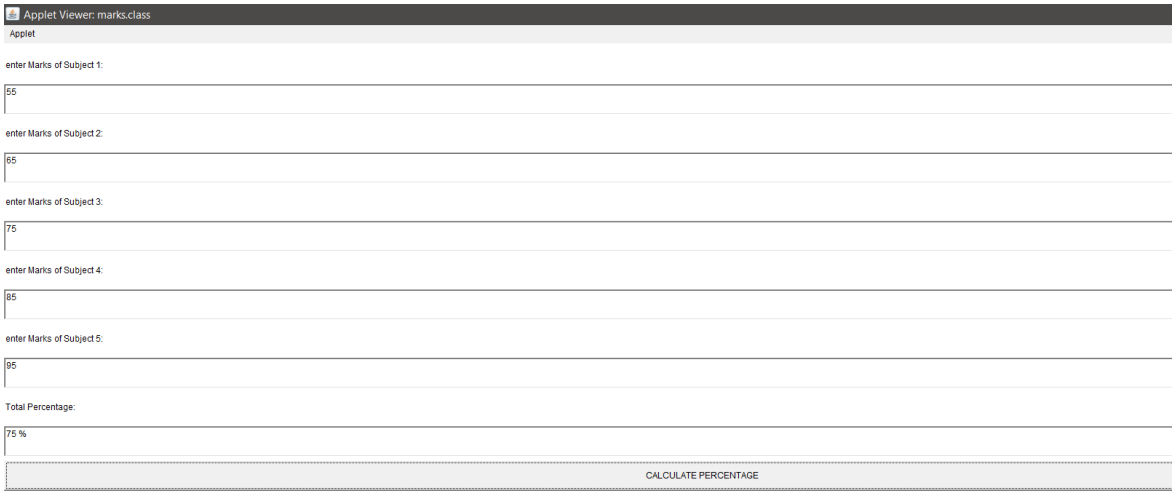
```
g.drawArc(130,820,50,20,0,180);
}
 }
public static void main(String  args[]) {
 new marks();
 }

}
```

Html

```
<html>
<head>
</head>
<body>
<div align="center">
<applet code="marks.class"width="800"height="500">
</applet>
</div>
</body>
</html>
```



Applet started.



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.

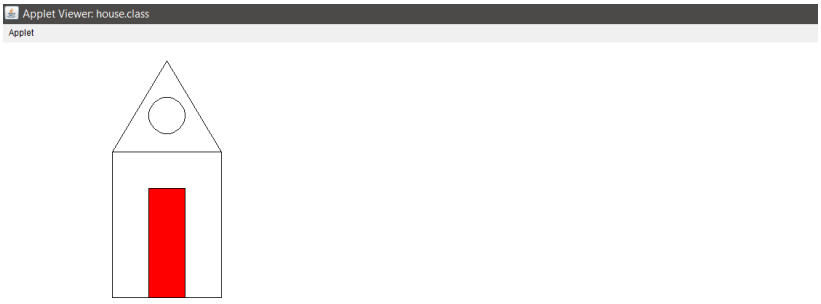
```
import java.awt.*;
import java.applet.*;
import java.awt.event.*;

public class house extends Applet implements MouseListener, Runnable {
private Color doorColor = Color.WHITE;

public void paint(Graphics gp) {
int[] i = { 150, 300, 225 };
int[] j = { 150, 150, 25 };
gp.drawRect(150, 150, 150, 200);
gp.drawOval(200, 75, 50, 50);
gp.drawPolygon(i, j, 3);
gp.setColor(doorColor);
gp.fillRect(200, 200, 50, 150);
gp.setColor(Color.BLACK);
gp.drawRect(200, 200, 50, 150);
}

public void init() {
this.setSize(200, 200);
```

```
addMouseListener(this);
}

public void run() {
while (true) {
repaint();
try {
Thread.sleep(17);
} catch (InterruptedException  e) {
e.printStackTrace();
}
}
}

public void mouseClicked(MouseEvent  e) {
int x = e.getX(), y = e.getY();
if (x >= 200 && x <= 250 && y >= 200 && y <= 350)
doorColor = Color.RED;
else
doorColor = Color.BLUE;
repaint();
System.out.println("Mouse  Position : X=" + x + " Y=" + y + "");

}

public void mousePressed(MouseEvent  e) {
}

public void mouseReleased(MouseEvent  e) {
}

public void mouseEntered(MouseEvent  e) {
}
```

```
public void mouseExited(MouseEvent  e) {

}

}
```

Html code

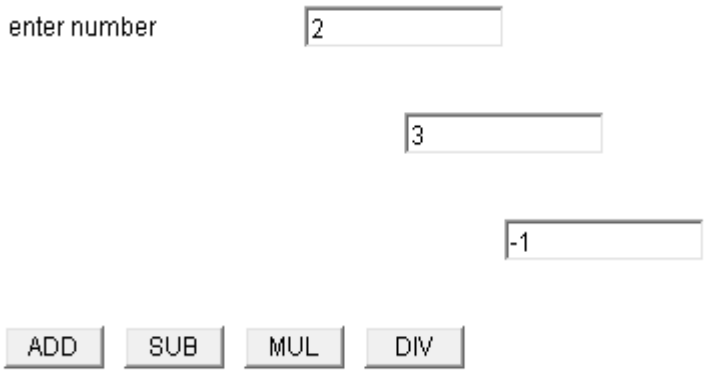
```
<html>

<head>

</head>

<body>

<div align="center">

<applet code="house.class" width="800" height="500">

</applet>

</div>

</body>

</html>
```



5) Implement a simple calculator using AWT components

```
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, 100, 100, 20);
      l3.setBounds(50, 100, 100, 20);
      t1.setBounds(200, 100, 100, 20);
      t2.setBounds(250, 150, 100, 20);
      t3.setBounds(300, 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));
```

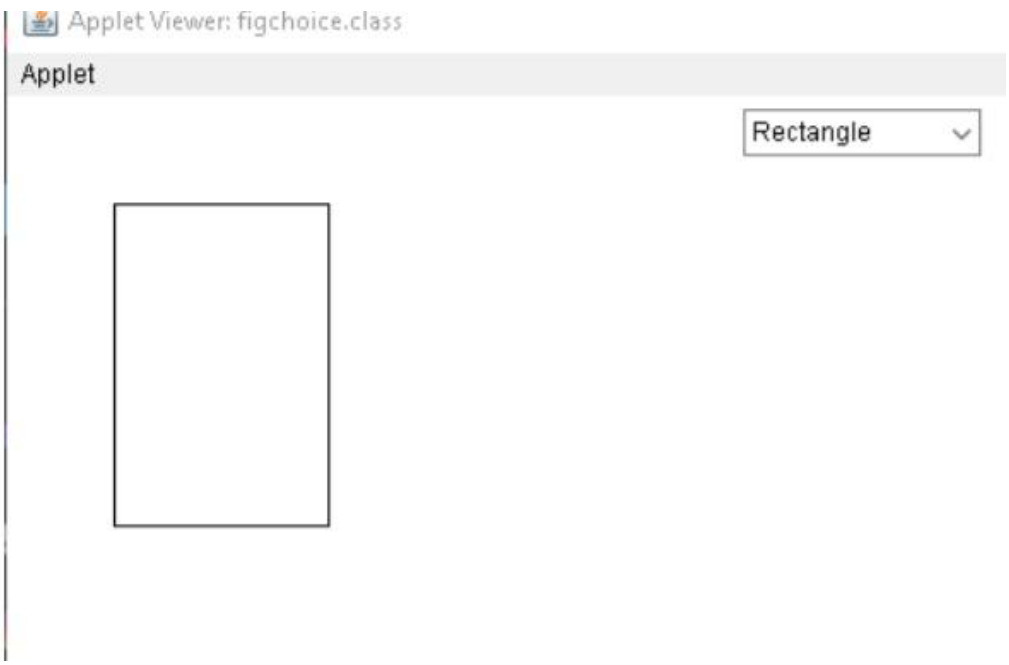
```
        }
        if (e.getSource() == b2) {
           t3.setText(String.valueOf(i  - j));

        }
        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();
     }
}
```

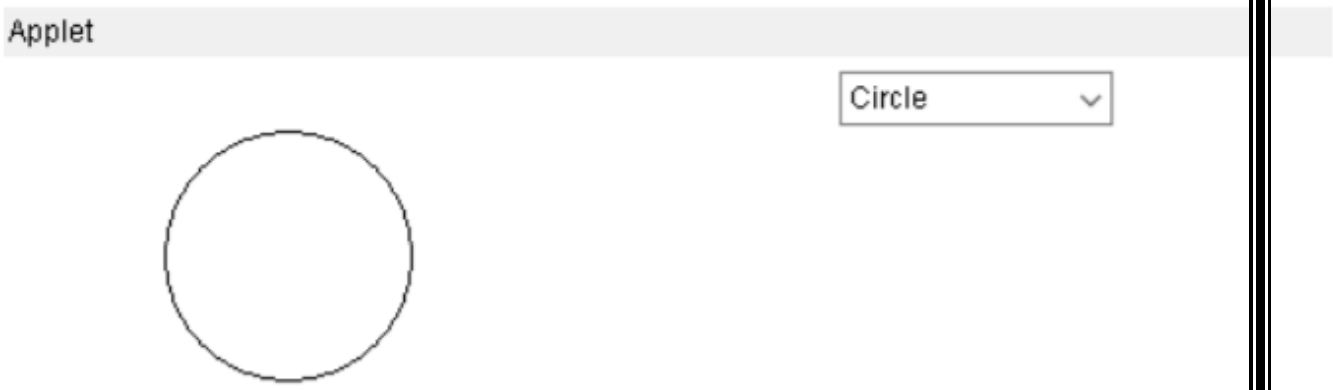


6) Develop a program that has a choice component which contains the names of shapes such as rectangle ,triangle.square and circle,Draw the corresponding shapes for given parameters as per user's choice.

```
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);
 }
```


Applet Viewer: figchoice.class
Applet
Rectangle


Applet
Circle

Applet

Triangle