

JAVA LAB -Part B(II sem)

- 1. Program to catch Negative Array Size Exception. This exception is caused when the array is initialized to negative values.**

```
class B01NegativeSize{
    public static void main(String args[]){
        try{
            int[] a = new int[-5];
        }
        catch(NegativeArraySizeException e){
            System.out.println("Negative Array Size!!");
        }
        System.out.println("Continuing execution... ");
    }
}
```

Output -

Negative Array Size!!
Continuing execution...

- 2. Program to handle Null Pointer Exception and use the “finally” method to display a message to the user.**

```
public class B02NullPointer{
    public static void main(String args[]){
        String str = null;
        //Try-catch-finally blocks
        try{
            // Below code will give null pointer exception as we
are access null str
            // Note that string is a character array. And we are
trying to access the 1st character of this string.
            System.out.println("First character of str is:" +
str.charAt(0));
        }
        catch(NullPointerException e){
            System.out.println("NullPointerException Caught in catch
block... ");
        }
    }
}
```

```
    finally{
        System.out.println("Finally is executed always");
    }
}
```

Output-

NullPointerException Caught in catch block...
Finally is executed always

3. Program which creates and displays a message on the window.

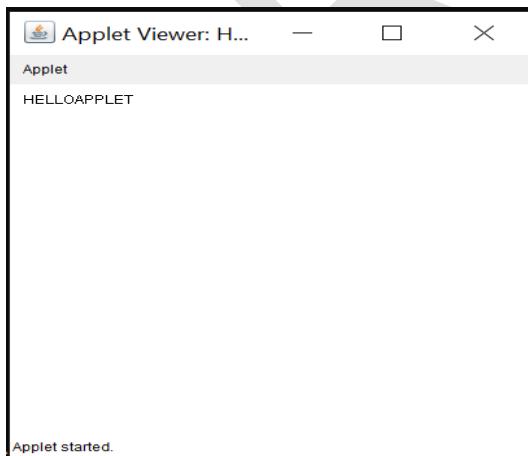
HELLOAPPLET.JAVA:-

```
import java.applet.*;
import java.awt.*;
public class HelloApplet extends Applet
{
    public void paint(Graphics g)
    {
        g.drawString("HELLOAPPLET",10,20);
    }
}
```

a.html:-

```
<html>
<applet code="HelloApplet.class" width=400 height=400>
</applet> </html>
```

Output -



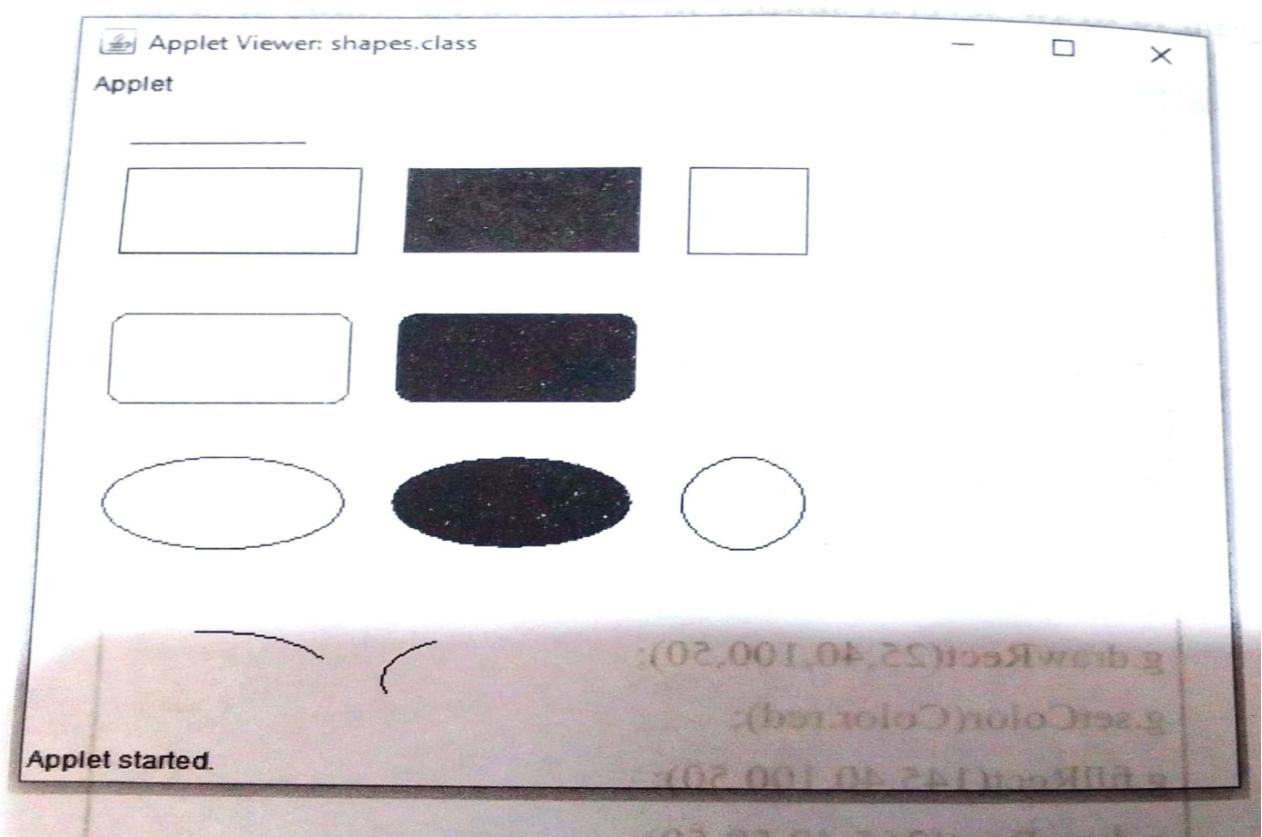
4. Program to draw several shapes in the created window

✓ **Program to draw several shapes in the created window. (File Name: shapes.java)**

program:

```
// Demonstrate to draw Shapes  
import java.awt.*;  
import java.applet.*;  
  
public class shapes extends Applet  
{  
    public void paint(Graphics g)  
    {  
        g.drawLine(25,25,100,25);  
        g.drawRect(25,40,100,50);  
        g.setColor(Color.red);  
        g.fillRect(145,40,100,50);  
        g.drawRect(265,40,50,50);  
        g.drawRoundRect(25,125,100,50,15,15);  
        g.setColor(Color.blue);  
        g.fillRoundRect(145,125,100,50,15,15);  
        g.drawOval(25,205,100,50);  
        g.fillOval(145,205,100,50);  
        g.drawOval(265,205,50,50);  
        g.drawArc(25,300,100,50,25,75);  
        g.drawArc(145,300,100,50,125,75);  
    }  
}
```

Output:



5. Write a program to create an applet and grid lines.

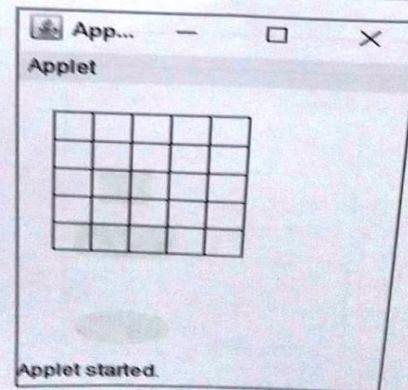
Program 3 Write a program to create an applet and draw grid lines

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

public class Grid extends Applet {
    public void paint(Graphics g) {
        int row, column, x, y = 20;
        // for every row
        for (row = 1; row < 5; row++) {
            x = 20;
            // for every column
            for (column = 1; column < 5; column++) {
                g.drawRect(x, y, 40, 40);
                x = x + 20;
            }
            y = y + 20;
        }
    }
}

/*
 * <applet code = "Grid.class" height = 500 width =500> </applet>
 */
```

Output



6./*Program -Buttons */

Program 6

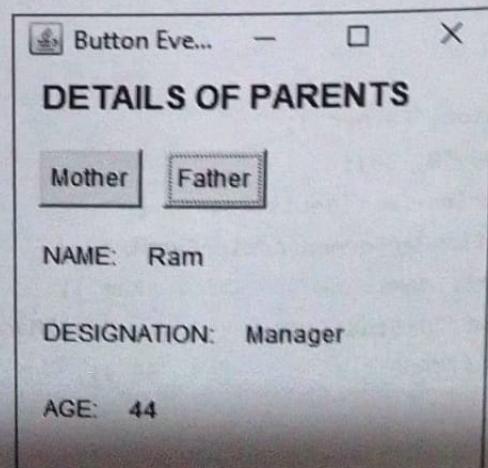
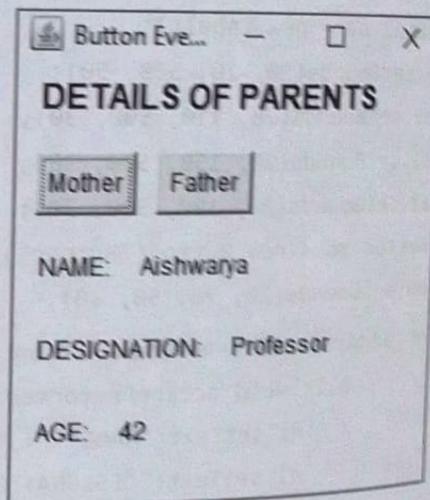
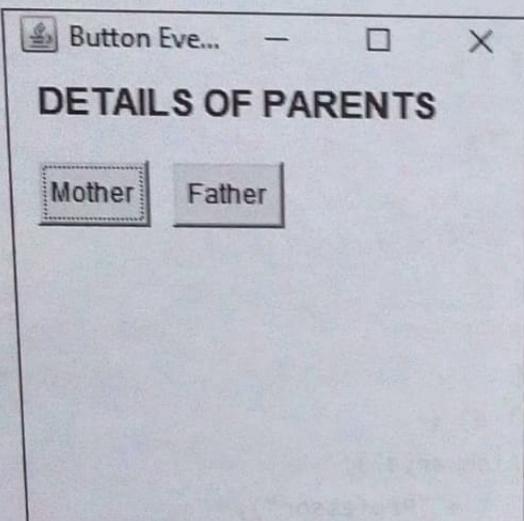
Write a program which creates a frame with two buttons father and mother. When we click the father button the name of the father, his age and designation must appear. When we click mother similar details of mother also appear.

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

public class ButtonClickActionEvents {
    public static void main(String[] args) {
        Frame f = new Frame("Button Event");
        Label l = new Label("DETAILS OF PARENTS");
        l.setFont(new Font("Calibri", Font.BOLD, 16));
        Label nl = new Label();
        Label dl = new Label();
        Label al = new Label();
        l.setBounds(20, 20, 500, 50);
        nl.setBounds(20, 110, 500, 30);
        dl.setBounds(20, 150, 500, 30);
        al.setBounds(20, 190, 500, 30);
        Button mb = new Button("Mother");
        mb.setBounds(20, 70, 50, 30);
        mb.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                nl.setText("NAME:" + " " + "Aishwarya");
                dl.setText("DESIGNATION:" + " " + "Professor");
                al.setText("AGE:" + " " + "42");
            }
        });
        Button fb = new Button("Father");
        fb.setBounds(80, 70, 50, 30);
        fb.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                nl.setText("NAME:" + " " + "Ram");
                dl.setText("DESIGNATION:" + " " + "Manager");
                al.setText("AGE:" + " " + "44");
            }
        });
    }
}
```

```
// adding elements to the frame  
f.add(mb);  
f.add(fb);  
f.add(l);  
f.add(nl);  
f.add(dl);  
f.add(al);  
// setting size, layout and visibility  
f.setSize(250, 250);  
f.setLayout(null);  
f.setVisible(true);  
}
```

Output



7./* Program 7—personal details with button click */

7. Create a frame which displays your personal details with respect to a button click. (File Name: personal.java)

Program:

```
//Personal Details  
import java.awt.*;  
import java.awt.event.*;  
public class personal extends Frame  
{  
    Button p, close;  
    Label l1,l2,l3,l4,l5,l6;;  
    personal()  
    {  
        setFont(new Font("Arial", Font.BOLD, 20));  
        p = new Button("Personal Details");  
        close = new Button ("Close");  
        l1 = new Label ("");  
        l2 = new Label ("");  
        l3 = new Label ("");
```

```
14 = new Label ("");
15 = new Label ("");
16 = new Label ("");
setLayout (new GridLayout(8,1));
setSize (500,500);
add(p);
add(close);
add(l1);
add(l2);
add(l3);
add(l4);
add(l5);
add(l6);
setVisible(true);
ButtonHandler bh = new ButtonHandler();
p.addActionListener(bh);
close.addActionListener(bh);
}
class ButtonHandler implements ActionListener
{
public void actionPerformed(ActionEvent e)
{
if (e.getSource() == p)
{
l1.setText("Name : CHARLES");
l2.setText("Father Name : James");
l3.setText("Date of Birth : 02/03/1995");
l4.setText("Address : No.50, MG Road, Kolar-563101");
l5.setText("Mobile Number : 9123456789");
l6.setText("Email : charless1995@gmail.com");
}
}
```

```
}

if (e.getSource()==close)

{

System.exit(0);

}

}

public static void main(String args[])

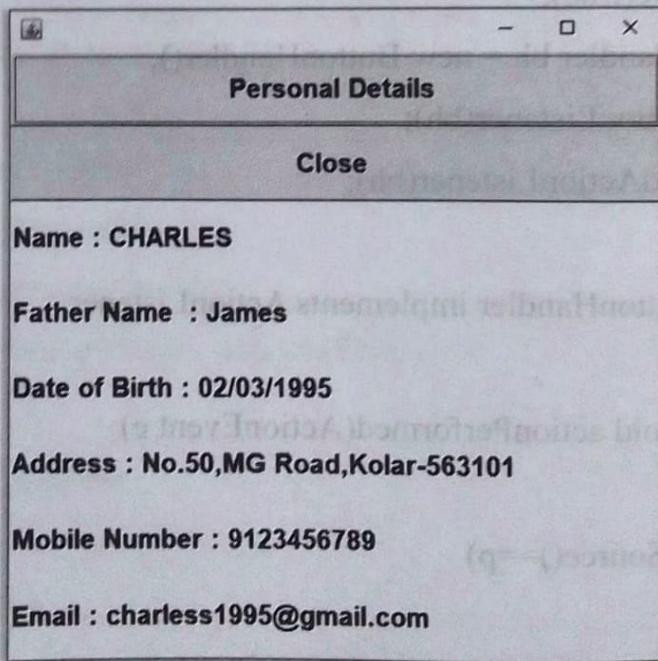
{

new personal();

}

}
```

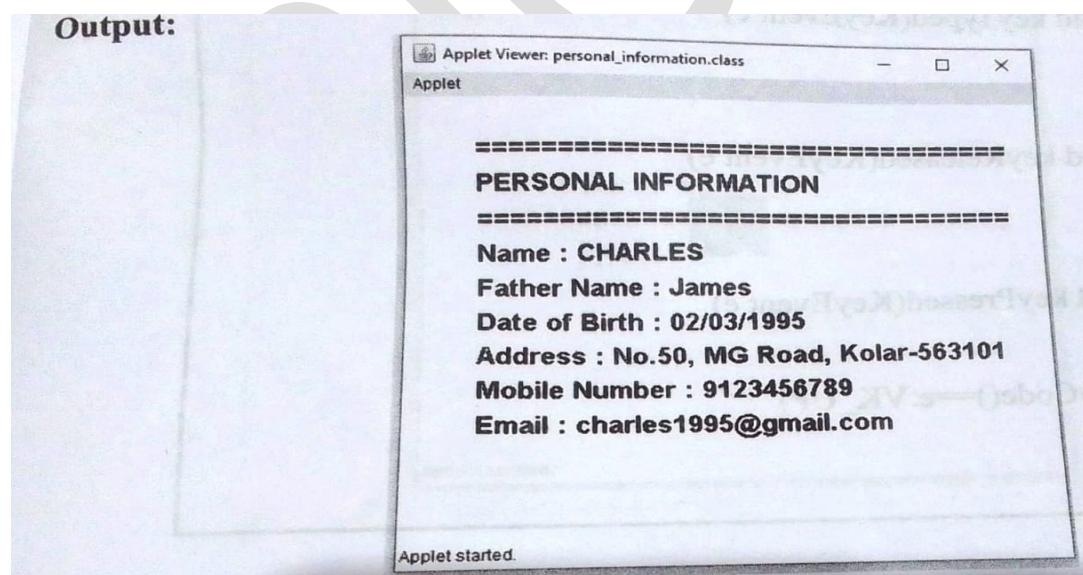
Output:



8. Create a simple applet which reveals the personal information of yours

```
import java.awt.*;
import java.applet.*;
public class Personal extends Applet{
    Font f;
    public void init(){
        setSize(500,500);
        f=new Font ("Arial",Font.BOLD,20);
    }
    public void paint(Graphics g){
        g.drawString("=====", 50, 50);
        g.drawString("Personal Information", 50, 80);
        g.drawString("=====", 50, 110);
        g.drawString("Name:Charles", 50, 140);
        g.drawString("Father Name:James", 50, 170);
        g.drawString("Date of Birth:02/03/1995", 50, 200);
        g.drawString("Address No:50, MG Road,Kolar", 50, 230);
        g.drawString("Mobile Number:9123456789", 50, 260);
        g.drawString("E-mail:charles1995@gmail.com", 50, 290);
    }
}
/* <applet code="Personal.class" height=300 width=500> </applet> */
```

Output -



9./* Program 9- Move shapes Keyboard events*/**Program 9**

Write a program to move different shapes according to the arrow key pressed.

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

/*
<applet code="ArrowKeys" Width=400 height=400>
</applet>
*/
public class ArrowKeys extends Applet implements KeyListener {

    int x1 = 100, y1 = 50, x2 = 250, y2 = 200;

    public void init() {
        addKeyListener(this);
    }

    public void keyPressed(KeyEvent ke) {
        showStatus("KeyDown");
        int key = ke.getKeyCode();
```

NEW HORIZON

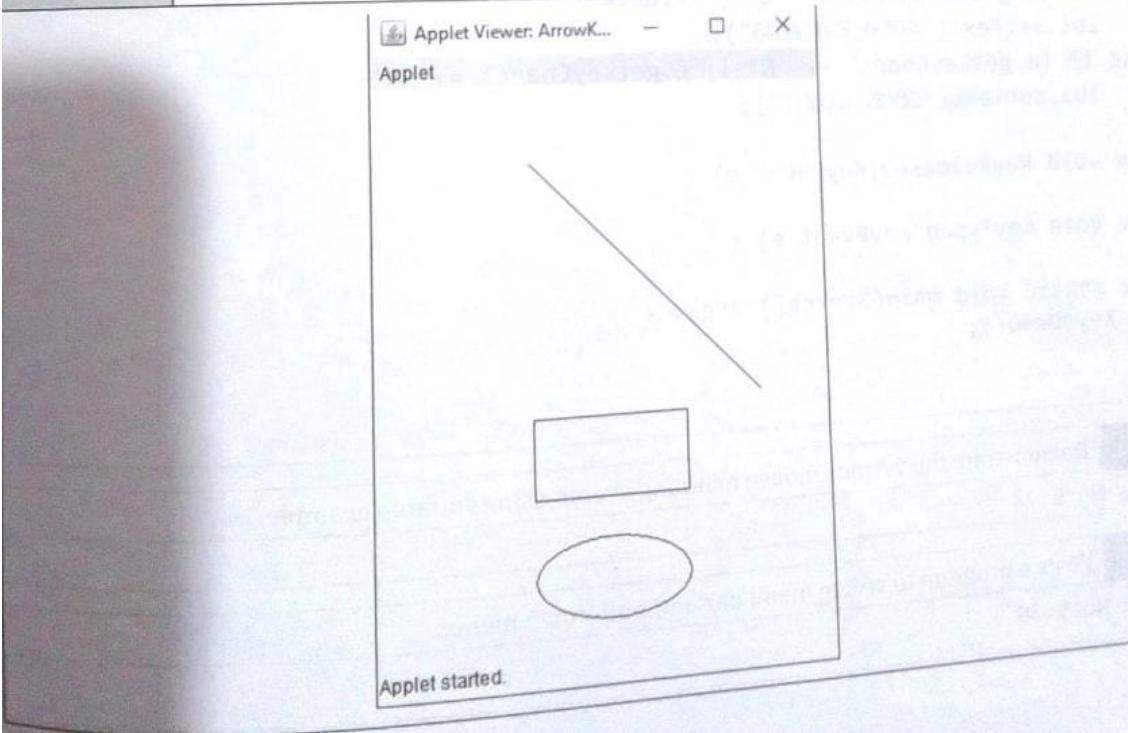
```
switch (key) {
    case KeyEvent.VK_LEFT : x1 = x1 - 10; x2 = x2 - 10;
                            break;
    case KeyEvent.VK_RIGHT: x1 = x1 + 10; x2 = x2 + 10;
                            break;
    case KeyEvent.VK_UP   : y1 = y1 - 10; y2 = y2 - 10;
                            break;
    case KeyEvent.VK_DOWN : y1 = y1 + 10;
                            y2 = y2 + 10;
                            break;
}
repaint();
}

public void keyReleased(KeyEvent ke) {
}

public void keyTyped(KeyEvent ke) {
    repaint();
}

public void paint(Graphics g) {
    g.drawLine(x1, y1, x2, y2);
    g.drawRect(x1, y1 + 160, 100, 50);
    g.drawOval(x1, y1 + 235, 100, 50);
}
}
```

Output



10./* Program 10-To create a window*/

10. Program to create a window when we press M or m the window displays Good Morning, A or a the window displays Good After Noon E or e the window displays Good Evening, N or n the window displays Good Night. (File Name: display.java)

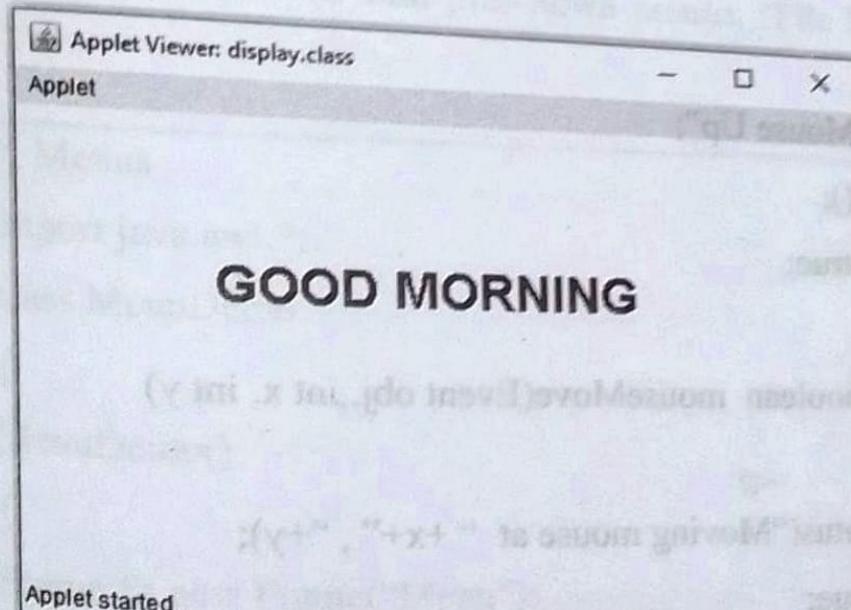
Program:

```
// Display Message
import java.awt.*;
import java.awt.event.*;
import java.applet.*;
public class display extends Applet implements KeyListener
{
    String msg = "";
    Font f;
    public void init()
    {
        setSize (500,500);
        f=new Font("Arial",Font.BOLD,28);
        setForeground(Color.blue);
        addKeyListener(this);
    }
    public void keyReleased(KeyEvent e)
    {
    }
    public void keyTyped(KeyEvent e)
    {
        repaint();
    }
    public void keyPressed(KeyEvent e)
    {
        if (e.getKeyCode()==77)
            msg="GOOD MORNING";
    }
}
```

```
if (e.getKeyCode() == 65)
    msg = "GOOD AFTERNOON";
if (e.getKeyCode() == 69)
    msg = "GOOD EVENING";
if (e.getKeyCode() == 78)
    msg = "GOOD NIGHT";
}

public void paint(Graphics g)
{
    g.setFont(f);
    g.drawString(msg, 100, 100);
}
```

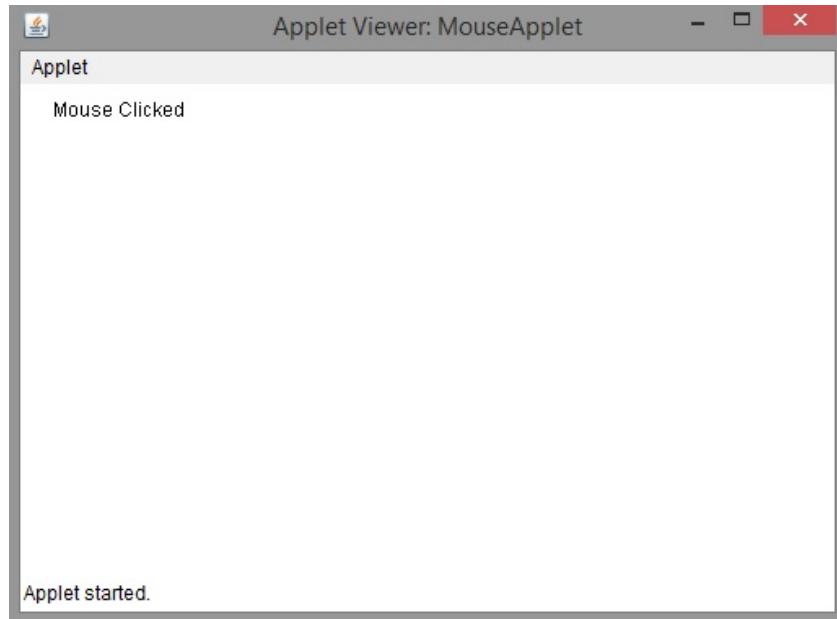
Output:



11. Demonstrate the various mouse handling events using suitable example.

```
import java.applet.*;
import java.awt.*;
import java.awt.event.*;
public class B11MouseEvents extends Applet implements MouseListener{
    String msg = "Initial Message";
    public void init(){
        addMouseListener(this);
    }
    public void mouseClicked(MouseEvent m){
        msg = "Mouse Clicked";
        repaint();
    }
    public void mousePressed(MouseEvent m){
        msg = "Mouse Pressed";
        repaint();
    }
    public void mouseReleased(MouseEvent m){
        msg = "Mouse Released";
        repaint();
    }
    public void mouseEntered(MouseEvent m){
        msg = "Mouse Entered";
        repaint();
    }
    public void mouseExited(MouseEvent m){
        msg = "Mouse Exited";
        repaint();
    }
    public void paint(Graphics g){
        g.drawString(msg, 30, 30);
    }
}
```

Output -



12./* Program-Menu bar*/

12. **Program to create menu bar and pull-down menus. (File Name: MenuDemo.java)**

Program:

```
// Menus
import java.awt.*;
class MenuDemo
{
    MenuDemo()
    {
        Frame f= new Frame("Menu");
        MenuBar mb=newMenuBar();
        Menu m=new Menu("Course");
        Menu s=new Menu("Science");
        MenuItem i1=new MenuItem("Arts");
        MenuItem i2=new MenuItem("Commerce");
        MenuItem i3=new MenuItem("BCA");
        MenuItem i4=new MenuItem("B.Sc(PCS)");
        MenuItem i5=new MenuItem("B.Sc(MCS)");
    }
}
```

```
m.add(i1);
m.add(i2);
s.add(i3);
s.add(i4);
s.add(i5);
m.add(s);
mb.add(m);
f.setMenuBar(mb);
f.setSize(400,400);
f.setLayout(null);
f.setVisible(true);
}
public static void main(String args[])
{
new MenuDemo();
}
```

Output: