Part-B

12. Write a small program to catch Negative Array Size Exception. This exception is caused when the array is initialized to negative values.

```
public class NegativeArraySizeExceptionDemo
{
	public static void main(String[] args)
	{
		try
		{
			int[] array = new int[-10];
		}
		catch(NegativeArraySizeException obj)
		{
			obj.printStackTrace();
		}
		System.out.println("Exception Caught and Continuing Execution...");
	}
}
```

Program Output:

```
Compile: javac NegativeArraySizeExceptionDemo.java
Run: java NegativeArraySizeExceptionDemo
java.lang.NegativeArraySizeException
	at NegativeArraySizeExceptionDemo.main(NegativeArraySizeExceptionDemo.java:7)
Exception Caught and Continuing Execution...
```

13. Write a program to handle Null Pointer Exception and use the "finally" method to display a message to the user.

```
public class NullPointerExceptionDemo
{
	public static void main(String args[])
	{
		String city=null;
		try
		{
			if(city.equals("BANGALORE"))
				System.out.println("Equal");
			else
				System.out.println("Not Equal");
		}
		catch(NullPointerException e)
		{
			System.out.println("Null pointer exception caught");
		}
		finally
		{
			System.out.println("This finally block will be always executed");
		}
	}
}
```

Program Output:
Compile: javac NullPointerExceptionDemo.java
Run: java NullPointerExceptionDemo
Null pointer exception caught
This finally block will be always executed

14. Write a program which create and displays a message on the window

```
import java.awt.*;
public class Program14
{
	Program14()
	{
		Frame fm=new Frame();
		fm.setTitle("My First Frame");
		Label lb=new Label("Welcome to GUI Programming");
		fm.add(lb);
		fm.setSize(300,300);
		fm.setVisible(true);
	}
	public static void main(String args[])
	{
		Program14 p=new Program14();
	}
}
```

Program Output:
Compile: javac Program14.java
Run: java Program14

15. Write a program to draw several shapes in the created window

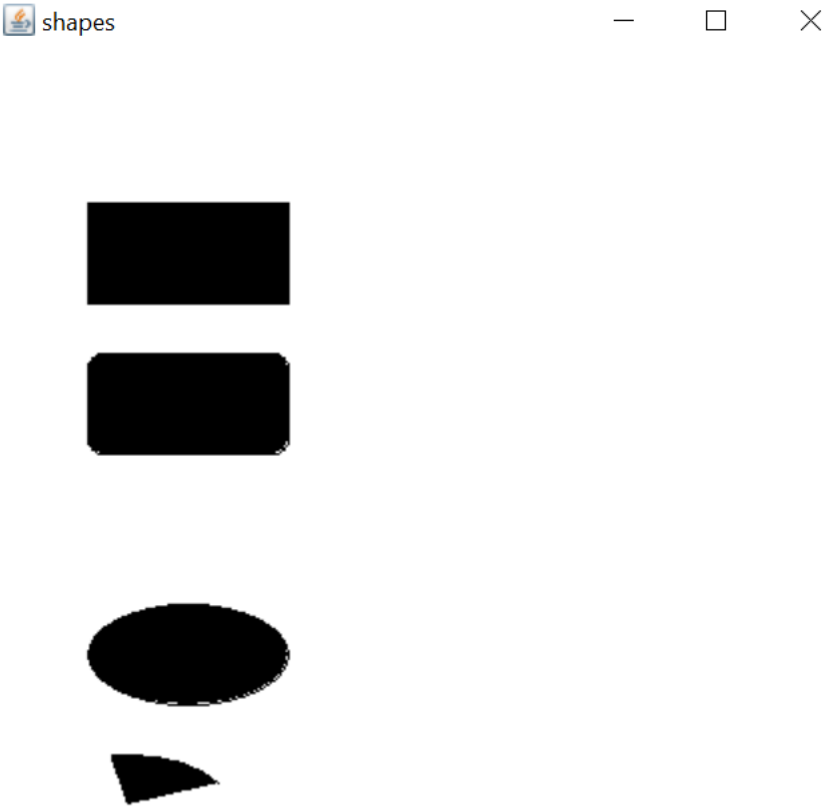
```
import java.awt.*;
public class DrawingsDemo extends Canvas
{
	public void paint(Graphics g)
	{
		g.drawRect(50,75,100,50);
		g.fillRect(50,75,100,50);
```

```
                g.drawRoundRect(50,150,100,50,15,15);
                g.fillRoundRect(50,150,100,50,15,15);
                g.drawOval(50,275,100,50);
                g.fillOval(50,275,100,50);
                g.drawArc(20,350,100,50,25,75);
                g.fillArc(20,350,100,50,25,75);
        }
        public static void main(String args[])
        {
                DrawingsDemo m=new DrawingsDemo();
                Frame f=new Frame("shapes");
                f.add(m);
                f.setSize(450,450);
                f.setVisible(true);
        }
}
```

Program Output:

Compile: javac DrawingsDemo.java

Run: java DrawingsDemo



16. Write a program to create an applet and draw grid lines

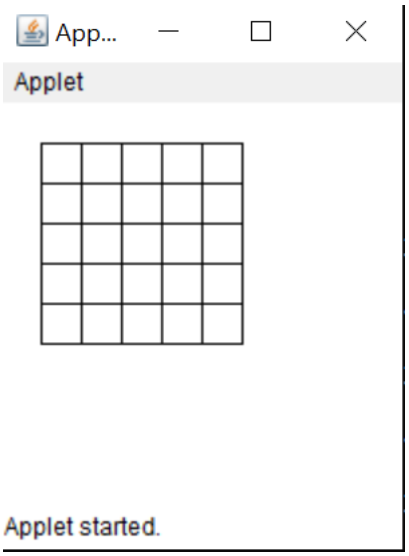
```
import java.awt.*;
import java.applet.*;
public class GridDemo extends Applet
{
        public void paint(Graphics g)
        {
                int row,column,x,y=20;
```

```
                for(row=1;row<5;row++)
                {
                        x=20;
                        for(column=1;column<5;column++)
                        {
                                g.drawRect(x,y,40,40);
                                x=x+20;
                        }
                        y=y+20;
                }
        }
}
/*
<applet code="GridDemo.class" height=200 width=200></applet>
*/
```

Program Output:

Compile: javac GridDemo.java

Run: appletviewer GridDemo.java



17. 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.

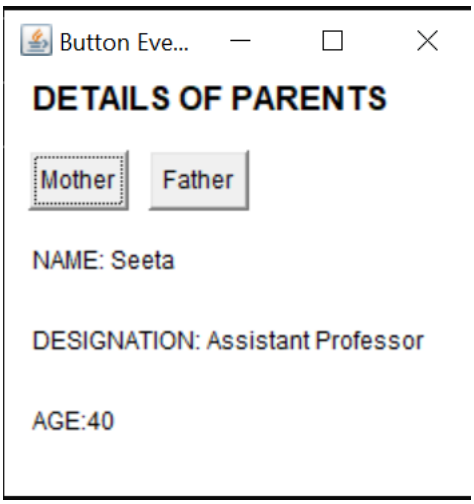
```
import java.awt.*;
import java.awt.event.*;

public class ButtonClickDemo
{
        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);
```

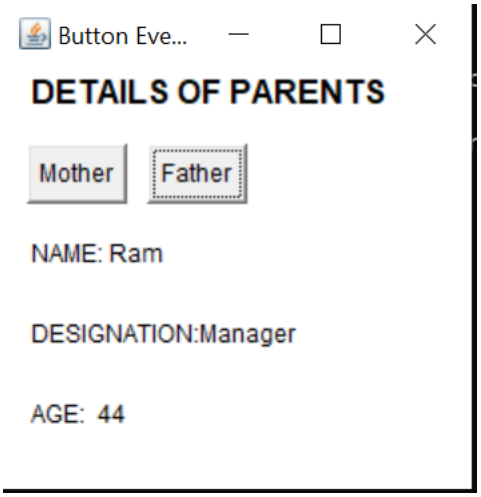
```
                dl.setBounds (20, 150, 500, 30);
                al.setBounds(20, 190, 500, 30);
                Button mb = new Button("Mother");
                mb.setBounds (20, 70, 50, 30);
                mb.addActionListener(new ActionListener()
                {
                        public void actionPerformed(ActionEvent e)
                        {
                                nl.setText("NAME:"+ "+"Seeta");
                                dl.setText("DESIGNATION:"+ "+"Assistant Professor");
                                al.setText("AGE:"+""+"40");
                        }
                });
                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);
        }
}
```

Program Output:

Compile: javac ButtonClickDemo.java

Run: java ButtonClickDemo





18. Create a frame which displays your personal details with respect to a button click

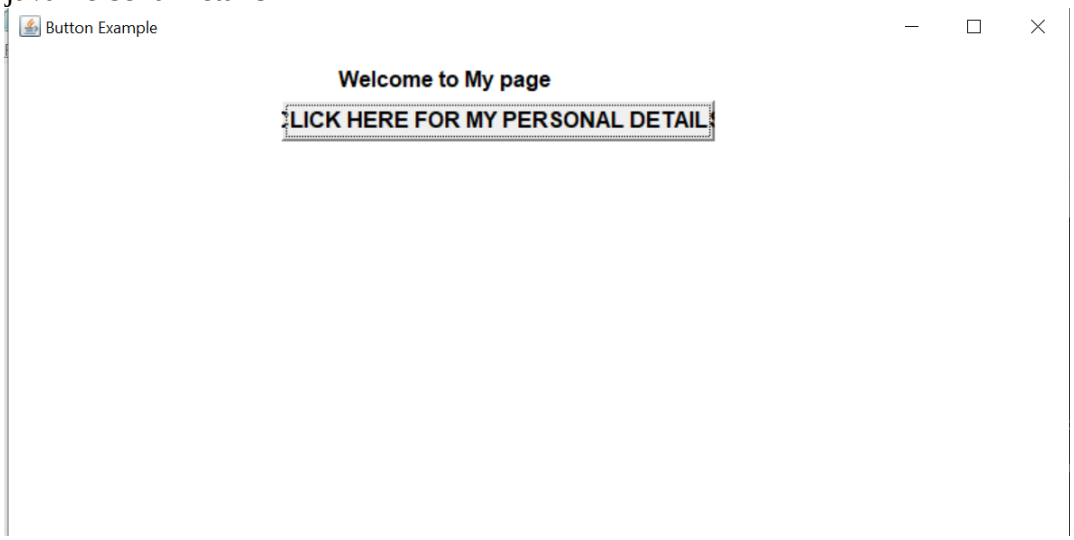
```
import java.awt.*;
import java.awt.event.*;
public class PersonalDetails
{
	public static void main(String args[])
	{
		Frame f=new Frame("Button Example");
		Label l=new Label("Welcome to My page");
		l.setFont(new Font("Calibri", Font.BOLD, 16));
		Label f1=new Label();
		Label f2=new Label();
		Label f3=new Label();
		Label f4=new Label();
		Label f5=new Label();
		l.setBounds(250,30,600,50);
		f1.setBounds(20,120,600,30);
		f2.setBounds(20,160,600,30);
		f3.setBounds(20,200,600,30);
		f4.setBounds(20,240,600,30);
		f5.setBounds(20,280,600,30);
		Button b=new Button("CLICK HERE FOR MY PERSONAL DETAILS");
		b.setFont(new Font("Calibri", Font.BOLD, 16));
		b.setBounds(210,70,320,30);
		b.addActionListener(new ActionListener()
		{
			public void actionPerformed(ActionEvent e)
			{
				f1.setText("FULL NAME: Mahananda,");
	f2.setText("FATHER NAME: ANAND,  MOTHER NAME: SUMA,  AGE: 20,");
				f3.setText("ROLL NO: 1234, COLLEGE NAME: AIGS,");
		f4.setText("NATIONALITY: INDIAN, CONTACT NO: 9876543210,");
			f5.setText("ADDRESS: 7th cross, Ganapathinagar, BENGALURU");
			}
		});
		f.add(b);
		f.add(l);
		f.add(f1);
```

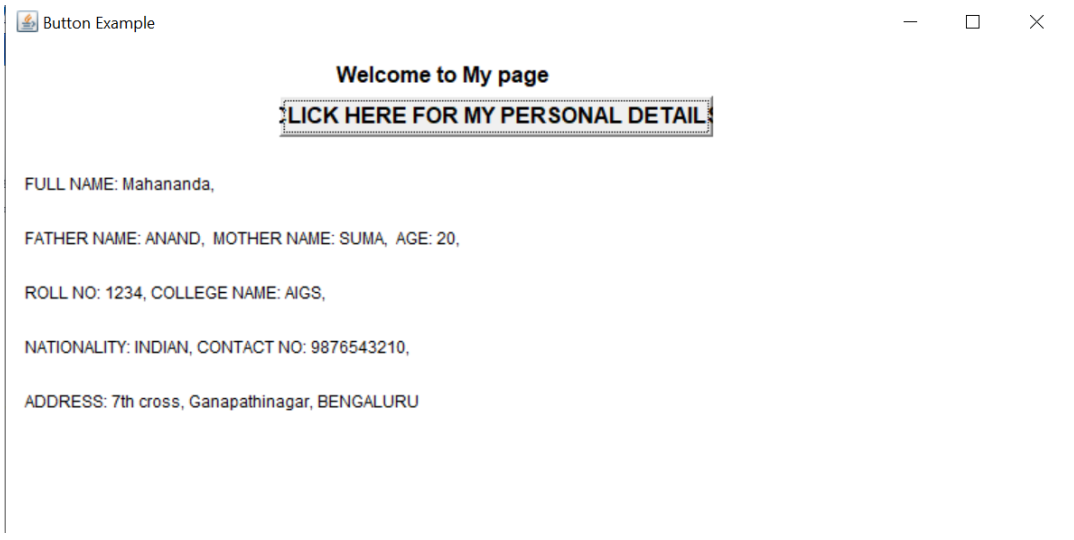
```
            f.add(f2);
            f.add(f3);
            f.add(f4);
            f.add(f5);
            f.setSize(800,800);
            f.setLayout(null);
            f.setVisible(true);
        }
}
```

Program Output:

Compile: javac PersonalDetails.java

Run: java PersonalDetails





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

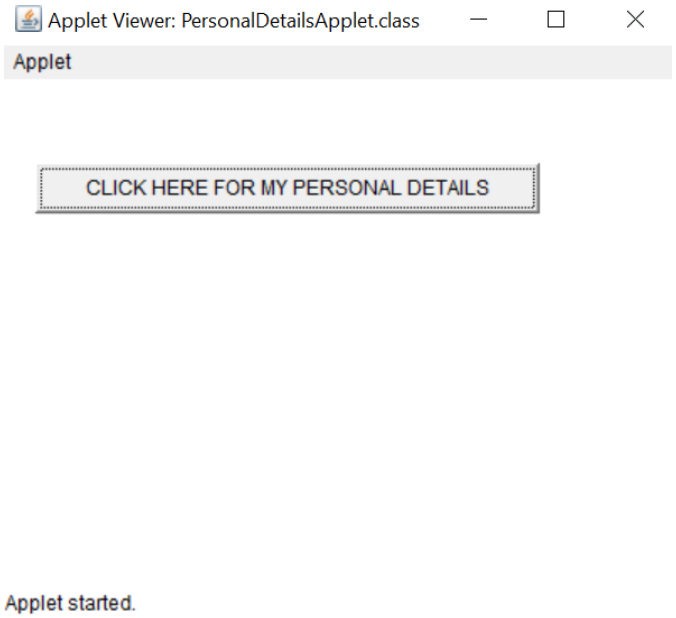
```
import java.awt.*;
import java.applet.*;
import java.awt.event.*;

public class PersonalDetailsApplet extends Applet implements ActionListener
{
        String s1=" ",s2=" ",s3=" ",s4=" ",s5=" ";
        public void init()
        {
```

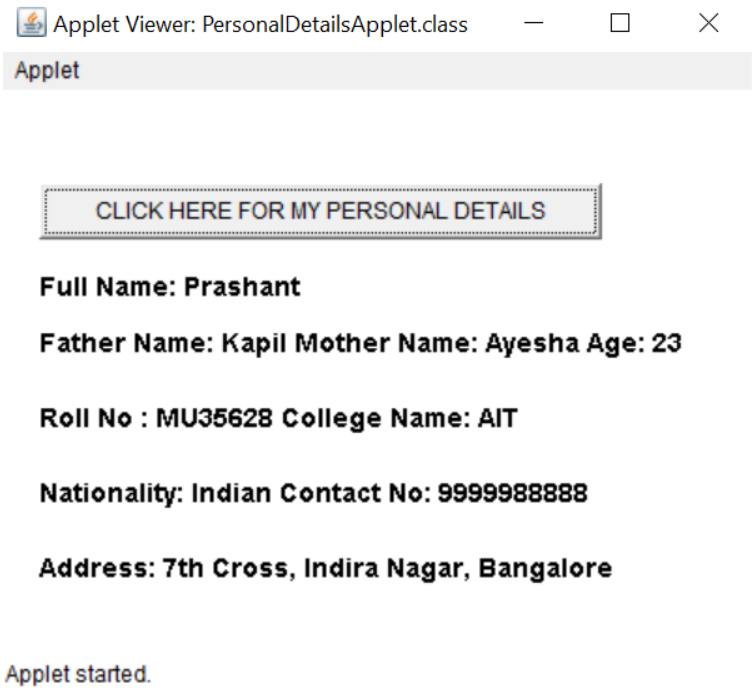
```
		setLayout(null);
		setSize(400, 300);
		Button btn = new Button("CLICK HERE FOR MY PERSONAL DETAILS");
		add(btn);
		btn.setBounds(20, 50, 300, 30);
		btn.addActionListener(this);
	}
	public void actionPerformed(ActionEvent e)
	{
		s1= "Full Name: Prashant";
		s2= "Father Name: Kapil Mother Name: Ayesha Age: 23";
		s3 = "Roll No : MU35628 College Name: AIT";
		s4= "Nationality: Indian Contact No: 9999988888";
		s5 = "Address: 7th Cross, Indira Nagar, Bangalore";
		repaint();
	}
	public void paint(Graphics g)
	{
		g.setFont(new Font("Times Roman", Font. BOLD, 14));
		g.drawString(s1, 20, 110);
		g.drawString(s2, 20, 140);
		g.drawString(s3, 20, 180);
		g.drawString(s4, 20, 220);
		g.drawString(s5, 20, 260);
	}
}

/*
<applet code="PersonalDetailsApplet.class" height=400 width=400> </applet>
*/
```

Program Output:

Compile: javac PersonalDetailsApplet.java

Run: appletviewer PersonalDetailsApplet.java





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

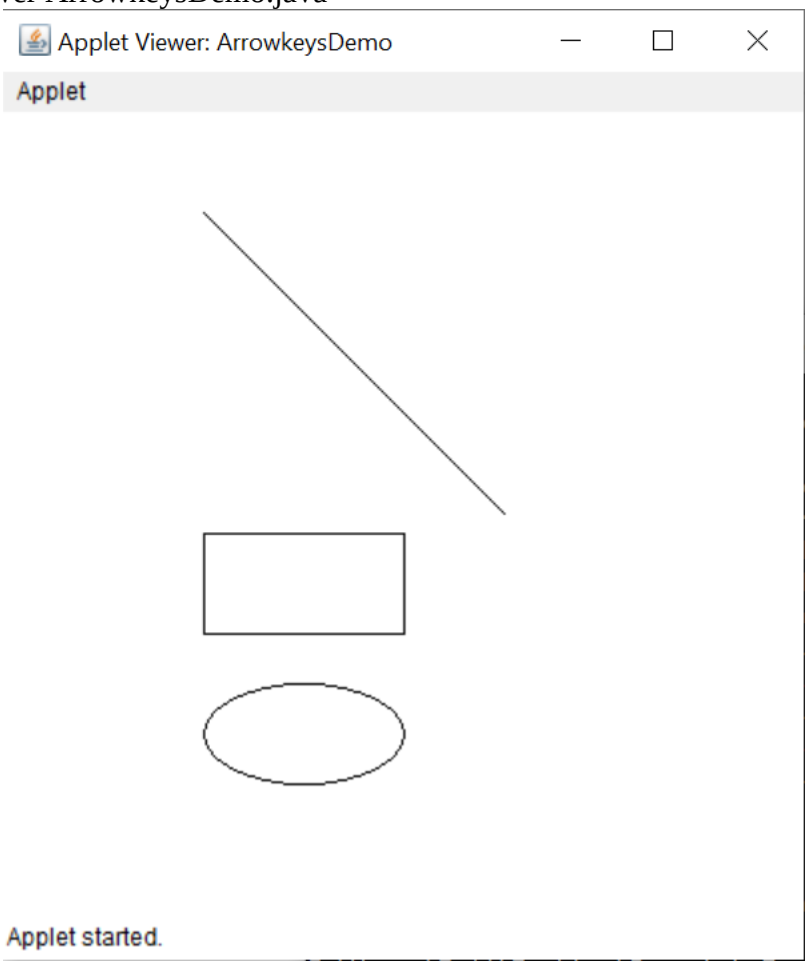
```
import java.applet.*;
import java.awt.*;
import java.awt.event.*;

/*
<applet code="ArrowkeysDemo" Width=400 height=400>
</applet>
*/

public class ArrowkeysDemo 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();
		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);
        }
}
```

Program Output:

Compile: javac ArrowkeysDemo.java

Run: appletviewer ArrowkeysDemo.java



21. Write a java 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.

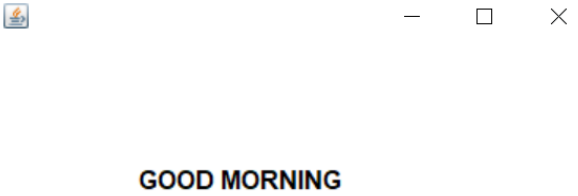
```
import java.awt.*;
import java.awt.event.*;

public class KeysDemo extends Frame implements KeyListener
{
	Label lbl;
	KeysDemo()
	{
		addKeyListener(this);
		requestFocus();
		lbl = new Label();
		lbl.setBounds (100, 100, 200, 40);
		lbl.setFont(new Font("Calibri", Font. BOLD, 16));
		add(lbl);
		setSize(400, 400);
		setLayout(null);
		setVisible(true);
	}
	public void keyPressed(KeyEvent e)
	{
		if (e.getKeyChar() == 'M' || e.getKeyChar() == 'm')
			lbl.setText("GOOD MORNING");
		else if(e.getKeyChar() == 'A' || e.getKeyChar() == 'a')
			lbl.setText("GOOD AFTERNOON");
		else if(e.getKeyChar() == 'E' || e.getKeyChar() == 'e')
			lbl.setText("GOOD EVENING");
		else if(e.getKeyChar() == 'N' || e.getKeyChar() == 'n')
			lbl.setText("GOOD NIGHT");
	}
	public void keyReleased(KeyEvent e)
	{
	}
	public void keyTyped(KeyEvent e)
	{
	}
	public static void main(String[] args)
	{
		new KeysDemo();
	}
}
```

Program Output:

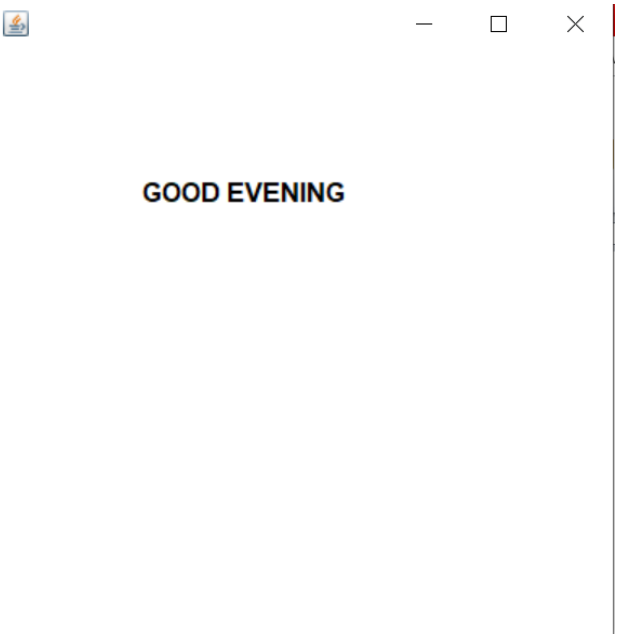
Compile: javac **KeysDemo**.java

Run: java **KeysDemo**

Press m



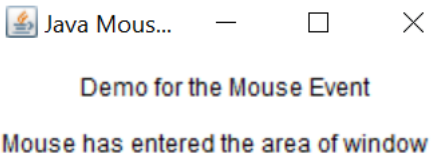
Press E



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

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

public class MouseEventsDemo implements MouseListener
{
	Label lbl1,lbl2;
	Frame fr;
	String s;
	MouseEventsDemo()
	{
		fr = new Frame("Java Mouse Listener Example");
		lbl1 = new Label("Demo for the Mouse Event", Label.CENTER);
		lbl2 = new Label();
		fr.setLayout(new FlowLayout());
		fr.add(lbl1);
		fr.add(lbl2);
		fr.addMouseListener(this);
		fr.setSize(250, 250);
		fr.setVisible(true);
	}
	public void mouseClicked(MouseEvent ev)
	{
		lbl2.setText("Mouse Button Clicked");
		fr.setVisible(true);
	}
	public void mouseEntered(MouseEvent ev)
	{
		lbl2.setText("Mouse has entered the area of window");
		fr.setVisible(true);
	}
	public void mouseExited(MouseEvent ev)
	{
		lbl2.setText("Mouse has left the area of window");
		fr.setVisible(true);
	}
	public void mousePressed(MouseEvent ev)
	{
		lbl2.setText("Mouse button is being pressed");
		fr.setVisible(true);
	}
	public void mouseReleased(MouseEvent ev)
	{
		lbl2.setText(" Mouse Released");
		fr.setVisible(true);
	}
	public static void main(String args[])
	{
		new MouseEventsDemo();
	}
}
```

Program Output:
Compile: javac MouseEventsDemo.java
Run: java MouseEventsDemo



23. Write a program to create menu bar and pull-down menus

```
import java.awt.*;
public class MenuBarDemo
{
	MenuBarDemo()
	{
		Frame fr = new Frame("MenuBarDemo");
		MenuBar mb = new MenuBar();
		Menu fileMenu = new Menu("File");
		Menu editMenu = new Menu("Edit");
		Menu viewMenu = new Menu("View");
		mb.add(fileMenu);
		mb.add(editMenu);
		mb.add(viewMenu);
		MenuItem a1 = new MenuItem("New");
		MenuItem a2 = new MenuItem("Open");
		MenuItem a3 = new MenuItem("Save");
		MenuItem b1 = new MenuItem("Copy");
		MenuItem b2 = new MenuItem("Find");
		MenuItem c1 = new MenuItem("Show");
		fileMenu.add(a1);
		fileMenu.add(a2);
		fileMenu.add(a3);
		editMenu.add(b1);
		editMenu.add(b2);
		viewMenu.add(c1);
		fr.setMenuBar (mb);
		fr.setSize(300, 300);
		fr.setLayout(null);
		fr.setVisible(true);
	}
	public static void main(String args[])
	{
		new MenuBarDemo();
	}
}
```

Program Output:

Compile: javac MenuBarDemo.java

Run: java MenuBarDemo