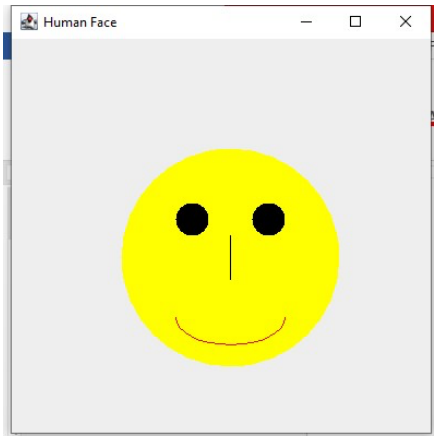
Exp-13

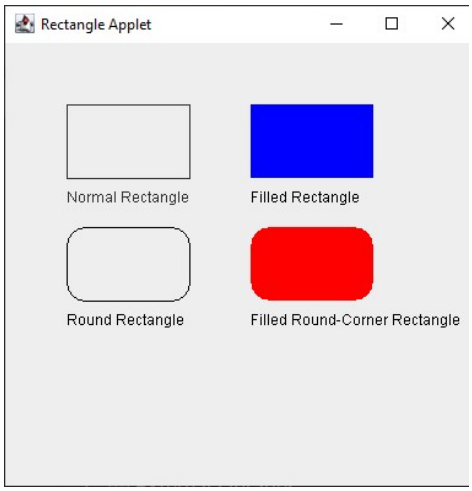
```
//Sayyad Mohamed Samar
//231P082,32
//Write a program to display Human Face using applet.
import javax.swing.*; import
java.awt.*;

public class HumanFaceFrame extends JPanel {

   @Override     public void
paintComponent(Graphics g) {
super.paintComponent(g);

      // Set the color for the face
g.setColor(Color.YELLOW);

      // Draw the face (Oval)
      g.fillOval(100, 100, 200, 200); // x, y, width, height

      // Set the color for the eyes
g.setColor(Color.BLACK);

      // Draw the eyes (Ovals)
      g.fillOval(150, 150, 30, 30); // Left eye
      g.fillOval(220, 150, 30, 30); // Right eye

      // Draw the nose (Line)
      g.drawLine(200, 180, 200, 220); // Nose

      // Set the color for the mouth
g.setColor(Color.RED);

      // Draw the mouth (Arc)
      g.drawArc(150, 230, 100, 50, 0, -180); // x, y, width, height, startAngle, arcAngle
   }

   public static void main(String[] args) {
      // Create a frame to display the face        JFrame frame =
new JFrame("Human Face");
frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frame.setSize(400, 400);
```

```
        // Create an instance of the JPanel subclass (where the face is drawn)
HumanFaceFrame facePanel = new HumanFaceFrame();

        // Add the panel to the frame
        frame.add(facePanel);

        // Make the frame visible
frame.setVisible(true);
    }
}
```

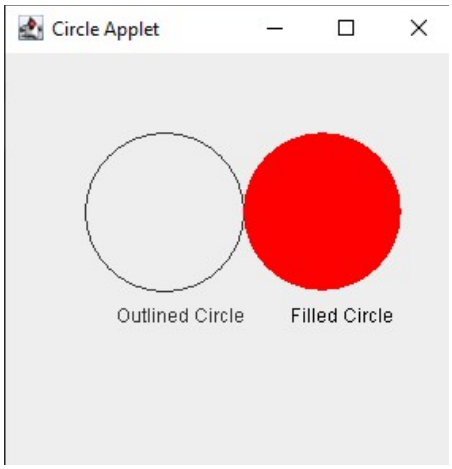



```
//Sayyad Mohamed Samar
//231P082,32
//WAP:Write an applet to all four types of rectangle (normal rectangle, filled rectangle,
round rectangle, round corner rectangle and filled round corner rectangle).
import java.awt.*; import
javax.swing.*; import
java.applet.Applet;

public class RectangleApplet extends Applet {

    public void paint(Graphics g) {
// Normal Rectangle (Outlined)
        g.drawRect(50, 50, 100, 60);  // x, y, width, height
        g.drawString("Normal Rectangle", 50, 130);  // Label

        // Filled Rectangle
        g.setColor(Color.BLUE);  // Set color to blue
        g.fillRect(200, 50, 100, 60);  // x, y, width, height
        g.setColor(Color.BLACK);  // Reset color to black
        g.drawString("Filled Rectangle", 200, 130);  // Label
```

```
        // Round Rectangle (Outlined)
        g.drawRoundRect(50, 150, 100, 60, 30, 30);  // x, y, width, height, arcWidth,
arcHeight
        g.drawString("Round Rectangle", 50, 230);  // Label

        // Filled Round-Corner Rectangle
        g.setColor(Color.RED);  // Set color to red
        g.fillRoundRect(200, 150, 100, 60, 30, 30);  // x, y, width, height, arcWidth, arcHeight
        g.setColor(Color.BLACK);  // Reset color to black
        g.drawString("Filled Round-Corner Rectangle", 200, 230);  // Label
    }

    // Main method to run applet as a Java application
    public static void main(String[] args) {
        JFrame frame = new JFrame("Rectangle Applet");
        RectangleApplet applet = new RectangleApplet();

        // Initialize the applet (same as if it were run in a browser)
applet.init();
        applet.start();

        // Add the applet to the frame
frame.add(applet);        frame.setSize(400,
400);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frame.setVisible(true);
    }
}
```



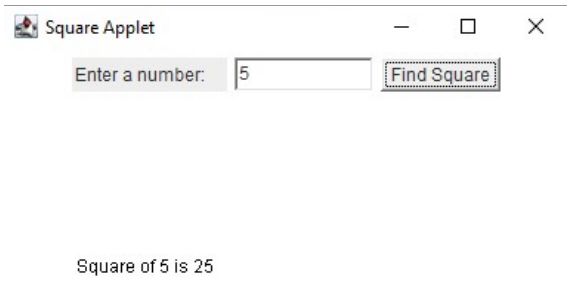
```
//Sayyad Mohamed Samar
//231P082,32
//Write a program to display circle and filled circle using Applet
import java.awt.*; import javax.swing.*;
import java.applet.Applet;

public class CircleApplet extends Applet {

   public void paint(Graphics g) {
      // Outlined Circle
      g.drawOval(50, 50, 100, 100);  // x, y, width, height
      g.drawString("Outlined Circle", 70, 170);  // Label

      // Filled Circle
      g.setColor(Color.RED);  // Set color to red
      g.fillOval(150, 50, 100, 100);  // x, y, width, height
      g.setColor(Color.BLACK);  // Reset color to black
      g.drawString("Filled Circle", 180, 170);  // Label
   }

   public static void main(String[] args) {
JFrame frame = new JFrame("Circle Applet");
      CircleApplet applet = new CircleApplet();

      // Initialize the applet (same as if it were run in a browser)
applet.init();
      applet.start();

      // Add the applet to the frame
frame.add(applet);        frame.setSize(300,
300);
      frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
      frame.setVisible(true);
   }
}
```



Exp-14
//Sayyad Mohamed Samar
//231P082,32
//Write a program to find square of a
given number using applet. import
java.awt.*; import java.awt.event.*;
import javax.swing.*;

```
public class SquareApplet extends JApplet implements ActionListener {
   // Declaring components
private Label label;     private
TextField inputField;     private
Button squareButton;
   private String result = "";

   @Override
   public void init() {
      // Setting layout and adding components
setLayout(new FlowLayout());

      label = new Label("Enter a number: ");
      add(label);

      inputField = new TextField(10);
      add(inputField);

      squareButton = new Button("Find Square");
      add(squareButton);
```

```
        // Adding action listener to the button
squareButton.addActionListener(this);
    }

    // Action performed when the button is clicked
    @Override
    public void actionPerformed(ActionEvent e) {
try {
            // Get the input from the text field and calculate the square
int number = Integer.parseInt(inputField.getText());          int square
= number * number;
            result = "Square of " + number + " is " + square;
        } catch (NumberFormatException ex) {
            // Handle invalid input
            result = "Please enter a valid number.";
        }

        // Repaint the applet to display the result
        repaint();
    }

    @Override
    public void paint(Graphics g) {
        // Display the result
        g.drawString(result, 50, 150);
    }

    public static void main(String[] args) {
// Create a JFrame to hold the applet
        JFrame frame = new JFrame("Square Applet");
        SquareApplet applet = new SquareApplet();

        // Initialize the applet (same as if it were run in a browser)
applet.init();        applet.start();

        // Add the applet to the frame
frame.add(applet);        frame.setSize(400,
200);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setVisible(true);
    }
}
```

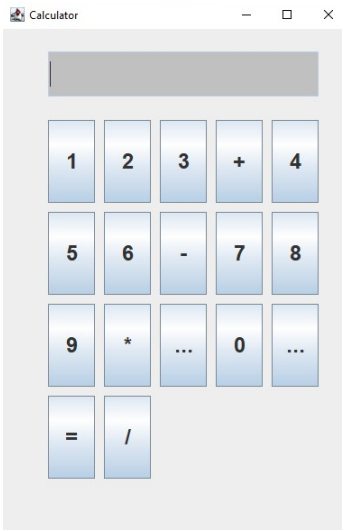



```
//Sayyad Mohamed
Samar //231P082,32
import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent; import
java.awt.event.ActionListener;

public class Calculator implements ActionListener {
   JFrame frame;
   JTextField display;
   JButton[] numberButtons;
   JButton addButton, subButton, mulButton, divButton, equButton, delButton, clrButton;
JPanel panel;

   double num1 = 0, num2 = 0, result = 0;
char operator;

   public Calculator() {
// Frame settings
      frame = new JFrame("Calculator");
frame.setSize(400, 600);
      frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frame.setLayout(null);

      // Display panel         display = new
JTextField();         display.setBounds(50,
25, 300, 50);
      display.setFont(new Font("Arial", Font.BOLD, 24)); // Increased font size
display.setBackground(Color.LIGHT_GRAY); // Background color
display.setEditable(false);
      frame.add(display);

      // Number buttons
      numberButtons = new JButton[10];
      for (int i = 0; i < 10; i++) {
```

```
        numberButtons[i] = new JButton(String.valueOf(i));
numberButtons[i].setFont(new Font("Arial", Font.BOLD, 24));
numberButtons[i].addActionListener(this);
    }

    // Operation buttons
addButton = new JButton("+");
subButton = new JButton("-");
mulButton = new JButton("*");
divButton = new JButton("/");
equButton = new JButton("=");
delButton = new JButton("Delete");
clrButton = new JButton("Clear");

    // Set button fonts
    addButton.setFont(new Font("Arial", Font.BOLD, 24));
subButton.setFont(new Font("Arial", Font.BOLD, 24));      mulButton.setFont(new
Font("Arial", Font.BOLD, 24));      divButton.setFont(new Font("Arial", Font.BOLD,
24));      equButton.setFont(new Font("Arial", Font.BOLD, 24));
delButton.setFont(new Font("Arial", Font.BOLD, 24));
    clrButton.setFont(new Font("Arial", Font.BOLD, 24));

    // Add action listeners to operation buttons
addButton.addActionListener(this);
subButton.addActionListener(this);
mulButton.addActionListener(this);
divButton.addActionListener(this);
equButton.addActionListener(this);
delButton.addActionListener(this);      clrButton.addActionListener(this);

    // Panel settings      panel = new
JPanel();      panel.setBounds(50, 100,
300, 400);
    panel.setLayout(new GridLayout(4, 4, 10, 10)); // Adjusted gaps
panel.add(numberButtons[1]);      panel.add(numberButtons[2]);
panel.add(numberButtons[3]);      panel.add(addButton);
panel.add(numberButtons[4]);      panel.add(numberButtons[5]);
panel.add(numberButtons[6]);
    panel.add(subButton);
panel.add(numberButtons[7]);
panel.add(numberButtons[8]);
panel.add(numberButtons[9]);
panel.add(mulButton);      panel.add(clrButton);
```

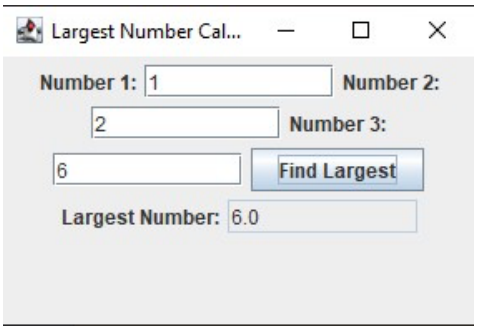
```
panel.add(numberButtons[0]);
panel.add(delButton);
panel.add(equButton);
      panel.add(divButton);

      frame.add(panel);
frame.setVisible(true);
   }

   public void actionPerformed(ActionEvent e) {
      for (int i = 0; i < 10; i++) {           if
(e.getSource() == numberButtons[i]) {
            display.setText(display.getText().concat(String.valueOf(i)));
         }
      }

      // Check if display is not empty before parsing
if (e.getSource() == addButton) {           if
(!display.getText().isEmpty()) {              num1 =
Double.parseDouble(display.getText());
operator = '+';
            display.setText("");
         }
      }
      if (e.getSource() == subButton) {           if
(!display.getText().isEmpty()) {              num1 =
Double.parseDouble(display.getText());
operator = '-';              display.setText("");
         }
      }
      if (e.getSource() == mulButton) {           if
(!display.getText().isEmpty()) {              num1 =
Double.parseDouble(display.getText());
operator = '*';
            display.setText("");
         }
      }
      if (e.getSource() == divButton) {           if
(!display.getText().isEmpty()) {              num1 =
Double.parseDouble(display.getText());
operator = '/';
            display.setText("");
         }
```

```
      }
      if (e.getSource() == equButton) {            if
(!display.getText().isEmpty()) {               num2 =
Double.parseDouble(display.getText());
            switch (operator) {
case '+':
                  result = num1 + num2;
break;                  case '-':
                  result = num1 - num2;
                  break;
case '*':
                  result = num1 * num2;
break;                  case '/':
                  if (num2 != 0) { // Prevent division by zero
result = num1 / num2;
                  } else {
                     display.setText("Error");
                     return;
                  }
break;
            }
            display.setText(String.valueOf(result));
            num1 = result;
         }
      }
      if (e.getSource() == delButton) {
String str = display.getText();
         display.setText(str.length() > 0 ? str.substring(0, str.length() - 1) : "");
      }
      if (e.getSource() == clrButton) {
display.setText("");           num1 =
num2 = result = 0;
      }
   }

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




```
//Sayyad Mohamed Samar
//231P082,32
//Write an applet using ActionEvent and textfield to find largest between three numbers.
import javax.swing.*; import
java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

public class LargestNumberCalculator extends JFrame implements ActionListener {
   private JTextField num1Field, num2Field, num3Field, resultField;
private JButton findLargestButton;

   public LargestNumberCalculator() {
      // Set up the frame
      setTitle("Largest Number Calculator");
      setSize(300, 200);
      setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
      setLayout(new FlowLayout());

      // Create text fields
num1Field = new JTextField(10);
num2Field = new JTextField(10);
num3Field = new JTextField(10);
resultField = new JTextField(10);
resultField.setEditable(false); //
Result field is not editable

      // Create button
```

```
        findLargestButton = new JButton("Find Largest");
findLargestButton.addActionListener(this);

        // Add components to the frame
add(new JLabel("Number 1:"));
add(num1Field);        add(new
JLabel("Number 2:"));
add(num2Field);        add(new
JLabel("Number 3:"));
add(num3Field);
add(findLargestButton);        add(new
JLabel("Largest Number:"));
        add(resultField);
    }

    @Override
    public void actionPerformed(ActionEvent e) {
        // Get numbers from text fields
        try {
            double num1 = Double.parseDouble(num1Field.getText());
double num2 = Double.parseDouble(num2Field.getText());            double
num3 = Double.parseDouble(num3Field.getText());

            // Find the largest number
            double largest = Math.max(num1, Math.max(num2, num3));
            resultField.setText(String.valueOf(largest));
} catch (NumberFormatException ex) {
resultField.setText("Invalid input");
        }
    }

    public static void main(String[] args) {
        // Create the GUI
        SwingUtilities.invokeLater(() -> {
            LargestNumberCalculator calculator = new LargestNumberCalculator();
calculator.setVisible(true);
        });
    }
}
```


Largest Number Cal...
Number 1:
1
Number 2:
2
Number 3:
6
Find Largest
Largest Number:
6.0