```
//Implementing a simple UI based calculator in java using Java Swing
//Abel Jeevan
//01
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;

class Calculate {
    float sum(float a, float b) {
        return a + b;
    }

    float sub(float a, float b) {
        return a - b;
    }

    float div(float a, float b) {
        try {
            return a / b;
        } catch (Exception e) {
            System.out.println("Division by 0 is not possible");
            return Float.POSITIVE_INFINITY;
        }
    }

    float mul(float a, float b) {
        return a * b;
    }
}

class UI implements ActionListener {
    JFrame frame;
    JTextField screen;
    float a, b, result;
    String operator;
    Calculate calc;

    JButton one, two, three, four, five, six, seven, eight, nine, zero, sum, sub, div, mul, equals, clear;

    public UI() {
        frame = new JFrame("Calculator");
        screen = new JTextField(16);
        screen.setHorizontalAlignment(JTextField.RIGHT);
        screen.setEditable(false);
        screen.setPreferredSize(new Dimension(300, 50));

        calc = new Calculate();

        one = new JButton("1");
        two = new JButton("2");
        three = new JButton("3");
        four = new JButton("4");
```

```
five = new JButton("5");
six = new JButton("6");
seven = new JButton("7");
eight = new JButton("8");
nine = new JButton("9");
zero = new JButton("0");

sum = new JButton("+");
sub = new JButton("-");
mul = new JButton("*");
div = new JButton("/");
equals = new JButton("=");
clear = new JButton("C");

one.addActionListener(this);
two.addActionListener(this);
three.addActionListener(this);
four.addActionListener(this);
five.addActionListener(this);
six.addActionListener(this);
seven.addActionListener(this);
eight.addActionListener(this);
nine.addActionListener(this);
zero.addActionListener(this);
sum.addActionListener(this);
sub.addActionListener(this);
mul.addActionListener(this);
div.addActionListener(this);
equals.addActionListener(this);
clear.addActionListener(this);

JPanel panel = new JPanel();
panel.setLayout(new GridLayout(4, 4, 5, 5));
panel.add(seven);
panel.add(eight);
panel.add(nine);
panel.add(div);
panel.add(four);
panel.add(five);
panel.add(six);
panel.add(mul);
panel.add(one);
panel.add(two);
panel.add(three);
panel.add(sub);
panel.add(clear);
panel.add(zero);
panel.add(equals);
panel.add(sum);

frame.setLayout(new BorderLayout());
frame.add(screen, BorderLayout.NORTH);
```

```
        frame.add(panel, BorderLayout.CENTER);

        frame.setSize(300, 400);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setVisible(true);
    }

    public void actionPerformed(ActionEvent e) {
        String command = e.getActionCommand();

        if (command.equals("C")) {
            screen.setText("");
            a = b = result = 0;
            operator = "";
        } else if (command.equals("=")) {
            b = Float.parseFloat(screen.getText());
            switch (operator) {
                case "+":
                    result = calc.sum(a, b);
                    break;
                case "-":
                    result = calc.sub(a, b);
                    break;
                case "*":
                    result = calc.mul(a, b);
                    break;
                case "/":
                    result = calc.div(a, b);
                    break;
            }
            screen.setText(String.valueOf(result));
            a = result;
        } else if ("0123456789".contains(command)) {
            screen.setText(screen.getText() + command);
        } else {
            if (!screen.getText().isEmpty()) {
                a = Float.parseFloat(screen.getText());
                operator = command;
                screen.setText("");
            }
        }
    }
}

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


Calculator
7
8
9
/
4
5
6
*
1
2
3
-
C
0
=
+