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**ASSIGNMENT NO:- 07**

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**PROGRAM:**

```
import javax.script.ScriptEngine;
import javax.script.ScriptEngineManager;
import javax.script.ScriptException;
import javax.swing.*.*;
import java.awt.*.*;
import java.awt.event.*;
```

```
public class DemoApplet extends JFrame implements ActionListener {
    private JTextField displayField;
    private String input;
    private boolean isNewInput;
```

```
    public DemoApplet() {
        input = "";
        isNewInput = true;
```

```
        // Setting up the frame
        setTitle("Calculator");
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setLayout(new BorderLayout());
        setSize(300, 400);
        setLocationRelativeTo(null);
        getContentPane().setBackground(Color.decode("#3498db")); // Set
```

background color

```
        // Display Field
        displayField = new JTextField();
        displayField.setEditable(false);
        displayField.setBackground(Color.decode("#2980b9")); // Set display
        field background color
        displayField.setForeground(Color.WHITE);
```

```
displayField.setHorizontalAlignment(JTextField.RIGHT);  
displayField.setFont(new Font("Arial", Font.BOLD, 20));  
add(displayField, BorderLayout.NORTH);
```

```
// Buttons Panel
```

```
JPanel buttonPanel = new JPanel(new GridLayout(5, 4, 5, 5));
```

```
String[] buttonLabels = {
```

```
    "7", "8", "9", "/",
```

```
    "4", "5", "6", "*",
```

```
    "1", "2", "3", "-",
```

```
    "0", ".", "=", "+"
```

```
};
```

```
for (String label : buttonLabels) {
```

```
    JButton button = new JButton(label);
```

```
    button.addActionListener(this);
```

```
    buttonPanel.add(button);
```

```
    button.setBackground(Color.decode("#2980b9")); // Set button
```

```
background color
```

```
    button.setForeground(Color.WHITE);
```

```
    button.setFont(new Font("Arial", Font.BOLD, 16));
```

```
}
```

```
add(buttonPanel, BorderLayout.CENTER);
```

```
// Clear Button
```

```
JButton clearButton = new JButton("C");
```

```
clearButton.addActionListener(this);
```

```
clearButton.setBackground(Color.decode("#c0392b")); // Set clear
```

```
button background color
```

```
clearButton.setForeground(Color.WHITE);
```

```
clearButton.setFont(new Font("Arial", Font.BOLD, 16));
```

```
add(clearButton, BorderLayout.SOUTH);
```

```
// Frame settings
setVisible(true);
}

@Override
public void actionPerformed(ActionEvent e) {
    String action = e.getActionCommand();

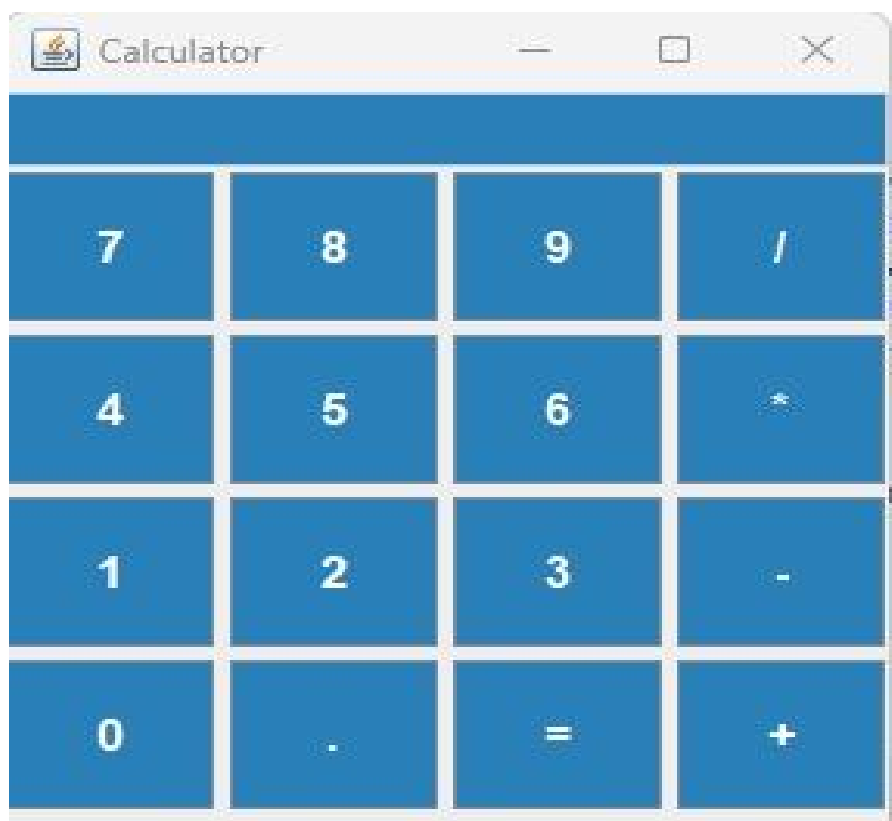
    switch (action) {
        case "=":
            evaluateExpression();
            break;
        case "C":
            input = "";
            isNewInput = true;
            break;
        default:
            input += action;
            isNewInput = false;
            break;
    }

    displayField.setText(input);
}

private void evaluateExpression() {
    if (!isNewInput) {
        try {
            ScriptEngineManager mgr = new ScriptEngineManager();
            ScriptEngine engine = mgr.getEngineByName("JavaScript");
            Object result = engine.eval(input);
            displayField.setText(String.valueOf(result));
            input = String.valueOf(result);
            isNewInput = true;
        } catch (Exception e) {
            displayField.setText(e.getMessage());
        }
    }
}
```

```
        } catch (ScriptException e) {  
            displayField.setText("Error");  
            isNewInput = true;  
        }  
    }  
}  
  
public static void main(String[] args) {  
    SwingUtilities.invokeLater(() -> new DemoApplet());  
}  
}
```

**OUTPUT:**



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