UMS
UNIVERSITI MALAYSIA SABAH

KK14203 OBJECT ORIENTED PROGRAMMING

SEMESTER II

SESSION 2019/2020

ASSIGNMENT 2

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a. Java Code

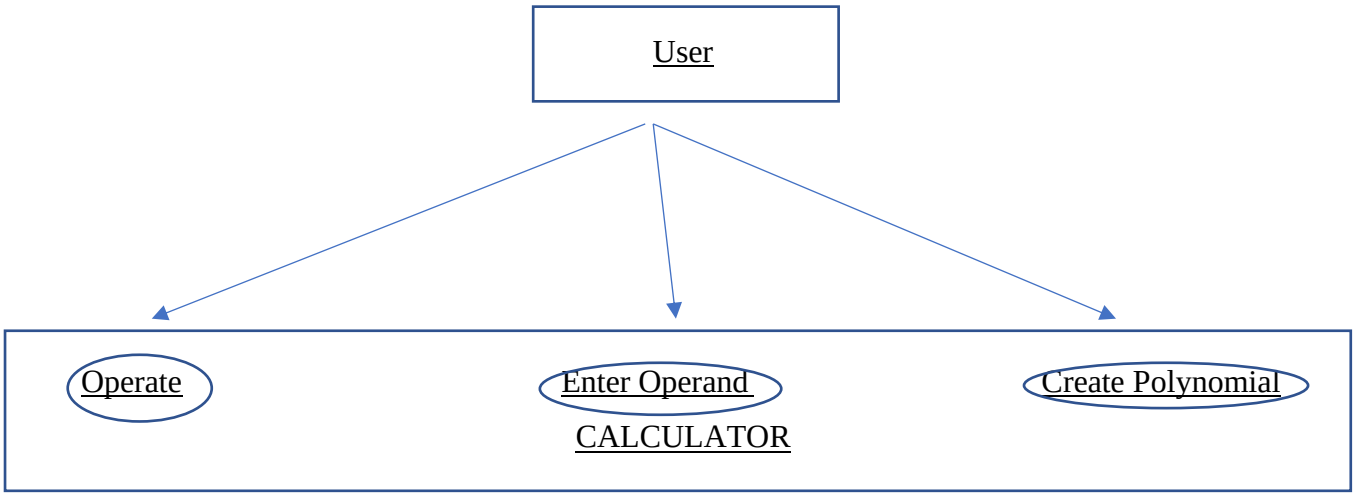
```
package Calculation;


public class Calculator extends javax.swing.JFrame {

    double firstnum ;
    double secondnum ;
    double result ;
    String operations ;

    public Calculator() {
        initComponents();
}

private void jBtn2ActionPerformed(java.awt.event.ActionEvent evt) {
        String Enternumber = jtxtDisplay.getText() + jBtn2.getText();
        jtxtDisplay.setText(Enternumber);
    }

    private void jBtn4ActionPerformed(java.awt.event.ActionEvent evt) {
        String Enternumber = jtxtDisplay.getText() + jBtn4.getText();
        jtxtDisplay.setText(Enternumber);
    }

    private void jBtn5ActionPerformed(java.awt.event.ActionEvent evt) {
        String Enternumber = jtxtDisplay.getText() + jBtn5.getText();
        jtxtDisplay.setText(Enternumber);       // TODO add your handling code here:
    }

    private void jBtn7ActionPerformed(java.awt.event.ActionEvent evt) {
        String Enternumber = jtxtDisplay.getText() + jBtn7.getText();
        jtxtDisplay.setText(Enternumber);
    }

    private void jBtn6ActionPerformed(java.awt.event.ActionEvent evt) {
        String Enternumber = jtxtDisplay.getText() + jBtn6.getText();
        jtxtDisplay.setText(Enternumber);
    }

    private void jBtn0ActionPerformed(java.awt.event.ActionEvent evt) {
        String Enternumber = jtxtDisplay.getText() + jBtn0.getText();
        jtxtDisplay.setText(Enternumber);
    }

    private void btnplusActionPerformed(java.awt.event.ActionEvent evt) {
```

```
    firstnum = Double.parseDouble(jtxtDisplay.getText());
    jtxtDisplay.setText("");
    operations = "+";
}

private void btndivisionActionPerformed(java.awt.event.ActionEvent evt) {
    firstnum = Double.parseDouble(jtxtDisplay.getText());
    jtxtDisplay.setText("");
    operations = "/";        // TODO add your handling code here:
}

private void btnmultiplyActionPerformed(java.awt.event.ActionEvent evt) {
    firstnum = Double.parseDouble(jtxtDisplay.getText());
    jtxtDisplay.setText("");
    operations = "*";
}

private void btnsubtractActionPerformed(java.awt.event.ActionEvent evt) {
    firstnum = Double.parseDouble(jtxtDisplay.getText());
    jtxtDisplay.setText("");
    operations = "-";
}

private void btnclearActionPerformed(java.awt.event.ActionEvent evt) {
    firstnum = Double.parseDouble(jtxtDisplay.getText());
    jtxtDisplay.setText("");
    operations = "=";
}

private void jBtn18ActionPerformed(java.awt.event.ActionEvent evt) {

    String answer;
    secondnum =  Double.parseDouble (jtxtDisplay.getText());
    if ( operations == "+")
    {
        result = firstnum + secondnum;
        answer = String.format("%.0f",result);
        jtxtDisplay.setText (answer);

    }
    else  if ( operations == "-")
    {
        result = firstnum - secondnum;
        answer = String.format("%.0f",result);
        jtxtDisplay.setText (answer);

    }
    else  if ( operations == "*")
    {
```

```
            result = firstnum * secondnum;
            answer = String.format("%.0f",result);
            jtxtDisplay.setText (answer);

        }
        else  if ( operations == "/")
        {
            result = firstnum / secondnum;
            answer = String.format("%.0f",result);
            jtxtDisplay.setText (answer);

        }


    private void jtxtDisplayActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }

    private void jBtn1ActionPerformed(java.awt.event.ActionEvent evt) {

        String Enternumber = jtxtDisplay.getText() + jBtn1.getText();
        jtxtDisplay.setText(Enternumber);
    }

    private void jBtn3ActionPerformed(java.awt.event.ActionEvent evt) {
        String Enternumber = jtxtDisplay.getText() + jBtn3.getText();
        jtxtDisplay.setText(Enternumber);
    }

    private void jBtn8ActionPerformed(java.awt.event.ActionEvent evt) {
        String Enternumber = jtxtDisplay.getText() + jBtn8.getText();
        jtxtDisplay.setText(Enternumber);
    }

    private void jBtn9ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        String Enternumber = jtxtDisplay.getText() + jBtn9.getText();
        jtxtDisplay.setText(Enternumber);
}
```

```
public static void main(String args[]) {

        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new Calculator().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JButton btnclear;
    private javax.swing.JButton btndivision;
    private javax.swing.JButton btnmultiply;
    private javax.swing.JButton btnplus;
    private javax.swing.JButton btnsubtract;
    private javax.swing.JButton jBtn0;
    private javax.swing.JButton jBtn1;
    private javax.swing.JButton jBtn18;
    private javax.swing.JButton jBtn2;
    private javax.swing.JButton jBtn3;
    private javax.swing.JButton jBtn4;
    private javax.swing.JButton jBtn5;
    private javax.swing.JButton jBtn6;
    private javax.swing.JButton jBtn7;
    private javax.swing.JButton jBtn8;
    private javax.swing.JButton jBtn9;
    private javax.swing.JTextField jtxtDisplay;
    // End of variables declaration
}
```

b. Object Oriented Concept implementation



c. Read and write implementation

A reader thread

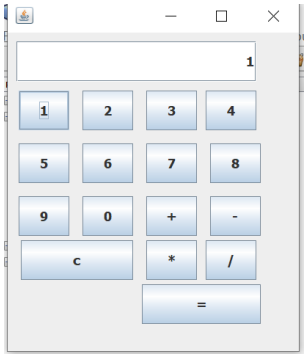
- Read value from input user
- Print out the value of input

A writer thread

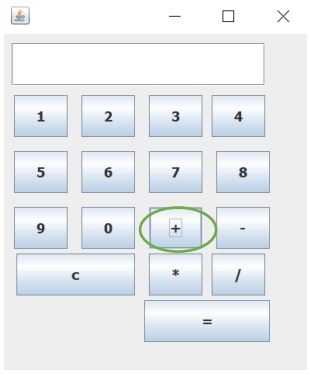
- Calculate the value from user
- Print out the final answer after calculation

Each input “Number” user key in it will calculate the the value and operate with artimatic operation. Output will displays immediately after the calculation.

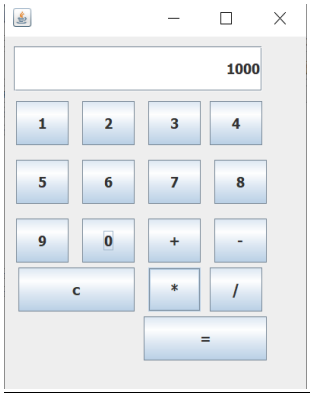
d. User manual (how to use the System)



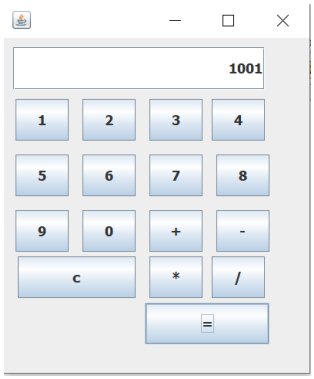
Step 1: Enter first number (example number : 1)



Step 2: Enter Operator “+,-,*,/” (example : +)



Step 3: Enter Second number (example number : 1000)



Step 4: Enter Equal Simbol “=” (output : = 10001)