

Implementation of mycalc

```
import java.awt.*;

import java.awt.event.*;

class MyCalc extends WindowAdapter implements ActionListener{

    Frame f;

    Label l1;

    Button b1,b2,b3,b4,b5,b6,b7,b8,b9,b0;

    Button badd,bsub,bmult,bdiv,bmod,bcalc,bclr,bpts,bneg,bback;

    double xd;

    double num1,num2,check;

    MyCalc(){

        f= new Frame("MY CALCULATOR");

        // INSTANTIATING COMPONENTS

        l1=new Label();

        l1.setBackground(Color.LIGHT_GRAY);

        l1.setBounds(50,50,260,60);


        b1=new Button("1");

        b1.setBounds(50,340,50,50);

        b2=new Button("2");

        b2.setBounds(120,340,50,50);

        b3=new Button("3");

        b3.setBounds(190,340,50,50);

        b4=new Button("4");

        b4.setBounds(50,270,50,50);

        b5=new Button("5");

        b5.setBounds(120,270,50,50);
```

```
b6=new Button("6");
    b6.setBounds(190,270,50,50);
b7=new Button("7");
    b7.setBounds(50,200,50,50);
b8=new Button("8");
    b8.setBounds(120,200,50,50);
b9=new Button("9");
    b9.setBounds(190,200,50,50);
b0=new Button("0");
    b0.setBounds(120,410,50,50);
bneg=new Button("+/-");
    bneg.setBounds(50,410,50,50);
bpts=new Button(".");
    bpts.setBounds(190,410,50,50);
bback=new Button("back");
    bback.setBounds(120,130,50,50);

badd=new Button("+");
    badd.setBounds(260,340,50,50);
bsub=new Button("-");
    bsub.setBounds(260,270,50,50);
bmult=new Button("*");
    bmult.setBounds(260,200,50,50);
bdiv=new Button("/");
    bdiv.setBounds(260,130,50,50);
bmod=new Button("%");
    bmod.setBounds(190,130,50,50);
bcalc=new Button("=");
    bcalc.setBounds(245,410,65,50);
bclr=new Button("CE");
    bclr.setBounds(50,130,65,50);
```

```
b1.addActionListener(this);  
b2.addActionListener(this);  
b3.addActionListener(this);  
b4.addActionListener(this);  
b5.addActionListener(this);  
b6.addActionListener(this);  
b7.addActionListener(this);  
b8.addActionListener(this);  
b9.addActionListener(this);  
b0.addActionListener(this);
```

```
bpts.addActionListener(this);  
bneg.addActionListener(this);  
bback.addActionListener(this);
```

```
badd.addActionListener(this);  
bsub.addActionListener(this);  
bmult.addActionListener(this);  
bdiv.addActionListener(this);  
bmod.addActionListener(this);  
bcalc.addActionListener(this);  
bclr.addActionListener(this);
```

```
f.addWindowListener(this);
```

```
//ADDING TO FRAME
```

```
f.add(l1);
```

```
f.add(b1); f.add(b2); f.add(b3); f.add(b4); f.add(b5);f.add(b6); f.add(b7);  
f.add(b8);f.add(b9);f.add(b0);
```

```
f.add(badd); f.add(bsub); f.add(bmod); f.add(bmult); f.add(bdiv); f.add(bmod);f.add(bcalc);
```

```
f.add(bclr); f.add(bpts);f.add(bneg); f.add(bback);
```

```
f.setSize(360,500);
```

```
f.setLayout(null);
```

```
f.setVisible(true);
```

```
}
```

```
    //FOR CLOSING THE WINDOW
```

```
public void windowClosing(WindowEvent e) {
```

```
    f.dispose();
```

```
}
```

```
public void actionPerformed(ActionEvent e){
```

```
    String z,zt;
```

```
        //NUMBER BUTTON
```

```
if(e.getSource()==b1){
```

```
    zt=l1.getText();
```

```
    z=zt+"1";
```

```
    l1.setText(z);
```

```
}
```

```
if(e.getSource()==b2){
```

```
    zt=l1.getText();
```

```
    z=zt+"2";
```

```
    l1.setText(z);
```

```
}
```

```
if(e.getSource()==b3){
```

```
    zt=l1.getText();
```

```
    z=zt+"3";
```

```
    l1.setText(z);
```

```
}
```

```
if(e.getSource()==b4){  
    zt=l1.getText();  
    z=zt+"4";  
    l1.setText(z);  
}
```

```
if(e.getSource()==b5){  
    zt=l1.getText();  
    z=zt+"5";  
    l1.setText(z);  
}
```

```
if(e.getSource()==b6){  
    zt=l1.getText();  
    z=zt+"6";  
    l1.setText(z);  
}
```

```
if(e.getSource()==b7){  
    zt=l1.getText();  
    z=zt+"7";  
    l1.setText(z);  
}
```

```
if(e.getSource()==b8){  
    zt=l1.getText();  
    z=zt+"8";  
    l1.setText(z);  
}
```

```
if(e.getSource()==b9){  
    zt=l1.getText();  
    z=zt+"9";  
    l1.setText(z);  
}
```

```
if(e.getSource()==b0){
```

```

        zt=l1.getText();
        z=zt+"0";
        l1.setText(z);
    }

    if(e.getSource()==bpts){ //ADD DECIMAL PTS
        zt=l1.getText();
        z=zt+".";
        l1.setText(z);
    }

    if(e.getSource()==bneg){ //FOR NEGATIVE
        zt=l1.getText();
        z="-"+zt;
        l1.setText(z);
    }

    if(e.getSource()==bback){ // FOR BACKSPACE
        zt=l1.getText();
        try{
            z=zt.substring(0, zt.length()-1);
        }catch(StringIndexOutOfBoundsException f){return;}
        l1.setText(z);
    }

    //AIRTHMETIC BUTTON

    if(e.getSource()==badd){ //FOR ADDITION
        try{
            num1=Double.parseDouble(l1.getText());
        }catch(NumberFormatException f){
            l1.setText("Invalid Format");
            return;
        }
    }

```

```
z="";  
l1.setText(z);  
check=1;  
}  
if(e.getSource()==bsub){           //FOR SUBTRACTION  
    try{  
        num1=Double.parseDouble(l1.getText());  
    }catch(NumberFormatException f){  
        l1.setText("Invalid Format");  
        return;  
    }  
    z="";  
    l1.setText(z);  
    check=2;  
}  
if(e.getSource()==bmult){          //FOR MULTIPLICATION  
    try{  
        num1=Double.parseDouble(l1.getText());  
    }catch(NumberFormatException f){  
        l1.setText("Invalid Format");  
        return;  
    }  
    z="";  
    l1.setText(z);  
    check=3;  
}  
if(e.getSource()==bdiv){           //FOR DIVISION  
    try{  
        num1=Double.parseDouble(l1.getText());  
    }catch(NumberFormatException f){  
        l1.setText("Invalid Format");
```

```

        return;
    }
    z="";
    l1.setText(z);
    check=4;
}

if(e.getSource()==bmod){           //FOR MOD/REMAINDER
    try{
        num1=Double.parseDouble(l1.getText());
    }catch(NumberFormatException f){
        l1.setText("Invalid Format");
        return;
    }
    z="";
    l1.setText(z);
    check=5;
}

        //RESULT BUTTON
if(e.getSource()==bcalc){
    try{
        num2=Double.parseDouble(l1.getText());
    }catch(Exception f){
        l1.setText("ENTER NUMBER FIRST ");
        return;
    }
    if(check==1)
        xd =num1+num2;
    if(check==2)
        xd =num1-num2;
    if(check==3)
        xd =num1*num2;

```



```

    if(check==4)
        xd =num1/num2;
    if(check==5)
        xd =num1%num2;
    l1.setText(String.valueOf(xd));
}

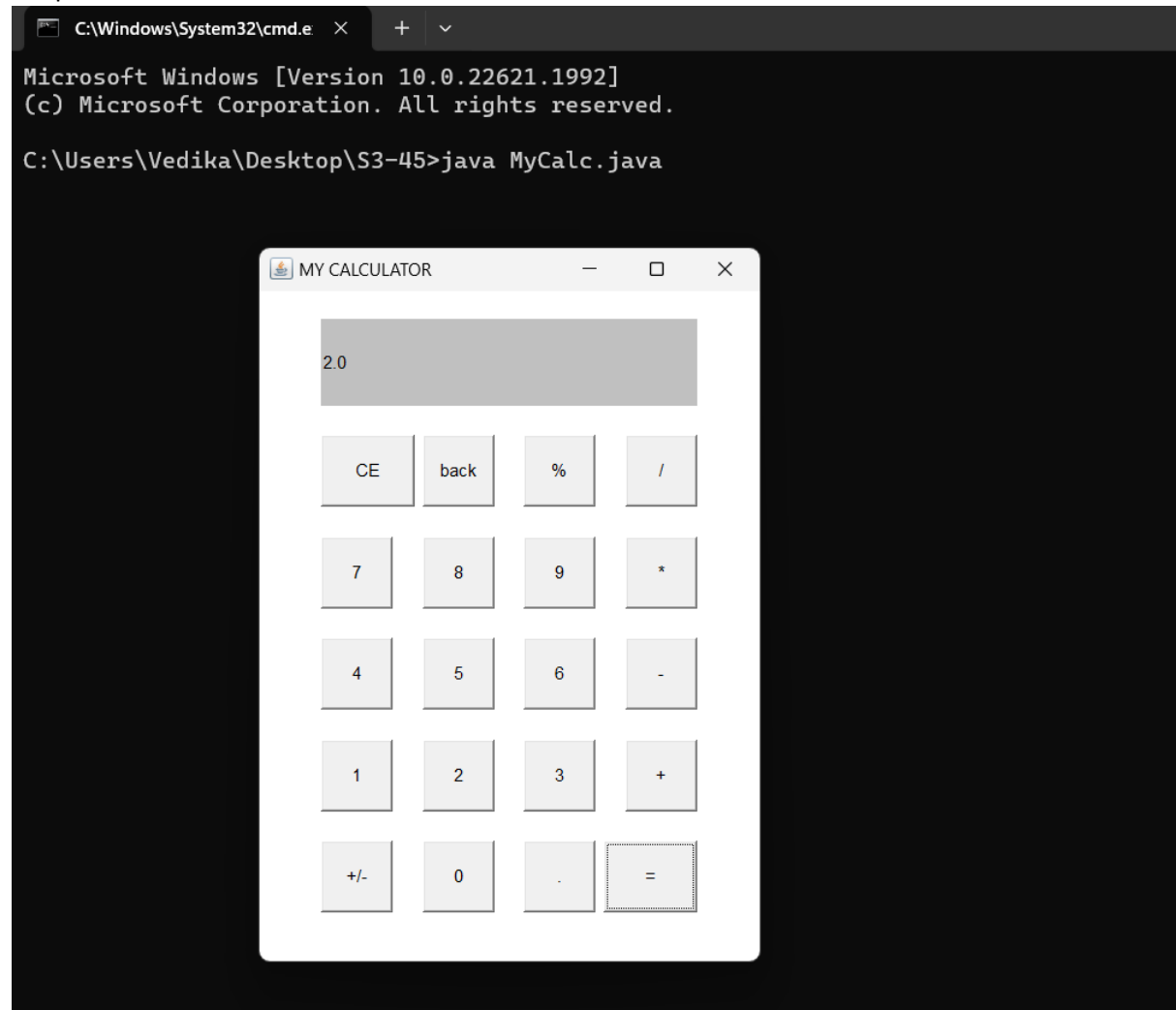
        //FOR CLEARING THE LABEL and Memory
if(e.getSource()==bclr){
    num1=0;
    num2=0;
    check=0;
    xd=0;
    z="";
    l1.setText(z);
}

}

//MAIN METHOD where objects of MyCalc is instantaiated
public static void main(String args[]){
    new MyCalc();
}
}

```

Output:-



The image shows a Windows command prompt window with the title bar "C:\Windows\System32\cmd.e". The text inside the window reads: "Microsoft Windows [Version 10.0.22621.1992] (c) Microsoft Corporation. All rights reserved. C:\Users\Vedika\Desktop\S3-45>java MyCalc.java". Below the command prompt, a Java application window titled "MY CALCULATOR" is displayed. The application has a light gray background and a white title bar. It features a large display area at the top showing the number "2.0". Below the display is a grid of buttons: "CE", "back", "%", and "/" in the first row; "7", "8", "9", and "*" in the second row; "4", "5", "6", and "-" in the third row; "1", "2", "3", and "+" in the fourth row; and "+/-", "0", ".", and "=" in the fifth row. The buttons are arranged in a standard calculator layout.