



KEMENTERIAN
PENDIDIKAN
MALAYSIA



INTEGRATIVE PROGRAMMING AND TECHNOLOGY

NAME	
CLASS	
COURSE	INTEGRATIVE PROGRAMMING AND TECHNOLOGY
TITLE	LAYOUT MANAGER AND EVENT HANDLING(CALCULATOR)
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CODING

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
class Calculator extends JFrame{

    double firstNumber;
    boolean calculate = false;
    char operator;

    //create button and textfield
    JTextField txtDisplay;
    JButton btClear;
    JButton btC;
    JButton btS;
    JButton btAdd;
    JButton btSub;
    JButton btDiv;
    JButton btMul;
    JButton btEqual;
    JButton bt1;
    JButton bt2;
    JButton bt3;
    JButton bt4;
    JButton bt5;
    JButton bt6;
    JButton bt7;
    JButton bt8;
    JButton bt9;
    JButton bt0;

    JPanel pane;

    Calculator(){

        JFrame f = new JFrame("Calculator");
        setTitle("[=]Calculator[=]");
        txtDisplay=new JTextField();
        add(txtDisplay,"North");

        pane=new JPanel();
        pane.setLayout(new GridLayout(6,4));

        //set button 1
        bt1=new JButton("1");
        bt1.setBounds(5,75,95,20);
        bt1.addActionListener(new ActionListener() {
```

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        public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
        if (calculate) {
            txtDisplay.setText("1");
            calculate=false;
        } else {
            txtDisplay.setText(s + "1");
        }
    }
});

```

```

        //set button 2
        bt2=new JButton("2");
        bt2.setBounds(100,75,95,20);
        bt2.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
                if (calculate) {
                    txtDisplay.setText("2");
                    calculate=false;
                } else {
                    txtDisplay.setText(s + "2");
                }
            }
        });

```

```

        //set button 3
        bt3=new JButton("3");
        bt3.setBounds(190,75,95,20);
        bt3.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
                if (calculate) {
                    txtDisplay.setText("3");
                    calculate=false;
                } else {
                    txtDisplay.setText(s + "3");
                }
            }
        });

```

```

        //set button 4
        bt4=new JButton("4");
        bt4.setBounds(5,95,95,20);
        bt4.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
                if (calculate) {

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        txtDisplay.setText("4");
        calculate=false;
    } else {
        txtDisplay.setText(s + "4");
    }
}

});

//set button 5
bt5=new JButton("5");
bt5.setBounds(100,95,95,20);
bt5.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
        if (calculate) {
            txtDisplay.setText("5");
            calculate=false;
        } else {
            txtDisplay.setText(s + "5");
        }
    }
});

//set button 6
bt6=new JButton("6");
bt6.setBounds(190,95,95,20);
bt6.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
        if (calculate) {
            txtDisplay.setText("6");
            calculate=false;
        } else {
            txtDisplay.setText(s + "6");
        }
    }
});

//set button 7
bt7=new JButton("7");
bt7.setBounds(5,115,95,20);
bt7.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
        if (calculate) {
            txtDisplay.setText("7");
            calculate=false;
        } else {

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        txtDisplay.setText(s + "7");
    }
}

});

//set button 8
    bt8=new JButton("8");
    bt8.setBounds(100,115,95,20);
    bt8.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
        if (calculate) {
            txtDisplay.setText("8");
            calculate=false;
        } else {
            txtDisplay.setText(s + "8");
        }
    }
});

//set button 9
    bt9=new JButton("9");
    bt9.setBounds(190,115,95,20);
    bt9.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
        if (calculate) {
            txtDisplay.setText("9");
            calculate=false;
        } else {
            txtDisplay.setText(s + "9");
        }
    }
});

//set button 0
    bt0=new JButton("0");
    bt0.setBounds(5,135,95,20);
    bt0.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
        if (calculate) {
            txtDisplay.setText("0");
            calculate=false;
        } else {
            txtDisplay.setText(s + "0");
        }
    }
}

```

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});

    //set button c
    btClear=new JButton("C");
    btClear.setBounds(120,30,70,20);
    btClear.setForeground(Color.yellow);
    btClear.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
            txtDisplay.setText(" ");
        }
    });

    //set button CE
    btC=new JButton("CE");
    btC.setBounds(120,30,70,20);
    btC.setForeground(Color.yellow);
    btC.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
            txtDisplay.setText(" ");
        }
    });

    //set button +
    btAdd=new JButton("+");
    btAdd.setBounds(5,55,70,20);
    btAdd.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
            String s = txtDisplay.getText();
            firstNumber = Double.parseDouble(s);
            calculate = true;
            operator='+';
        }
    });

    //set button -
    btSub=new JButton("-");
    btSub.setBounds(70,55,70,20);
    btSub.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
            String s = txtDisplay.getText();
            firstNumber = Double.parseDouble(s);
            calculate = true;
            operator='-';
        }
    });

```

```

        }

});

//set button /
    btDiv=new JButton("/");
    btDiv.setBounds(210,55,70,20);
    btDiv.addActionListener(new ActionListener() {
public void actionPerformed(ActionEvent evt) {
    String s = txtDisplay.getText();
    firstNumber = Double.parseDouble(s);
    calculate = true;
    operator='/';

        }

});

//set button *
    btMul=new JButton("*");
    btMul.setBounds(140,55,70,20);
    btMul.addActionListener(new ActionListener() {
public void actionPerformed(ActionEvent evt) {
    String s = txtDisplay.getText();
    firstNumber = Double.parseDouble(s);
    calculate = true;
    operator='*';

        }

});

//set button =
    btEqual=new JButton("=");
    btEqual.setBounds(100,160,95,20);
    btEqual.addActionListener(new ActionListener() {
public void actionPerformed(ActionEvent evt) {
    String s = txtDisplay.getText();
    double secondNumber=Double.parseDouble(s);
    double result=secondNumber;
    switch(operator){
        case '+':
            result=firstNumber+secondNumber;
            break;
        case '-':
            result=firstNumber-secondNumber;
            break;
        case '/':
            result=firstNumber/secondNumber;
            break;
        case '*':

```

```

        result=firstNumber*secondNumber;
        break;
    }

    txtDisplay.setText(""+result);
}

});

//set button backspace
btS=new JButton("Backspace");
btS.setBounds(10,30,100,20);
btS.setForeground(Color.yellow);
btS.addActionListener(new ActionListener() {

    public void actionPerformed(ActionEvent evt) {
String s = txtDisplay.getText();
txtDisplay.setText("");
        for(int i=0;i<s.length()-1;i++)

            txtDisplay.setText(txtDisplay.getText()+s.charAt(i));

    }

});

pane.add(btS);
pane.add(btClear);
pane.add(btC);
pane.add(btMul);
pane.add(btSub);
pane.add(btAdd);
pane.add(btDiv);
pane.add(bt1);
pane.add(bt2);
pane.add(bt3);
pane.add(bt4);
pane.add(bt5);
pane.add(bt6);
pane.add(bt7);
pane.add(bt8);
pane.add(bt9);
pane.add(bt0);
pane.add(btEqual);

add(pane);

}

}

```

```
class DemoFrame{  
    public static void main(String args[]){  
        Calculator c1=new Calculator();  
        c1.pack();  
        c1.show();  
    }  
}
```

OUTPUT

