



KEMENTERIAN
PENDIDIKAN
MALAYSIA



INTEGRATIVE PROGRAMMING AND TECHNOLOGY

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CLASS	KHAS 5
COURSE	INTEGRATIVE PROGRAMMING AND TECHNOLOGY
TITLE	LAYOUT MANAGER AND EVENT HANDLING(CALCULATOR)
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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() {
            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() {

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        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) {
                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

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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 {
            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");
        }
    }
});

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});

// 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");
        }
    }
});

// set button c
btClear = new JButton("C");
btClear.setBounds(120, 30, 70, 2);
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;
    }
});

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        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
bt5 = new JButton("Backspace");
bt5.setBounds(10, 30, 100, 20);

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        bt5.setForeground(Color.yellow);
        bt5.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(bt5);
        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 cl = new Calculator();
        cl.pack();
        cl.show();
    }
}

```



