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一、源代码截图

Debug　MyCalculater.java

Project Explorer　homework

```
package homework;

import java.awt.*;

public class MyCalculater extends JFrame implements ActionListener{
    String result = new String("");
    String str = new String();
    String pre = new String("start");
    JLabel label = new JLabel("0");

    Stack nu = new Stack();
    Stack op = new Stack();

    public void calculate(String btn) {
        if(btn == "1"||btn == "2"||btn == "3"
        ||btn == "4"||btn == "5"||btn == "6"
        ||btn == "7"||btn == "8"||btn == "9"
        ||btn == "0"||btn == "."||btn == "+"||btn == "-"
        ||btn == "*"||btn == "/"||btn == "("||btn == ")"||btn == "="){
            if(btn == "1"||btn == "2"||btn == "3"
            ||btn == "4"||btn == "5"||btn == "6"
            ||btn == "7"||btn == "8"||btn == "9"
            ||btn == "0"||btn == ".") {
                result+=btn;
                str+=btn;
                label.setText(str);
                pre = btn;
            }
            else if(btn == "+"||btn == "-"||btn == "*"||btn == "/"||btn == "("||btn == ")"||btn == "=") {
                if(btn != "=") {
                    str+=btn;
                    label.setText(str);
                }

                if(pre == "1"||pre == "2"||pre == "3"
                        ||pre == "4"||pre == "5"||pre == "6"
                        ||pre == "7"||pre == "8"||pre == "9"
                        ||pre == "0"||pre == ".") {
                    double num = Double.parseDouble(result);
                    nu.push(num);
                    result = "";
                 }
                 pre = btn;

                 if((btn == "("||op.empty())&&btn != "=") {
                     op.push(btn);
                 }else if(btn == ")"&&!op.empty()) {
                     while (true) {

                         String tmp = new String();
                         tmp = (String)op.pop();
                         if(tmp == "(") {
                             break;
                         }
                         double a, b;
                         a = (double)nu.pop();
                         b = (double)nu.pop();
                         if(tmp == "+") {
                             double m = a+b;
                             nu.push(m);
                         }else if(tmp == "-") {
                             double m = b-a;
                             nu.push(m);
                         }else if(tmp == "*") {
                             double m = a*b;
                             nu.push(m);
                         }else if(tmp == "/") {
                             double m = b/a;
                             nu.push(m);
                         }

                     }

                 }else if((btn == "+"||btn == "-"||btn == "*"||btn == "/")&&!op.empty()){
                     String tmp = new String();
                     tmp = (String)op.peek();
```

```
80                  if (btn == "*"||btn == "/") {
81                      if(tmp == "+"||tmp == "-"||tmp == "(") {
82                          op.push(btn);
83                      }else {
84                          tmp = (String)op.pop();
85                          double a, b;
86                          a = (double)nu.pop();
87                          b = (double)nu.pop();
88                          if(tmp == "*") {
89                              double m = a*b;
90                              nu.push(m);
91                          }else {
92                              double m = b/a;
93                              nu.push(m);
94                          }
95                          op.push(btn);
96                      }
97                  }else {
98                      if(tmp == "(") {
99                          op.push(btn);
100                     }else {
101                         tmp = (String)op.pop();
102                         double a, b;
103                         a = (double)nu.pop();
104                         b = (double)nu.pop();
105                         if(tmp == "+") {
106                             double m = a+b;
107                             nu.push(m);
108                         }else if(tmp == "-") {
109                             double m = b-a;
110                             nu.push(m);
111                         }else if(tmp == "*") {
112                             double m = a*b;
113                             nu.push(m);
114                         }else if(tmp == "/") {
115                             double m = b/a;
116                             nu.push(m);
117                         }
118                         op.push(btn);
119                     }
120                 }
121
122             }else if(btn == "="){
123                 while(!op.empty()) {
124                     String tmp = new String();
125                     tmp = (String)op.pop();
126                     double a, b;
127                     a = (double)nu.pop();
128                     b = (double)nu.pop();
129                     if(tmp == "+") {
130                         double m = a+b;
131                         nu.push(m);
132                     }else if(tmp == "-") {
133                         double m = b-a;
134                         nu.push(m);
135                     }else if(tmp == "*") {
136                         double m = a*b;
137                         nu.push(m);
138                     }else if(tmp == "/") {
139                         double m = b/a;
140                         nu.push(m);
141                     }
142                 }
143                 double number = (double)nu.pop();
144                 Double Number = number;
145                 str = Number.toString();
146                 label.setText(str);
147                 str="";
148                 result="";
149
150             }
151
152         }
153
154     }else if(btn == "1/x"){
```

```
            double num2 = Double.parseDouble(result);
            Double Num2 = 1/num2;
            label.setText(Num2.toString());
        }else if(btn == "x^2"){
            double num3 = Double.parseDouble(result);
            Double Num3 = num3*num3;
            label.setText(Num3.toString());

        }else if(btn == "x^(1/2)"){
            double num3 = Double.parseDouble(result);
            Double Num3 = Math.pow(num3, 0.5);
            label.setText(Num3.toString());

        }else if(btn == "C"){
            label.setText("0");
            str = "";
            result = "";
            pre = "start";
            while(!nu.empty()) {
                nu.pop();
            }
            while(!op.empty()) {
                op.pop();
            }

        }else if(btn == "Delete"){
            if(op.empty()||(String)op.peek()=="(") {
                String tmp = new String();
                tmp = result;
                result = "";
                for (int i = 0; i < tmp.length()-1; i++) {
                    result+=tmp.charAt(i);
                }
                str = result;
                if(str == "") {
                    label.setText("0");
                }else {
                    label.setText(str);
                }
            }
        }
    }else if(btn == "+/-"){
        double num3 = Double.parseDouble(result);
        Double Num3 = -num3;
        label.setText(Num3.toString());
        result = Num3.toString();
    }
}

@Override
public void actionPerformed(ActionEvent e) {
    String btn = e.getActionCommand();
    calculate(btn);
}

public MyCalculater(int x, int y, int w, int h, Color color) {
    super("Calculater");

    label.setBackground(new Color(245,255,255));
    label.setFont(new Font(null, Font.PLAIN, 60));

    JButton []b = new JButton[11];//grey button
    for (int i = 0; i < 11; i++) {
        b[i] = new JButton();
        b[i].setBackground(new Color(242,242,242));
        b[i].setFont(new Font(null, Font.PLAIN, 25));
    }
    b[1].setText("(");b[2].setText(")");
    b[3].setText("C");b[4].setText("Delete");
    b[5].setText("1/x");b[6].setText("x^2");
    b[7].setText("x^(1/2)");b[8].setText("/");
    b[9].setText("*");b[10].setText("-");
    b[0].setText("+");
    for (int i = 0; i < 11; i++) {
        b[i].addActionListener(this);
    }
    JButton []bb = new JButton[13];//white button
```

```
230         JButton []bb = new JButton[13];//white button
231         for (int i = 1; i < bb.length; i++) {
232             bb[i] = new JButton();
233             bb[i].setBackground(new Color(255,255,255));
234             bb[i].setFont(new Font(null, Font.BOLD, 25));
235         }
236         bb[0] = new JButton();
237         bb[0].setText("=");
238         bb[0].setBackground(new Color(17, 119, 221));
239         bb[0].setForeground(new Color(255,255,255));
240         bb[0].setFont(new Font(null,Font.PLAIN,35));
241         bb[1].setText("7");bb[2].setText("8");bb[3].setText("9");
242         bb[4].setText("4");bb[5].setText("5");bb[6].setText("6");
243         bb[7].setText("1");bb[8].setText("2");bb[9].setText("3");
244         bb[10].setText("+/-");bb[11].setText("0");bb[12].setText(".");
245         for (int i = 0; i < 13; i++) {
246             bb[i].addActionListener(this);
247         }
248
249
250         setLayout(new BorderLayout());//JFrame layout
251
252         JPanel panel1 = new JPanel();//panel1
253         panel1.setBackground(new Color(245,255,255));
254         panel1.setPreferredSize(new Dimension(300, 175));
255         panel1.setLayout(new BorderLayout());//p1layout
256
257         panel1.add(label, BorderLayout.CENTER);
258         add(panel1,BorderLayout.NORTH);
259
260         JPanel panel2 = new JPanel();//panel2
261         panel2.setBackground(new Color(255,255,255));
262         panel2.setLayout(new GridLayout(6, 4, 3, 3));//p2layout
263         for (int i = 1; i <= 8; i++) {
264             panel2.add(b[i]);
265         }
266         panel2.add(bb[1]);panel2.add(bb[2]);panel2.add(bb[3]);panel2.add(b[9]);
267         panel2.add(bb[4]);panel2.add(bb[5]);panel2.add(bb[6]);panel2.add(b[10]);
268         panel2.add(bb[7]);panel2.add(bb[8]);panel2.add(bb[9]);panel2.add(b[0]);
269         panel2.add(bb[10]);panel2.add(bb[11]);panel2.add(bb[12]);panel2.add(bb[0]);
270         add(panel2,BorderLayout.CENTER);
271
272
273         setBounds(x, y, w, h);
274         setBackground(color);
275         setVisible(true);
276         setJMenuBar(null);
277         setDefaultCloseOperation(EXIT_ON_CLOSE);
278     }
279
280     public static void main(String[] args) {
281         MyCalculater frame = new MyCalculater(400, 75, 700, 800, null);
282     }
283
284 }
285
```

Project Explorer

homework

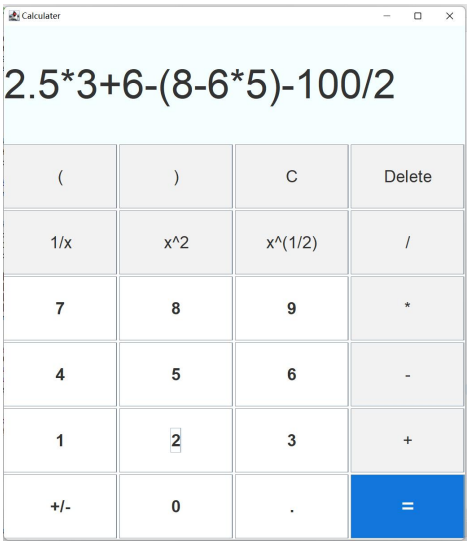
Project Explorer

homework

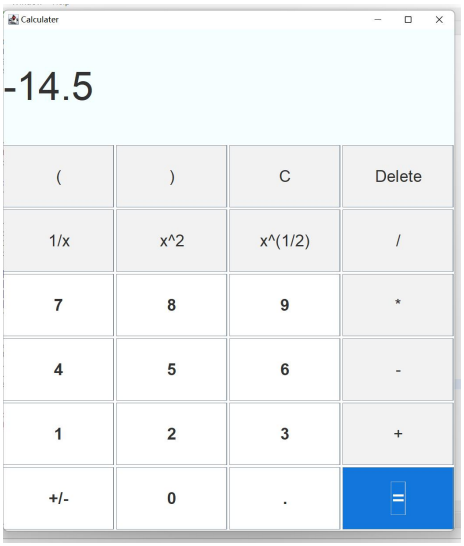
二、运行结果截图

（一）计算功能：

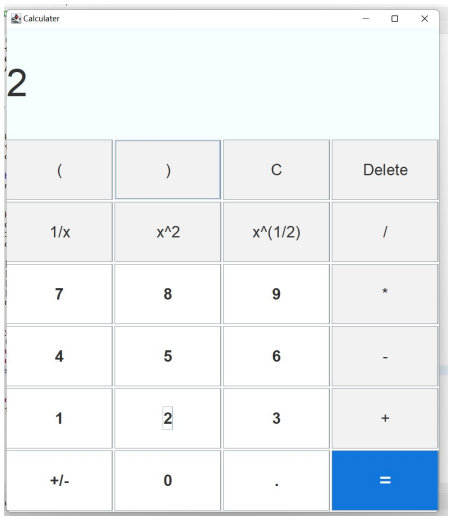
计算式：

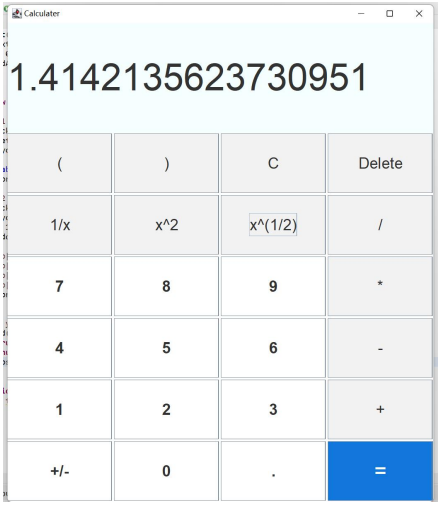


计算结果：

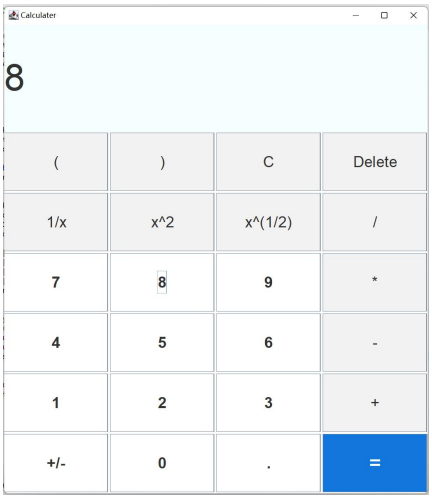


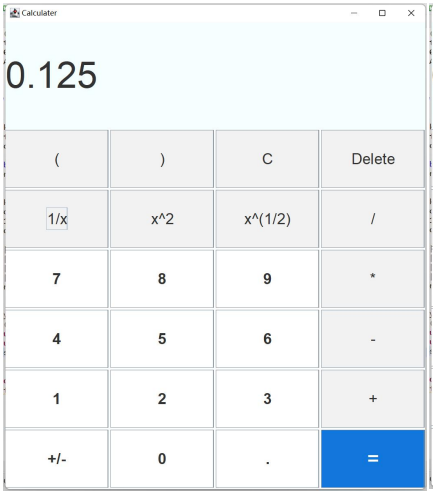
（二）开根号（以 2 为例）

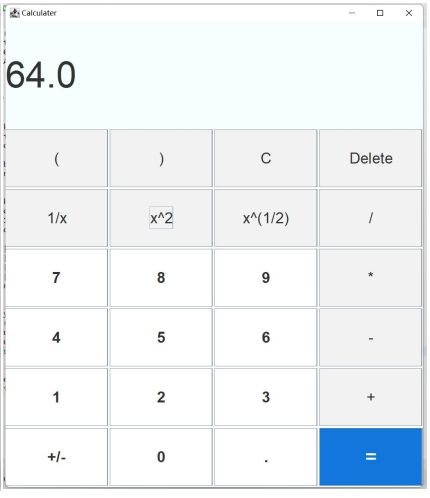




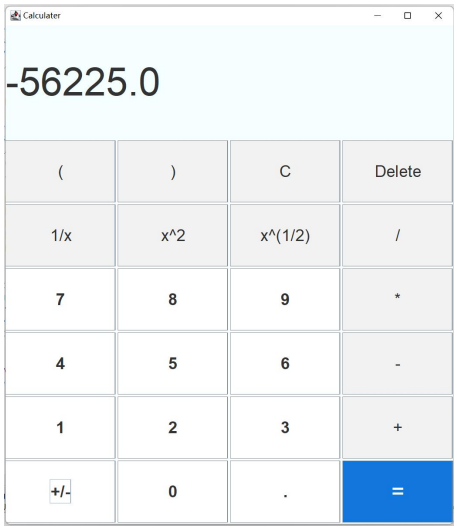
（三）取倒数及平方（以 8 为例）

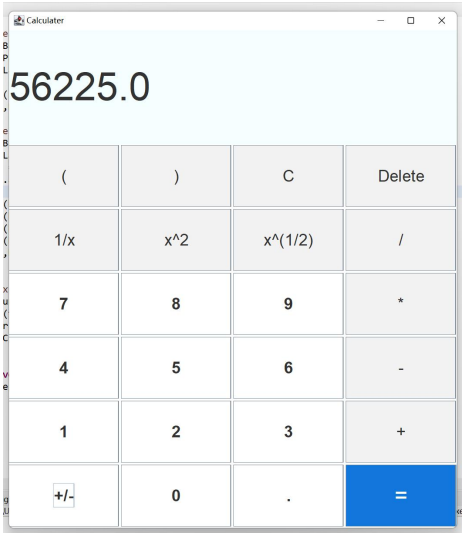




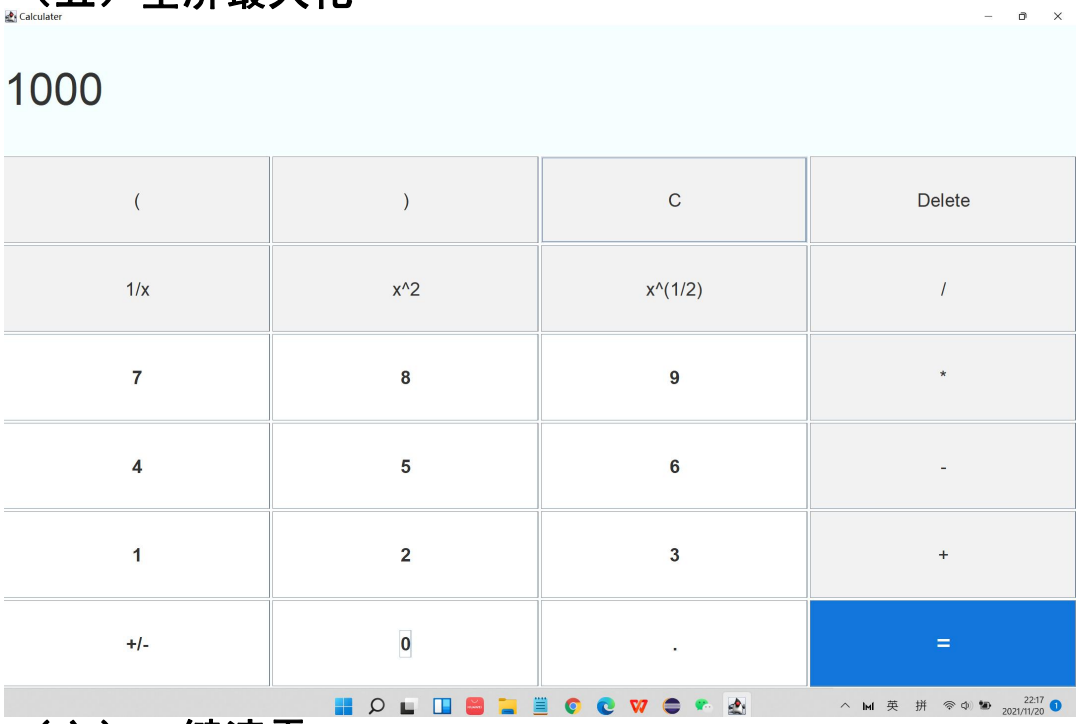
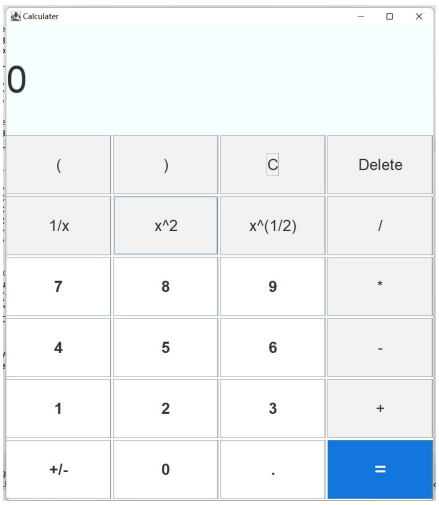


（四）正负转换键+/-





（五）全屏最大化



（六）C 键清零