

```
1 /**
2  * The main part of the calculator performing the
3  * arithmetic logic of the calculations.
4  * @author Hacker T. Largebrain
5  * @version 1.0
6  */
7 public class CalcEngine
8 {
9     // The value in the display.
10    private int displayValue;
11    // The previous operator typed (+ or -).
12    private char previousOperator;
13    // The left operand to previousOperator.
14    private int leftOperand;
15
16    /**
17     * Create a CalcEngine instance.
18     */
19    public CalcEngine()
20    {
21        displayValue = 0;
22        previousOperator = ' ';
23        leftOperand = 0;
24    }
25
26    /**
27     * @return The value currently displayed
28     * on the calculator.
29     */
30    public int getDisplayValue()
31    {
32        return displayValue;
33    }
34
35    /**
36     * A number button was pressed.
37     * @param number The single digit.
38     */
39    public void numberPressed(int number)
40    {
41        displayValue = displayValue * 10 + number;
42    }
43
44    /**
45     * The '+' button was pressed.
46     */
47    public void plus()
48    {
49        applyPreviousOperator();
50        previousOperator = '+';
51        displayValue = 0;
52    }
53
54    /**
```

```
55     * The '-' button was pressed.
56     */
57     public void minus()
58     {
59         applyPreviousOperator();
60         previousOperator = '-';
61         displayValue = 0;
62     }
63
64     /**
65     * The '=' button was pressed.
66     */
67     public void equals()
68     {
69         if(previousOperator == '+') {
70             displayValue = leftOperand + displayValue;
71         }
72         else {
73             displayValue = leftOperand - displayValue;
74         }
75         leftOperand = 0;
76     }
77
78     /**
79     * The 'C' (clear) button was pressed.
80     */
81     public void clear()
82     {
83         displayValue = 0;
84     }
85
86     /**
87     * @return The title of this calculation engine.
88     */
89     public String getTitle()
90     {
91         return "Super Calculator";
92     }
93
94     /**
95     * @return The author of this engine.
96     */
97     public String getAuthor()
98     {
99         return "Hacker T. Largebrain";
100    }
101
102    /**
103    * @return The version number of this engine.
104    */
105    public String getVersion()
106    {
107        return "version 0.2";
108    }
```

```
109
110  /**
111   * An operator button has been pressed.
112   * Apply the immediately preceding operator to
113   * calculate an intermediate result. This will
114   * form the left operand of the new operator.
115   */
116  private void applyPreviousOperator()
117  {
118      if(previousOperator == '+') {
119          leftOperand += displayValue;
120      }
121      else if(previousOperator == '-') {
122          leftOperand -= displayValue;
123      }
124      else {
125          // There was no preceding operator.
126          leftOperand = displayValue;
127      }
128  }
129 }
130
```