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1  /*-----*/
2  * Author:      Dan Cassidy
3  * Date:        2015-07-24
4  * Assignment:  HW6-1
5  * Source File: MainActivity.java
6  * Language:    Java
7  * Course:      CSCI-C 490, Android Programming, MoWe 08:00
8  -----*/
9  package dancassidy.bmicalculator;
10
11  import android.app.Activity;
12  import android.os.Bundle;
13  import android.text.Editable;
14  import android.text.TextWatcher;
15  import android.widget.EditText;
16  import android.widget.RadioGroup;
17  import android.widget.TextView;
18
19  /**
20   * Main activity class for the BMI Calculator program.
21   *
22   * @author Dan Cassidy
23   */
24  public class MainActivity extends Activity {
25      private EditText heightEditText;
26      private EditText weightEditText;
27      private TextView heightAbbreviationTextView;
28      private TextView weightAbbreviationTextView;
29      private TextView bmiResultTextView;
30      private BMICalculator calculatorInstance;
31
32      /**
33       * Main method that runs on application start.
34       *
35       * @param savedInstanceState The saved instance state.
36       */
37      @Override protected void onCreate(Bundle savedInstanceState) {
38          super.onCreate(savedInstanceState);
39          setContentView(R.layout.activity_main);
40
41          heightEditText = (EditText) findViewById(R.id.heightEditText);
42          weightEditText = (EditText) findViewById(R.id.weightEditText);
43          heightAbbreviationTextView = (TextView) findViewById(R.id.heightAbbreviationTextView);
44          weightAbbreviationTextView = (TextView) findViewById(R.id.weightAbbreviationTextView);
45          bmiResultTextView = (TextView) findViewById(R.id.bmiResultTextView);
46          RadioGroup unitsRadioGroup = (RadioGroup) findViewById(R.id.unitsRadioGroup);
47
48          heightEditText.addTextChangedListener(heightEditTextWatcher);
49          weightEditText.addTextChangedListener(weightEditTextWatcher);
50          unitsRadioGroup.setOnCheckedChangeListener(unitsRadioGroupListener);
51
52          calculatorInstance = new BMICalculator();
53
54          updateBMI();
55      }
56
57      /**
58       * Listener for the height field to detect when the input has changed.
59       */
60      private TextWatcher heightEditTextWatcher = new TextWatcher() {
```

```
61         @Override public void onTextChanged(CharSequence s, int start, int before, int count) {
62             try {
63                 calculatorInstance.setHeight(Double.parseDouble(s.toString()));
64             }
65             catch (NumberFormatException e) { }
66             updateBMI();
67         }
68
69         @Override public void beforeTextChanged(CharSequence s, int start, int count, int after) { }
70         @Override public void afterTextChanged(Editable s) { }
71     };
72
73     /**
74     * Listener for the weight field to detect when the input has changed.
75     */
76     private TextWatcher weightEditTextWatcher = new TextWatcher() {
77         @Override public void onTextChanged(CharSequence s, int start, int before, int count) {
78             try {
79                 calculatorInstance.setWeight(Double.parseDouble(s.toString()));
80             }
81             catch (NumberFormatException e) { }
82             updateBMI();
83         }
84
85         @Override public void afterTextChanged(Editable s) { }
86         @Override public void beforeTextChanged(CharSequence s, int start, int count, int after) { }
87     };
88
89     /**
90     * Listener for the RadioGroup to detect when the user has switched from metric to English units
91     * and vice versa.
92     */
93     private RadioGroup.OnCheckedChangeListener unitsRadioGroupListener =
94         new RadioGroup.OnCheckedChangeListener() {
95         @Override public void onCheckedChanged(RadioGroup group, int checkedId) {
96             if (checkedId == R.id.metricRadioButton) {
97                 calculatorInstance.setMetric(true);
98                 heightAbbreviationTextView.setText(R.string.meter_abbreviation);
99                 weightAbbreviationTextView.setText(R.string.kilogram_abbreviation);
100             }
101             else {
102                 calculatorInstance.setMetric(false);
103                 heightAbbreviationTextView.setText(R.string.inch_abbreviation);
104                 weightAbbreviationTextView.setText(R.string.pound_abbreviation);
105             }
106             heightEditText.setText(String.format("%.2f", calculatorInstance.getHeight()));
107             weightEditText.setText(String.format("%.2f", calculatorInstance.getWeight()));
108             updateBMI();
109         }
110     };
111
112     /**
113     * Helper method to update the activity's BMI display when needed.
114     */
115     private void updateBMI() {
116         bmiResultTextView.setText(String.format("%.2f", calculatorInstance.getBMI()));
117     }
118 }
119
```