```
1   import java.awt.*;
2   import java.awt.event.*;
3   import javax.swing.*;
4   import CSCI.*;
5
6  public class BMIcalc extends JPanel {
7
8           private static JComboBox measurementBox;
9           private static JTextField textField;
10          private static JTextField textField2;
11          private static JTextField textField3;
12          private static JTextField BMIfinal;
13
14                  public BMIcalc()
15                  {
16                  super(new BorderLayout());
17                      // layout of window
18                  JPanel labelPanel = new JPanel(new GridLayout(5, 2)); // 5 rows 2 columns
19                  add(labelPanel, BorderLayout.WEST);
20                  JPanel fieldPanel = new JPanel(new GridLayout(5, 2)); // 5 rows 2 columns 21          add(fieldPanel,
                    BorderLayout.CENTER);
22
23                          // select between Metric or Imperial measurements
24                  JLabel labelCombo = new JLabel("System:");
25                  String[] options = { "Metric", "Imperial" };
26                  measurementBox = new JComboBox(options);
27                  measurementBox.addActionListener(new ActionListener()
28                  {
29
30                          @Override
31                          public void actionPerformed(ActionEvent e)
32                          {
33                          //keeping this here in case I want to do something with it dependent upon selection, like change
                            appearance
34
35  } //see above 36             }); //end of measurementBox ActionListener 37
38                  JLabel labelHeight = new JLabel("Height (m/in)");
39                  textField = new JTextField();
40                  JLabel labelWeight = new JLabel("Weight (kg/lb)");
41                  textField2 = new JTextField();
42                  JLabel labelAge = new JLabel("Age (yrs)");
43                  textField3 = new JTextField();
44                  JLabel finalBMIlabel = new JLabel("BMI:");
45                  BMIfinal = new JTextField();
46
47                  labelPanel.add(labelCombo);
48                  labelPanel.add(labelHeight);
49                  labelPanel.add(labelWeight);
50                  labelPanel.add(labelAge);
51                  labelPanel.add(finalBMIlabel);
52
53                      fieldPanel.add(measurementBox);
54                      fieldPanel.add(textField);
55                      fieldPanel.add(textField2);
56                      fieldPanel.add(textField3);
57                      fieldPanel.add(BMIfinal);
58                  } //end of Public BMIcalc
59
```

```
60                  public static void main(String[] args)
61                  {
62                  final BMIcalc form = new BMIcalc();
63
64                      // Calculate BMI button
65                              JButton submit = new JButton("Calculate my BMI");
66                              submit.addActionListener(new ActionListener()
67                              {
68                              @Override
69                              public void actionPerformed(ActionEvent e)
70                              {
71                              createBMI((String) measurementBox.getSelectedItem(), textField.getText());
72                              } //end of actionPerformed 73              }); //end of Calculate button
74
75                      // program frame
76                                      JFrame guiFrame = new JFrame("Simple BMI Calculator");
77                                      guiFrame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
78                                      guiFrame.setSize(300,200);
79                                      guiFrame.setLocationRelativeTo(null);
80                                      guiFrame.getContentPane().add(form, BorderLayout.NORTH);
81                                      JPanel p = new JPanel();
82                                      p.add(submit);
83                                      guiFrame.getContentPane().add(p, BorderLayout.SOUTH);
84                                      guiFrame.pack();
85                                      guiFrame.setVisible(true);
86              } //end of main
87
88          private static void createBMI(String selectedItem, String text)
89          {
90                                  // selects between imperial and metric to calculate BMI
91                                      if(selectedItem.equals("Metric"))
92                                      {
93                                      System.out.println("Metric is selected");
94                                      double ERROR = -1;
95                                      double age = CSCIConvert.Parse(textField3.getText(), ERROR);
96                                      double height = CSCIConvert.Parse(textField.getText(), ERROR);
97                                      double weight = CSCIConvert.Parse(textField2.getText(), ERROR);
98                                      if(age == -1 || height == -1 || weight == -1)
99                                      {
100                                     System.out.println("ERROR: INVALID INPUT");
101                                     String output = new String("ERROR: INVALID INPUT");
102                                     BMIfinal.setText(output);
103                                        }//throw error if input is invalid
104                                 else
105                                 {
106                                 double BMI = weight/(height * height);
107                                 System.out.println("Thanks! Now I know that:\nYour age is " + age + "
                                                                    years\nYour height is " + height + " meters\nYour weight is " + weight
                                        + " kilograms\nTherefore, your BMI is " + BMI);
108                                 String output = new String(""+BMI); 109         BMIfinal.setText(output);
110     }//calculate BMI in metric standard 111        } //end of metric if statement
112                                 else
113                                 {
114                                 System.out.println("Imperial is selected");
115                                 double ERROR = -1;
116                                 double age = CSCIConvert.Parse(textField3.getText(), ERROR);
117                                 double height = CSCIConvert.Parse(textField.getText(), ERROR);
118                                 double weight = CSCIConvert.Parse(textField2.getText(), ERROR);
```

```
119                         if(age == -1 || height == -1 || weight == -1)
120                         {
121                         System.out.println("ERROR: INVALID INPUT");
122                         String output = new String("ERROR: INVALID INPUT"); 123    BMIfinal.setText(output);
124                                 }//throw error if any input is invalid (not double)
125                             else
126                             {
127                             double BMI = (weight*703)/(height * height);
128                             System.out.println("Thanks! Now I know that:\nYour age is " + age + "
                                                        years\nYour height is " + height + " inches\nYour weight is " + weight
                        + " pounds\nTherefore, your BMI is " + BMI);
129                             String output2 = new String(""+BMI);
130                             BMIfinal.setText(output2);
131                             }//calculate BMI in imperial standard 132              } //end of imperial if statement
133     } //end of createBMI 134   } //end of BMI class
```