```java
/*
 * Written by JJ Shepherd
 */
import java.util.Scanner;
public class MeasureConverter {

    public static final String IN = "INCHES";
    public static final String FT = "FEET";
    public static final String CM = "CENTIMETERS";

    public static void main(String[] args) {
        MeasureConverter m = new MeasureConverter();
        m.start();
    }
    public void start()
    {
        Scanner keyboard = new Scanner(System.in);
        printGreetings();
        boolean quit = false;
        while(!quit)
        {
            printOptions();
            String unit1 = keyboard.nextLine();
            String unit2 = keyboard.nextLine();
            if(!isValidUnit(unit1) || !isValidUnit(unit2))
            {
                System.out.println("One of the units were invalid. Try again");
                continue;
            }
            printInput(unit1,unit2);
            double value = keyboard.nextDouble();
            keyboard.nextLine();
            double result = 0.0;
            if(unit1.equalsIgnoreCase(IN) && unit2.equalsIgnoreCase(FT))
            {
                result = inToFt(value);
            }
            else if(unit1.equalsIgnoreCase(IN) && unit2.equalsIgnoreCase(CM))
            {
                result = inToCm(value);
            }
            else if(unit1.equalsIgnoreCase(CM) && unit2.equalsIgnoreCase(IN))
            {
                result = cmToIn(value);
            }
            else if(unit1.equalsIgnoreCase(CM) && unit2.equalsIgnoreCase(FT))
            {
                result = cmToFt(value);
            }
            else if(unit1.equalsIgnoreCase(FT) && unit2.equalsIgnoreCase(IN))
            {
                result = ftToIn(value);
            }
            else if(unit1.equalsIgnoreCase(FT) && unit2.equalsIgnoreCase(CM))
            {
                result = ftToCm(value);
            }
```

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58              else
59              {
60                  result = value;
61              }
62              printResults(unit1,unit2,result);
63              System.out.println("Press Enter to keep converting units or enter \"quit\" to
    quit");
64              quit = keyboard.nextLine().equalsIgnoreCase("quit");
65          }
66          System.out.println("Goodbye!");
67      }
68      public void printGreetings()
69      {
70          System.out.println("Welcome to the units converter!");
71      }
72      public void printOptions()
73      {
74          System.out.println("Enter the type of units followed by the second type.\nUnits can be
    either \""+IN+"\", \""+FT+"\", or \""+CM+"\"");
75      }
76      public void printResults(String u1, String u2, double result)
77      {
78          System.out.println("There are "+result+" "+u2+" in "+u1);
79      }
80      public boolean isValidUnit(String input)
81      {
82          return input.equalsIgnoreCase(IN) || input.equalsIgnoreCase(CM) ||
    input.equalsIgnoreCase(FT);
83      }
84      public void printInput(String u1, String u2)
85      {
86          System.out.println("Enter "+u1+" and I'll determine the number of "+u2);
87      }
88      public double inToFt(double in)
89      {
90          return in / 12.0;
91      }
92      public double inToCm(double in)
93      {
94          return in * 2.54;
95      }
96      public double cmToIn(double cm)
97      {
98          return cm * 0.393701;
99      }
100     public double cmToFt(double cm)
101     {
102         return cm * 0.0328084;
103     }
104     public double ftToIn(double ft)
105     {
106         return ft * 12.0;
107     }
108     public double ftToCm(double ft)
109     {
110         return ft * 30.48;
111     }
```

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112 }
113
```