EE231002 Introduction to Programming
Lab01. Unit Conversion

Due: Oct. 4, 2021

The standard unit of measurement in Taiwan is the metric system, in which the length is measured in meters, centimeters (1/100 of a meter), kilometers (1000 meters), etc. In Britain, the Imperial units are adopted while in the United States the customary units are more popular. In both countries, the length are mostly expressed in feet, inches, yards and miles. In this lab, you will write a program convert a length measured in centimeters to feet and inches. It has been defined by the US government that 1 inch equals to 2.54 centimeters and 12 inches equal to 1 foot.

Your program should read in an **integer** that represents a length expressed in centimeters, and then converts it to US customary units of feet and inches. Typical program inputs and outputs are shown below.

```
$ ./a.out
Input length in centimeter: 160
Length in US Customary units: 5 feet 2 inches
$ ./a.out
Input length in centimeter: 170
Length in US Customary units: 5 feet 6 inches
```

Notes.

1. Create a directory **lab01** and use it as the working directory.

2. Name your program source file as **lab01.c**.

3. The first few lines of your program should be comments as the following.

   ```
   // EE231002 Lab01 Unit Conversion
   // Your ID, Name
   // Date:
   ```

4. After finishing editing your source file, you can execute the following command to compile it,

   ```
   $ gcc lab01.c
   ```

   If no compilation errors, the executable file, **a.out**, should be generated, and you can execute it by typing

   ```
   $ ./a.out
   ```

5. Typical inputs and outputs of the program execution have been shown above. But you should try a few more test cases to make sure your program function correctly.

6. After you finish verifying your program, you can submit your source code by

   `$ ~ee2310/bin/submit lab01 lab01.c`

   If you see a "submitted" message, then you are done. In case you want to check which file and at what time you submitted your labs, you can type in the following command:

   `$ ~ee2310/bin/subrec lab01`

   It will show the last few submission records.

7. (Challenges) The measurement units in weight is kilogram and grams for the metric system and is pounds and ounces for the US customary units. It has also been defined by the US government that 1 pound is 453.59237 grams, and 1 pound equals to 16 ounces. Please write a program to perform conversion between these two systems.

   7.1. This problem is for your own practice, no need to submit this part of codes.