California State University, Fresno
Electrical and Computer Engineering Department

ECE 70 – Computational Programming for Engineers
Professor Kriehn – Fall 2016

Code Due By: Midnight on Tuesday, September 6, 2016
Writeup Due By: Class on Thursday, September 8, 2016

1. Take a look at the code for **limits.c** on my website under the "Ch 2 Examples" link (http://optics.csufresno.edu/). Login to **ezekiel** and create a source file called **hw2.c** using the text editor **nano**. Once you have created the file and copied the contents of the program into **hw2.c**, save it, exit the text editor, compile your program, and create an output file called **hw2.o**. Execute the program, and note the limits for the **short**, **int**, and **long** integer types, the limits for the **float**, **double**, and **long double** floating point types, and the limits for the **char** character type. Copy the results to your notes, and save it for future reference. Then submit **hw2.c** to the grader program. If the grader program has a problem with your program, fix your errors and re-submit until you are successful.

   Remember:
To create a filename called **hw2.c**:	**~> nano hw2.c**
To compile your program:	**~> gcc -lm hw2.c -o hw2.o**
To submit your program:	**~> submit hw2.c**
To check your program:	**~> alpine**

   If the program scrolls by too quickly and you cannot read all of the information printed to the screen, you can send the output of your program to the **more** command:

   ~> hw2.o | more

   In Unix/Linux, the **|** character means to "pipe" the output of the first command into the input of the second command. Press any key after the first page of information is displayed to look at the remainder of the output.

2. Take a look at the code for **dweight2.c** on my website and in the PowerPoint slides. Create a source file called **hw3.c** using the text editor **nano.** Once you have created the file and copied the contents of the program into **hw3.c**, change the code using the alternative rounding method I showed you in class. Save the file, exit the text editor, and compile your program to create an output file called **hw3.o**. Execute the program, and verify that the output is identical to the **dweight2** code. Once you have verified your code, submit **hw3.c** to the grader program. If the grader program has a problem with your program, fix your errors and re-submit until you are successful.

3. Take a look at the code for **celsius.c**. Create a source file called **hw4.c** using the text editor **nano**. Modify the code so that you convert a Celsius temperature into Fahrenheit instead of a Fahrenheit temperature into Celsius. You will have to modify your **SCALE_FACTOR** constant, the **printf()** statements, the **scanf()** statement, and the equation used to calculate the

temperature. Once you have modified your code, save, exit, and compile your program. Verify that the program works before submitting **hw4.c** to the grader program. If the grader program has a problem with your program, fix your errors and re-submit until you are successful.

Finally, take a look at the header files that are included in the three programs. The header files can be found under the directory **/usr/include** on **ezekiel**. To access them, use the **cd** (change directory) command and type the following:

        ~> cd /usr/include

To look at the contents of the directory, use the **ls** (list contents) command:

        ~> ls

To look at the contents of a specific header file, use the **more** command. For example, to look at **stdio.h**, type:

        ~> more stdio.h

To return to your home directory, type:

        ~> cd ~

On Thursday, September 8, 2016, submit the following information for each program:

1. Input/Output Diagram (HW 3-4)
2. Pseudocode or Flowchart (HW 3-4)
3. Commented Code (HW 2-4)

Remember: **Each person** must submit **hw2.c**, **hw3.c**, and **hw4.c** successfully on **ezekiel**, and **each person** must turn in their own personal write-up by the respective due dates.