CST8234 – C Programming W18 (Lab 1c)

Programming Exercise

The purpose here is to make sure that you

- Can debug, and modify a very basic program, and
- Can submit it following the instruction on Blackboard found under “Lab” | “Lab Submission Instructions”.

Requirements

The first step of this lab is to debug a program (numbers.c) that you have been given.

What it is *supposed* to do is:

1. Print the numbers from 1 to 100

2. If the number is a multiple of the first command line argument, it should say “is a multiple of 3” (presuming your first command line argument was 3)

2. If the number is a multiple of the second command line argument, it should say “is a multiple of 5” (presuming your first command line argument was 5)

4. If the number is a multiple of both the first and the second command line arguments, and seven, it should say “is a multiple of both 3 AND 5”

5. Otherwise, don’t print anything besides the number

You should then get the following output, if you invoke the program with the arguments “3” and “5”.

```
$ ./numbers.exe 3 5
 [lines deleted for brevity]
  7
  8
  9 is divisible by 3
 10 is divisible by 5
 11
 12 is divisible by 3
 13
 14
 15 is divisible by both 3 AND 5
 16
```

Task #1

Unfortunately, a sloppy programmer did not write the program very well!

So when you try to compile it as follows

```
$ gcc -g -pedantic -Wall -W -std=c99 -o numbers numbers.c
```

You'll get all sorts of compiler warnings and errors.

Your challenge is fix the problems in numbers.c (hint: try googling what the warning/errors mean) so the program actually compiles and runs, and produces the ***exact*** same output as described above (***including*** formatting).

Task #2

Once you're confident you're generating the correct output, you now have to edit the program and extend its functionality so that it takes THREE command-line arguments (instead of TWO), and produces the following output

```
$ ./numbers.exe 3 5 4
 [lines deleted for brevity]
 38
 39 is divisible by 3
 40 is divisible by both 5 AND 4
 41
 42 is divisible by 3
 43
 44 is divisible by 4
 45 is divisible by both 3 AND 5
 46
 47
 48 is divisible by both 3 AND 4
 49
 50 is divisible by 5
 51 is divisible by 3
 52 is divisible by 4
 53
 54 is divisible by 3
 55 is divisible by 5
 56 is divisible by 4
 57 is divisible by 3
 58
 59
 60 is divisible by ALL of 3 AND 5 AND 4
 61
```

Submission

When you are done task #2, submit your program to Blackboard.

But… before you do, please check that you've satisfied the following submission requirements

1. Did you make sure that you have the appropriate header in your source file (i.e., numbers.c)?
2. Did you confirm that your zipped submission is a ".zip" file (not a '.rar' or '.tar.gz' or '.7z' file)?
3. Did you zip up a folder that includes your *user name*, and the lab/assignment indicator? I.e., if you open up your own zipped submission, you should see a *folder* called (for example) "smit9112_L1". If you just see *file(s)*, you've done it wrong, and you'll need to go to the *parent* folder, and try zipping your lab folder.
4. Did you remove all the unnecessary files from the folder contained in your zipped submission? I.e., you open up your own zipped submission, and click on the folder called (for example) "smit9112_L1", you should see a *single* file called 'numbers.c'.

If you don't satisfy submission requirements #2 or #3 you will get ZERO on this lab. If you realize afterwards that you've made a mistake, don't panic! you are allowed to correct your mistake and re-submit. But you ONLY get TWO submissions per lab/assignment, so try to make sure you double-checked everything *before* doing your first submission… and only use the second submission in case of emergency.