CPE 325: Embedded Systems Laboratory
Laboratory Assignment #1

Assignment [50 pts]

1. Write a program in C where you would perform the following tasks:
    a. Write a *main()* function where you will declare an unsigned integer *a*. You can assign any value you like. (e.g. a = 5)
    b. Make a call to function *print_multiplication_table(…)*. You will pass the unsigned integer you defined earlier as an argument to the function call.
    c. You will define a function called *print_multiplication_table(…)* that takes in an unsigned integer parameter. This function should have *void* return type and print the multiplication table of the number passed into as an argument.

    For example, if the number passed into the function is 5, you program should print the following:

```
5 X 1 = 5
5 X 2 = 10
….
…
5 X 10 = 50
```

2. Write a C program to count the number of alphabets (upper-case and lower-case) and numbers in a string defined in the program. Please do not use the library functions to determine uppercase, lowercase letters or digits. [You can compare with ASCII values.] For demonstration purpose, please sure that your output looks like following:

```
String Hello! Welcome to CPE325. It’s a great day, isn’t it?
Contains: The string contains 6 upper-case and 29 lower-case characters and 3
digits.
```

Deliverables

1. Lab report which includes:
    a. A neat flowchart for each of the programs
    b. Output screenshots for both of the programs
2. Source files (.c files)

Note:

1. You must create an organized directory, subdirectory, workspace, and project for each demo code and each solution.
2. During demonstration, you should be able to inspect variables, set watchpoints, set and monitor breakpoints, monitor registers and memory, and show the output.
3. Please consult your TA for method of demonstration.