

**CS112: Computing Laboratory**  
**Assignment 12                      Date: 06/05/2020**

**For proper indentation and commenting in the code: 10 marks**

**For below questions: 10+20=30 marks**

**Total marks: 30 + 10 = 40 marks**

- 1) Write a program that will read a file and count how many uppercase characters, lower case characters, spaces, tabs and lines are present in it.
- 2) Given a file (prog1.c) containing a C program source code that is not written in proper indent style. Write a program that produces another file (prog2.c) containing the same program code in properly indented form including line number. Consider the following assumptions: (a) program is syntactically correct; (b) each if- or else- or while- or for-block is enclosed by braces "{ }" irrespective of the number of statements in that block.

Example:

**Input File: "Q2\_input1.c"**

```
#include<stdio.h>
int main()
{
int i=0; int j=0;
if(i==0){j=i++;
printf("%d", i); printf("%d", j);}
}
```

**Output File: "Q2\_output1.c"**

```
1.#include<stdio.h>
2.int main()
3.{
4.    int i=0;
5.    int j=0;
6.    if(i==0)
7.    {
8.        j=i++;
9.        printf("%d", i);
10.       printf("%d", j);
11.    }
12. }
```

**Instructions to follow:**

1. Implement all the above programs and give the file names as follows:
  - a. Name of source code file: **"Question\_1.c"**
  - b. Name of executable file: **"Output\_1.out"**
  - c. You have to execute on a number of input files. Those input files (e.g. **Q1\_input1.txt, Q1\_input2.txt, ... Q2\_input1.c, Q2\_input2.c, ...**) should be submitted in a subfolder **"Input"**.
  - d. For question 1, submit the output in a file **"Q1\_Output.txt"** in the following format:

**Run-1:**

Input filename: Q1\_input1.txt

Output:

No. of upper cases=2  
No. of lower cases=12  
No. of lines=2  
No. of spaces=2  
No. of tabs=1

**Run-2:**

Input filename: Q1\_input2.txt

Output:

No. of upper cases=2  
No. of lower cases=12  
No. of lines=2  
No. of spaces=2  
No. of tabs=1

- e. For question 2, submit the output files (**"Q2\_output1.c, Q2\_output2.c, ..."**) in a subfolder **"Q2\_Output"**

2) Create a zip file which includes all the above files naming it **<Student\_EmailID>.zip** and upload the zip file through google form:

3) **Deadline of submission :- 7 PM 07/05/2020 (sharp)**

4) Feel free to contact your respective TA for any query.

