CS110: Computing Laboratory

Lab # 08 Mid semester exam (1 Questions, 10 Points)
Lab session: ML3
Held on: 28-Apr-2021 (Wed)
Lab Timings: 09:00 to 12:00 Hours Pages: 2
Submission time: 12:00 Hrs, 28-Apr-2021
Instructors Dr. V. Vijaya Saradhi & Prof. Diganta Goswami
Lead TA Mr. Subhuam Das
Department of CSE, IIT Guwahati

Question 1: (10 points)

Write a C program for the following tasks.

Input file description You are given a file named `ML3-input.txt`. Contents of this file are

1. First line contains: number of rows, and number of columns
2. Second line onwards elements of the two dimensional matrix of data type `char`.

Task 01 Read the number of rows, number of columns followed by the contents of the two dimensional array from the input file.

You must perform the file reading using redirection operation you have learned in the week 07 lab.

Task 02 For each row of the matrix you should:

1. Count how many *s are appearing consecutively. Store this number in a two dimensional array. Number of rows in this array must be equal to the number of rows of the input matrix. Number of columns of this array be 20.
2. Count how many -s are appearing consecutively. Store this number in the above two dimensional array.
3. Repeat Task 02 (1) and Task 02 (2) till the end of the line
4. When you encounter a new line, store -1 in the two dimensional array.

Task 03 Print the two dimensional array computed in Task 02.

Example For example, look at the second row of this matrix from the input file. Your output should be `19 16 30 23 24 0 -1`

Input & Output Input and output are given in the files `ML3-input.txt` and `ML3-output.txt`

Marking Criteria Adhere to the following marking criteria

2 Marks Read rows and columns from file

8 Marks Read the matrix into a two dimensional `char` array

10 Marks Correct usage of loop structure and loop counters

8 Marks Obtained correct counts for *?

8 Marks Obtained correct counts for -?

4 Marks New line character is taken care? -1 is stored at the end of each line?

10 Marks Counts obtained for every row of the matrix? (10)

Penalty If you deviate from the problem statement for implementational convenience, the appropriate criteria is subject to 50% penalty.