Department of Artificial Intelligence and Data Science

21CSL 11 – C Programming Laboratory

Academic Year: 2021 -2022

Continuous Assessment Test - 3

Implementation of a rudimentary 'C' code snippets preferably on the Linux operating system

Floating Date: 7th Mar 2022

Duration: **2.5 Hours**

Implement C programs for the following problem statements:

- **Arranging Sorted Arrays:** A sorted array is the one in which the elements are arranged in the ascending order from the first position to the last. Given two sorted arrays say, A[0:m-1] and B[0:n-1] merge and store them into the first array in the sorted order. Assume that A has enough of memory to accommodate all the elements of B.

  Example:

  Input: ip.txt

A	1	4	5	7	9

B	2	3	6	8	11	12

A	1	2	3	4	5	6	7	8	9	11	12

- **Text Alignment:** Assume that you are provided with an input text file (ip.txt) which has a paragraph of English sentences. The lines of the paragraph are not aligned properly i.e. aligned left in such a way that more extra spaces are present in the right side of the end of every line. You are asked to simulate a text justification function that distributes the text evenly between the margins. The margin size may be customized as per the requirement. Write a code snippet for the same.

  Example:

  Input: ip.txt

  The sequence is made up of four bases: A, G, T and C. In this context, assume that the polynucleotide chains are formed by alphabet symbols and are finite in length. Given two strands of polynucleotide chains (P_1 and P_2) check whether DNA molecule (D) formed is correct or not.

Output:

The sequence is made up of four bases: A, G, T and C. In this context, assume that the polynucleotide chains are formed by alphabet symbols and are finite in length. Given two strands of polynucleotide chains (P_1 and P_2) check whether DNA molecule (D) formed is correct or not.

Implementation Guidelines:

- All the c programs must be well structured.
- Deploy the working codes in any C compiler IDE (preferably codechef), Linux GCC compiler, Codeblocks IDE

Submission Guideline:

- Create a single program for the assignment, and name it CLab_CAT3.c, and upload it.
- Capture running version of the program(s) as screen shots and name it as CLab_Report_CAT3.pdf, and upload it.

Evaluation Guidelines:

Sl	Items	Marks
(a)	Arranging Sorted Arrays	/25
(b)	Text Alignment	/75
	Total	/100