Take-Home Assignment

Last Date of Submission: 04.06.2020 Total Marks: 60

Instructions:

1. There are 2 parts in this assignment. Part A contains the DayFromDate and MonthlyCalendar assignment. Part B contains the questions regarding the final exam syllabus.
2. Read the questions properly and answer the following questions in Code::Blocks.
3. Save the files with question numbers and submit only the .c files.
4. Solutions of Part A must be submitted in the Term Project section of google classroom.
5. Solutions of Part B must be submitted in the Take-Home Assignment section of google classroom.

Part A

In this program we will find the day of the week from a date and will also prepare a calendar on a monthly basis. Instructions were given earlier and can be found in google classroom. **[20 Marks]**

Part B

Answer All the 4 Questions **[40 Marks]**

1. Write a C program that takes strings from a file given by the user and prints out if the string is a palindrome or not. If the string is palindrome then the program will return the occurrences of each of the characters. If the string is not palindrome then the program will turn all the alphabets in the string into upper case alphabets using the user defined function and appends it to a file which stores the strings.

[Marks: 3+4+3]

2. Write a C program that creates a structure named studentInfo which comprises the following members or elements of appropriate data type: Name, ID, CGPA.

- Now create an array variable of size three for the structure and take user input to fill the array. Then print stored information to the console window.
- Now find the highest CGPA among the three CGPAs and display the Name , ID of the student who obtained that CGPA.
- Then append all the information of the highest CGPA holder (which means Name , ID & CGPA) in a file.
- After that read the information stored in the file and print the information on the console window.

[Marks: 4+4+1+1]

3. Write a C program that creates a pointer of structures named book_data containing the following collection of elements: title, author, topic, id.

- Ask the number of structures from the user and create a pointer of structures and fill the structures with book information.
- Search a specific book by book id and show the information.
- Store all the book information from structures in a file.

[Marks: 4+3+3]

4. Write functions named Permutation(int n, int r) and Combination(int n, int r)to compute the permutation and combination between two numbers taken from the user(to store the two numbers use Dynamic Memory Allocation). For the above two functions create another function named Factorial(int x)which calculates the factorial of a number via Recursion.

[Marks: 1+3+3+3]