CSE 1102: Elementary Structured Programming Lab (Fall 24)

Structure Practice Problems

S L	Problem statement	
1	Write a C program where you will write two structures : **Student** and **Teacher.** A **Student** structure will have the members **roll** and **marks.** A **Teacher** structure will have the members **id,name** and **studentList (array of structures of size 5);** Create two teacher instances. Then insert the information about the teachers (id, name , studentInfo). Then you will have to insert the information about the students who are under those teachers (use for loop). Finally print the values of members of the two teacher **structures.** **Sample Input:** Enter teacher 1' name: Afrin Enter teacher 1's id: 100 Enter teacher 1's student info : 1 10 2 20 3 30 4 40 5 50 Enter teacher 2' name: Jarin Enter teacher 2's id:200 Enter teacher 2's student info : 100 11 200 21 300 31 400 41 500 51 **Sample Output:** Teacher id: 100 Teacher name: Afrin The students of teacher Afrin are: (1,10) (2,20) (3,30) (4,40) (5,50) ************************* Teacher id: 200 Teacher name: Jarin The students of teacher Jarin are: (100,11) (200,21) (300,31) (400,41) (500,51) *************************	

2	Determine which teacher's students have the higher average marks. For the given sample input, the output will be as follows: **The students of teacher Afrin have a total number of 150 and an average number of 30.** **The students of teacher Jarin have a total number of 155 and an average number of 31.** **The students of Jarin have better results.**	
3	**Write a C program where you need to do the followings:** ● Define three **structures** namely Date, Book, Student with necessary member variables. Member variables of the three structures are shown in the following table:	

Structure	Members
Date	day, month
Book	Book Name, Issuing Date, Return Date (Issuing date and Return date are **two instances of Date structure.**)
Student	ID, Name, Issued Book 1, Issued Book 2 (Issued Books are **two instances of the Book structure**)

● Create one instance of "**Student**" in the main() function.
● Take **user input** for all member variables of the student from the main() function.
● **Calculate the total fine** if that student hasn't returned the books within the due date. (Each book has to be **returned within 5 days** of being issued. Otherwise the student has to **pay a fine** for each passing day and the fine rate is **Tk 50 per day for each book.**)
Explanation: [You may consider that each month has 30 days for ease of calculation. E.g. If the issuing date is 5/10 and the return date is 15/11 then the day difference may be considered as 40 days and the fine will be calculated for 35 days].
● Finally, print the total fine of that student.

| 4 | Prepare a **Date** Structure, it will have the following members
Day, Month, Year
Now write a program in C that will take two dates as inputs and compare them.
Sample Input:
Enter Date 1:
Day : 1
Month :1
Year : 1997

Enter Date 2:
Day : 1 | |

Month :1 Year : 1999 **Sample Output:** Date 1 is earlier than Date 2	