

## CSE 110 Offline Assignment-2

**\*\*Any Sort of Plagiarism will Result in Severe Consequences\*\***

So the teachers of the Department of CSE need to calculate the online marks of the CSE-110 course. There are three files named -

```
Student_info.txt
Online_info.txt
marks.txt
```

In these files, various information about the students, online etc. are stored. Now your task is to help them in this regard.

**\*\*Task 1-4 is mandatory. Inside task - 2, there is an optional task. Also Task - 5 itself is fully optional. If you complete these, you will get bonus marks.\*\***

### **Task - 1:**

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The “student\_info.txt” file looks like following:

```
5
1 Kabir
2 Rahim
3 Karim
4 Sumi
5 Rumi
```

At the beginning of the file, there will be a number indicating the total number of students will be given. Make a structure for storing the information of the students like following:

```
struct student {
    // id
    // name
    float *marks;
};
```

Now reading from the above file, store the information of the students accordingly. The **marks** field will carry the marks in all online which you will populate later.

### **Task - 2:**

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In the “online\_info.txt” file, there is an integer indicating the number of online followed by the ID and total marks of each online in each line.

This file looks like following:

```
4
1 10
2 20
3 30
4 10
```

Now if we ask you to write a struct for storing the information of online, then you will be prompted to write something like the following:

```
struct online {
    int id
    int totalMarks;
};
```

### Optional:

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Let us put a restriction here to make the problem more interesting. You can only use one integer for storing these two information i.e., online ID (which will be in the range of 1-10) and total marks which will be in the range of [10, 30].

So the structure for online should look like the following:

```
struct online {
    int onlineInfo;
};
```

So to do this you can write some helper function like following:

```
int prepareOnlineInfo(int id, int totalMarks)
{
    int onlineInfo = // some bitwise operation...
    return onlineInfo;
}
```

After reading the ID and the total marks of an online from the file you can call this function and use the returned integer.

Similarly two other helper functions like following will make your task easy:

```
int getOnlineId(int onlineInfo)
{
    int id = // some bitwise operation...
    return id;
}

int getOnlineToalMarks(int onlineInfo)
{
    int totalMarks = // some bitwise operation...
    return totalMarks;
}
```

### Task - 3:

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Now you have to read another file “marks.txt” where the number obtained by each student in each online is given. The file looks like following:

```
1
10 A 5 9 10
2
15 20 C C 20
3
27 22 30 A 27
4
7 2 5 7 9
```

Here, for each online, there will be an integer indicating the online ID followed by the marks of all students sorted by their Roll number in increasing order for that online.

**N.B:** You have to handle **A** and **C** especially. **A** means absent so the student will get 0 and **C** means the student has copied so in this case, he/she will be given **-(totalMarks of that online)** as penalty.

So for the above file, the marks of Roll 1 are 10, 15, 27 and 7 and for Roll 3 are 5, -20, 30 and 7 respectively in their 4 online.

But the total marks of each online was different but now we want to make them even i.e., we want to convert them all out of 10. So while storing the marks of the students, you have to divide each online by their total marks and multiply by 10. So the marks of Roll 1 will now be: **10, 7.5, 9 and 7.**

Now store the marks of all the online of each student in the above mentioned fashion.

#### Task 4:

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Now create a file named “best3.txt” and write the ID and name of each student followed by the best 3 online marks of that student.

```
1 Kabir 10 9 7.5
2 Rahim ....
...
```

#### Task 5: (Optional)

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Print the name of the students whose total marks in all the online are below average.

### Assignment Rules

- ★ Assignment must be submitted in **Moodle**. Submissions via email **will not** be accepted.
- ★ **Follow** the instructions regarding **submissions** mentioned below:

First, rename the file containing your source code as your *StudentId.c* (For example, if your student ID is **2006001**, the name of your file should be **2006001.c**). Then submit that file to Moodle. Any other file type will *not* be accepted. Make sure that your submitted file contains your source code(s).

**\*Failure to follow these instructions will result in penalties.**

- ★ **Deadline** for the assignment is **31/03/2022** at **11:55 PM**.
- ★ Avoid **plagiarism** with utmost priority, i.e., write all programs on your own. **DO NOT COPY** codes, programs or ideas from others and do not share your programs, ideas or codes with others. We regularly use copy checkers, so your submitted assignment will be checked for plagiarism against *your classmates* as well as against the *internet*.
- ★ If any **plagiarism** gets detected:
  - First time copier and copyee will receive **negative marking (-100%)** because of dishonesty. Their default is greater than those who will not submit. So, be **CAUTIOUS**.
  - Repeated occurrences will lead to **severe** departmental action and that could jeopardize your academic career (you may be **EXPELLED** for up to two years as per the policy of **BUET**). We expect fairness and honesty from you. *Do not* disappoint us!
- ★ **No** request for extending the assignment deadline will be entertained.