

Data Structures and Algorithms Lab

Instructions

Work on this lab individually. *Write main function first and keep on testing the functionality of each function once created.*

Program the following tasks in your C++ compiler and then compile and execute them.

Email your solution (.cpp) file only to the following respective recipient till **Friday, March 12, 2021**.

DO NOT compress/zip your solution.

The email must be sent from your **official PUCIT email id**, otherwise it will **NOT BE ACCEPTED** and will be marked **ZERO**.

2 MARKS will be **DEDUCTED** if submission instructions are not followed.

The subject of the email should be the name of the lab e.g. **Lab 02**.

Degree	Recipient Email	Subject of Email
BSIT Morning	dsaubt01@gmail.com	Lab 02
BSIT Afternoon	dsaubt02@gmail.com	

Task 01

Write a program that **creates a file** named **student.txt** the program then lets the user enter a **series of records** consisting of students' **roll number, first name, last name** and **marks** to be stored in the file (**student.txt**) separated by blank space on each new line. The program should stop taking more data when user enters **-999**.

Task 02

Write a program that **opens** the file created in **Task 01**, reads all the **records** and **display** them on the screen in exactly the following format

Sample Execution

Roll No.	Name	Marks
1	Ali Imran	75
2	Asif Ali	87
3	Naveed Aslam	56
4	Shahid Farid	100
5	Hassan Khan	98

Name must contain the **first name** and **last name** of the student.

Task 03

Write a program to compute **numeric grades** for a course. The course records are in a file named **input.txt** (*given with this practice exercises' folder*) that will serve as the **input file**. The input file is in exactly the following format: Each line contains a student's; **roll number**, then one space then **ten quiz scores** all on one line. The quiz score are whole numbers and are separated by **one space**.

Your program will take its input from this file (**input.txt**) and **send** its output to the **console**. The data displayed on the **console** will be the same as the data in the input file except that there will be one additional numbers (**of type int**) at the end of each line. This number will be the **highest score** of the student's ten quiz scores.

Sample input

```
101 2 1 4 5 3 0 6 4 7 9
104 0 3 1 8 7 0 6 7 0 12
103 2 1 2 3 0 5 8 7 0 9
```

Sample output

```
101 9
104 12
103 9
```

Task 04

Write a program to determine the best two quizzes' marks of a student, which are present in an **input file** and write the result to a **output file**.

The input file "**input.txt**" (given with this practice exercises' folder) will contain several test inputs and is in exactly the following format: Each line contains a student's roll number, then one space then ten quiz scores all on one line. The quiz score are whole numbers and are separated by one space.

Your program will take its input from this file and send its output to the output file "**output.txt**". Each line in the output will contain the roll number of a student followed by the marks of his/her **best two quizzes in decreasing order**.

Sample input**101** 2 1 4 5 3 0 6 4 7 9**104** 0 3 1 8 7 0 6 7 0 12**103** 2 1 2 3 0 5 8 7 0 9**Sample output****101** 9 7**104** 12 7**103** 9 8

No submission will be accepted after the DUE DATE.

B E S T O F L U C K