Data Structures and Algorithms Lab

Lab 01 **Marks 05**

Instructions

Work on this lab individually. You can use your books, notes, handouts etc. Program the following tasks in C++ compiler and then compile and execute them. ***Show your work to the instructor before leaving the lab to get some or full credit.***

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** as roll number.

Task 02

Write a program that **opens** the file created in ***Task 01***, read 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 lab's 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** should be same as of the data in the input file except that there will be one additional number **(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 2 1 4 5 4 0 6 4 7 3 **7**
104 0 3 12 8 7 0 6 7 0 1 **12**
103 2 1 2 3 0 5 9 7 0 8 **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 an **output file**.

The input file **"input.txt"** *(given with this lab's 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 should take its input from this file **(input.txt)** 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 9 5 3 0 7 4 6 4
104 0 3 12 8 7 0 6 7 0 1
103 2 1 2 3 0 5 8 7 0 9

Sample output
101 9 7
104 12 7
103 9 8

☺ ☺ ☺ **BEST OF LUCK** ☺ ☺ ☺