Assignment No. 1

To refresh your C programming skills, the following programming assignment is selected from the C programming prerequisite course that you have already taken.

Seven students are enrolled in a program at the end of which they must take exams in two different subjects. They receive a diploma if they pass both subjects. The passing score in each subject is 50 or higher, and the scores are:

STUDENT NAME	STUDENT NO.	SUBJECT A	SUBJECT B
JOAN	1	70.5	85
TANIA	2	49	75
TOM	3	53	54
JEFF	4	80	49.5
SUSAN	5	89	90
KATHY	6	99	55
RAYMOND	7	22.5	75

The above information should be saved in a data file that you need to create with the exact above format. Write a C program to read the above information from this data file and do the following steps:

a) Calculate who obtained the diploma (Identity names, grades).
b) Arrange subject A in ascending order (you should identify student name, student ID and subject B).
c) Calculate the average and standard deviation of each subject.
d) The above given data should be read from an external file. The data should be saved in the format shown in the example below and should be displayed once you run the program. Also, your output should be displayed on the screen as well as copied to an external file.
e) Your program should have an easy to use interface.

Note: Your program should be properly commented, and you need to have a typed-up cover page, indicating Course, Program No., Your Name, and the actual date submitted.

YOUR PROGRAM SHOULD CONTAIN PROGRAMMING MODULES (FUNCTIONS).

 You can use C running on your laptop or use one of the University machines. Whichever machine you use, you should be able to demo it to me using a laptop.
This assignment MUST be your own work. Plagiarism will not be tolerated.
File format to be followed for the assignment:

Please enter input file name: lab1.txt
Lab1.txt:

STUDENT NAME	STUDENT NO.	SUBJECT A	SUBJECT B
JOAN	1	70.5	85
TANIA	2	49	75
TOM	3	53	54
JEFF	4	80	49.5
SUSAN	5	89	90
KATHY	6	99	55
RAYMOND	7	22.5	75

Please enter a command (enter h for help):h
a/1 to obtain all the students that got diploma
b/2 to arrange subject A in ascending order
c/3 to calculate the average and standard deviation
d/4 to save all the above results in an output file
e to exit

Please enter a command (enter h for help):1
All the students that diploma:

STUDENT NAME	SUBJECT A	SUBJECT B
JOAN	70.5	85

…

Please enter a command (enter h for help):2
Subject A in ascending order

STUDENT NAME	SUBJECT A	SUBJECT B
RAYMOND	22.5	75

…

*All students must follow the format shown above for the sake of uniformity and ease of use. Each command that you enter, the result should be echoed to the screen with the above format as well as save in an output data file.