

Home Assignment 1

Instructions:

5 marks

1. Answer all questions.
2. Submit before 5th July 2015, 11.59 pm.
3. Submissions should be in zip format , which includes your codes in C(.C file), input file(if required) and files having your output (**i.e your code should write the output in a text file**). Name your files as name_questionnumber. Eg. MeghaSinha_2.c, MeghaSinha_2_input.txt, MeghaSinha_2_output.txt
4. Please comment your code properly.
5. Use backpack for any discussion related to the assignment

1. Input an array A[] from the user. Write a function that segregates even and odd numbers. The functions should put all even numbers first, and then odd numbers. **(1 mark)**
Example
Input = {12, 34, 45, 9, 8, 90, 3}
Output = {12, 34, 8, 90, 45, 9, 3}
2. Read a file with the names and marks of the students in a class. Output the following: write an output file with the following, a) A list of students and marks sorted in a decreasing order of the marks and b) Average score for the class. The input and output file names should be argument to your main function. So if I write “./a.out a b”, a is the name of the input file and b is the output file. You could use your own input file with rows containing name, marks of students. Submit this input file as well. **(2+1=3 marks)**
3. Write a program to shuffle two arrays into a single array. Arrays can be of different length. Make the user input the two arrays. Shuffling should be in such a way as to minimize the number of consecutive elements from the same array. This is similar to shuffling a deck of cards.
Example
Array 1: [1,2,3,4]
Array 2: [5,6,7,8,9]
Output: [5,1,6,2,7,3,8,4,9]
Even better Output: [7,3,5,1,9,2,8,4,6]
PS: This is an open to interpretation question, where you can write an algorithm which should be as good as possible to simulate a fair real world shuffle.
Bonus marks for innovative shuffling algorithm. **(1 mark + Bonus 1 mark)**