Mid Term SET A

CSE 1112 Structured Programming Language Laboratory

Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules.

Submit the .c file, where you write the actual code. Do NOT submit .o, .exe, .txt, .pdf, .docx etc.

Q1. Write a Program that will take an array **A** of size **N** as input. After that it will take a number **X** as input and manipulate the array **X (<n)** times. Manipulating an array *i* th time means finding the maximum element within index *i-1* to *n-1* of the array and swapping it with the *i-1* th element of an array.

For example, if array is `[1, 3, -5, 8, 7]`, then

- manipulating it 1st time means finding max *within index 0 to 4*, which is 8, and swapping with **a[0]**, which results in `[8, 3, -5, 1, 7]`.
- manipulating it 2nd time means finding max *within index 1 to n*, which is 7, and swapping it with **a[1]**, which results in `[8, 7, -5, 1, 3]`.

Sample Input	Sample Output
5	8 3 -5 1 7
1 3 -5 8 7	8 7 -5 1 3
3	8 7 3 1 -5
5	4 2 3 1
1 2 3 4	4 3 2 1
3	4 3 2 1

Q2. [10 Marks] Write a Program to Assist Harry identify all of the Cool Numbers between two ranges. Cool numbers are those numbers which have following CONDITIONS:

- Its last digit is a prime number
- There are even number of Even digits

For Example: 5812 is a Cool Number since

- Its last digit 2 is a prime number
- It has 2 Even digits 8 and 2.

Hint: You may need to use a 1D array to print the output in the given (sample output) format.

Sample Input	Sample Output
1000 1400	11: 1003 1005 1007 1012 1023 1025 1027 1032 1043 1045 1047
1 50	11: 3 5 7 13 15 17 22 33 35 37 42

Q3. [10 Marks] WAP that calculates the average of the first n terms of the following series:

$$1\ \ 3\ \ 7\ \ 13\ \ 21\ \ 31\ \ 43\ \ 57\ \ \dots$$

2 4 6 8 10

Sample Input	Sample Output
10	1 3 7 13 21 31 43 57 73 91
	34