Mid Term SET B

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. [10 Marks] 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** times. Manipulating an array once means changing each array element with an cumulative sum.

For example, If the array is **[2, 3, -5, 1]**, then

- manipulating it 1st time means [2, 2+3, 2+3-5, 2+3-5+1], which is **[2, 5, 0, 1]**
- manipulating it 2nd time means [2, 2+5, 2+5+0, 2+5+0+1], which is **[2, 7, 7, 8]**

Sample Input N A[1] A[2] … A[N] **X**	**Sample Output**
4 2 3 -5 1 **2**	2 5 0 1 2 7 7 8
4 1 2 3 4 **3**	1 3 6 10 1 4 10 20 1 5 15 35

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

- Starts with 1 and ends with 2
- Sum of the Square of odd digits is divisible by 3

For Example: 1512 is a Dementor Number since

- Starts with 1 and ends with 2
- Sum of the Square of odd digits: $(1)^2 + (5)^2 + (1)^2 = 1 + 25 + 1 = 27$ is divisible by 3

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	3: 1112, 1152, 1172
10000 11000	9: 10112, 10152, 10172, 10512, 10552, 10572, 10712, 10752, 10772

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

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1 -4 10 -19 31 -46 …
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Sample Input	Sample Output
10	1 -4 10 -19 31 -46 64 -85 109 -136 Sum -75