CSE 1112: Structured Programming Language Lab (Q) , Spring 2025

Home Assignment

Total Marks : 15 (7+8)

<table>
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<td>1</td>
<td>
Write a C program that performs the following tasks using functions:

In the main function, the user will input n integers into an array named ArrayA.
For each number in ArrayA, the program will calculate the sum of its digits using the function: int sumOfDigits(int num).
The digit sums will be stored in a new array named ArrayB.
The program will check which numbers in Array B are prime numbers using the function: int isPrime(int num) on each of the numbers in the array.
The program will print only the prime numbers from Array B.
If none of the numbers in Array B are prime, the program should display: "No prime numbers found in the digit sums."

Read the following function descriptions carefully:
(You must define and use all of the following functions)

int getRemainder(int x, int n)
Returns the remainder when x is divided by n.
int getQuotient(int x, int n)
Returns the quotient when x is divided by n.
int sumOfDigits(int num)
Returns the sum of all digits of num.
This function must use only getRemainder() and getQuotient() to process digits.
Do not use the % or / operators directly.
int isPrime(int num)
Returns 1 if the number is a prime number, otherwise returns 0.

Note : DO NOT USE ANY OTHER ADDITIONAL USER DEFINED FUNCTIONS.
<table>
<tr><th>Sample Input /Output 1</th><th>Sample Input /Output 2</th></tr>
<tr><td>Enter the size of the array: 4
Enter 4 numbers: 23 81 55 44
Sum of digits array (B): 5 9 10 8
Prime numbers in the sum array: 5</td><td>Enter the size of the array: 3
Enter 3 numbers: 40 80 100
Sum of digits array (B): 4 8 1
No prime numbers found in the digit sums.</td></tr>
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<td>7</td>
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<td>2</td>
<td>Written quiz (based on the assignment and assignment related concepts)</td>
<td>8</td>
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