

Lakehead University
Department of Computer Science
COMP-1411 – Computer Programming I
Fall 2021

Assignment 4 [20 Points]

Due: November 01st, 2021, at 11:55 PM

Note: Read the document of assignment expectations from the course account on D2L.

File (assignment) submission instructions:

- Submit a file using the link provided under 'Assignment' tab for the assignment 4 in the course account on D2L.
- The file name for the problem will be numberDescription.c

[20 points] Write a program in C that prompts the user to input a positive integer and then displays both the individual digits of the number and the sum of the digits. The program also displays the list of prime numbers up to the sum value.

For example, the program will output for the integer 3456, the individual digits 3 4 5 6 and the sum of 18. The program also displays the list of prime numbers up to 18 e.g., 2, 3, 5, 7, 11, 13, 17. In addition, the output shows that 3456 is not a palindrome. If the user enters a non-positive integer, the program will display an error message. In addition, your program must prompt the user to see if they wish to process another number.

Your program must contain the following user-defined functions:

- **digitSum** – this function takes a positive number from the user and displays the individual digits and the sum of the individual digits. This function will call **listOfPrime** function to find the list of prime numbers.
- **listOfPrime** – this function is called by the **digitSum** function and displays the list of prime numbers up to the sum value of the individual digits.

- **isPalindrome** – this function receives the user input as a parameter and determines whether the input number is palindrome or not. Note that a number is palindrome if the number remains the same when the digits are reversed.