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**Computer Science Department**

**COMP133 ( Spring 2020 )**

**Assign # 4 Due Date: Thursday 30/4/2020 by 10:00 pm ( on Ritaj )**

***Notes:***

1. ***The assignment should be submitted by the due date and time ( Late Assignments will not be accepted for any reason ) on Ritaj.***
2. ***The assignments are individual effort and copying the assignment will be treated as a cheating attempt, which may lead to FAILING the course.***

Write a C program that reads an ***unspecified*** number of integers from a file called ***nums.txt*** ( **up to a maximum of 100 numbers** ) and stores those numbers in an array. Your program should then print to the screen the number with the maximum sum of divisors as well as its position in the array in main.

Your program should include and use ***the following two functions:***

1. function ***sum\_of\_divs*** which takes any integer and returns the sum of its divisors ( e.g. for the number 20 the function should return the value 42 which is 1+2+4+5+10+20).
2. function ***max\_sum\_and\_pos*** which takes the array of integers as input and returns **both** the **number** (not the sum) with the maximum sum of divisors as well as its position in the array.

**Example of a Sample Run :**

Assume that the file ***nums.txt*** has the following **6** numbers ( nums.txt can have up to a 100 numbers **which means your array size should be defined as 100**):

53 61 40 83 49 44

your program should print the following to the screen:

The number with max sum of divisors is 40 at position 2 in the array.

***VERY IMPORTANT:***

1. Turn in your assignment by ***replying to the course coordinator’s message*** on Ritaj and attaching your code file (***main.c***). You ***should NOT*** include the file ***nums.txt***.
2. ***DO NOT SEND a MESSAGE To YOUR INSTRUCTOR WITH YOUR ASSIGNMENT. DOING so will RESULT in RECEIVING a GRADE of ZERO for the assignment even if YOU TURN it in by the due date and time.***
3. You must include your full name, student id number, and ***lab section number*** in a comment at the beginning of your ***main.c*** code file.