North South University
Course Title: CSE115, Final Exam, Full Points: 60
Duration: 1Hr 20 minutes (with upload)

(15 points)

1) Declare an integer array of size 5 and take input from the users (Consider all elements to be unique.) **Find the maximum element in the array and then check if it is divisible by all other elements in the array.** If the maximum is divisible by all other elements, then display **"Good Maximum"** else display **"Bad Maximum"**

Sample Array inputs: 1 100 5 50 20
Output: 100, Good Maximum.

(20 points)

2) A palindrome is a string that reads the same both forward and backward. Some examples are
"ABBA" "123343321" "otto"

Write a **function** that takes a string as an argument and returns the int value 1 if the string is a palindrome and returns 0 otherwise.

Write another function to find palindrome string and **modify** it so that **blanks** are ignored in the matching process . Under these rules, the following are examples of palindromes: "a man a plan a canal panama" "ott o"

(20 points)

3) You will create a record system for a car shop. Now write a full code that will contain all the following measures.
a) **Design** a structure **Car** with the following members: Company, model, price. Suppose the system can hold a maximum of 100 cars.

b) **Populate** the record system for a given number of cars (the number of cars chosen by the user) and **display** the models of all cars currently in the system. Store the car information from the array into a **text file**.

c) Write a **function** to read information from the text file and then **display** the details of the car with the **highest price** [consider all car price is unique]

NB: You may not use global variables. You should not use fread() and fwrite() function.

4) Find the product of the following series using recursion (comment your base case and general case)**:** **(5 points)**

1*1/2*1/3*1/4*1/5……..1/n

Best of Luck