North South University
CSE115, Assignment 3, Summer 2021,
Due: September 13th, 2021.

Pointer:

1)Implement the following function which finds the largest element in an array (use pointer)

int max(int *p, int size);

2)Implement the following function which finds the length of a string using pointer operation.

int length(char *s);

Structure:

3) Create a structure called **Patient** with the following members:
Registration_Number, Name, Age, Gender, Contact Number, Physician_name [(3): all 3 names need not be filled initially], Corona_status (had corona in the past or not).

Assume that there will not be more than **50 patients** in the hospital on a single day. Since people who had corona in the past might have complications, so in order to visit a physician, each patient need to inform whether he/she had corona in the past or not. **Populate** the array with information of **n** number of patients (the number **n** is provided by user). You may write a menu driven program or you may make function calls from main (). [**Use of global variable is not recommended for this question**].

a) Write a function to **display** names and registration number of all patients (who had corona in the past) in the **n** number of patients in the array.

b) Write a function to **append** patient information at the end of the array. [You should have condition to check array bounds]

c) Write a function to **delete** patient information given a name by the user. [Consider all names are unique].

d) Write a function to **modify** contact number member and physician_name member of a record **given a registration number of the patient.**

4). Create a structure called **Player** with the following members. struct Player {char name [20]; int age; char country [20]; char Position [20]; double Salary; double Rating; }; First, create an array of Player structures. Now, write a function that takes an array of Player structure as input and find out the highest paid player among all the players.

void highestPaidPlayer (struct Player *pl, int size);

NB: You should send the first address of the array in your function call and the pointer **pl** in the function header will accept it.

File:

5)Create a file named countline.txt.
Insert the lines:
test line 1
test line 2
test line 3
test line 4
Write a program in C to display the content of the file and number of lines in a Text File. [Hint: Consider that the lines in your file has fixed length and your buffer size is big enough to accommodate each line]

Test Data:
Input the file name to be opened: countline.txt
Expected Output:
The content of the file test.txt are:
test line 1
test line 2
test line 3
test line 4
The lines in the file are: 4

6)Write a program in C to count a number of words and characters in a file.

Test Data:
Input the file name to be opened: test.txt
Expected Output: The content of the file test.txt are: test line 1 test line 2 test line 3 test line 4
The number of words in the file test.txt are: 12
The number of characters in the file test.txt are: 36

7) typedef struct {
char name[50];
int id;
char dept[20];
double cgpa;
} student;
Write a function **void saveByDept(char *fileName, char *deptName , student allStudents[], int size)** that will save the information of all students who belong to the department with name pointed to by deptName into a text file. The name of the file is given as an input parameter, filename

Recursion:

8) Write a program in C to calculate the power of any number using recursion