

## Programming Fundamentals (CL-1002)

### Lab 11

#### Instructions:

1. Solve each problem in separate file, Name the code file with problem no (Task\_01, Task\_02,..)
2. Copy these files (Task\_01, Task\_02,..) in a folder and name the folder like that K22XXXX. where XXXX is your 4-digit Student Id.
3. Now compress that folder using WinRAR software and submit on google-classroom.
4. Do not attach .exe file, otherwise it will show a threat or virus and not allow me to download.
5. Make sure you must Press the Turn-In button after uploading the solution folder. Otherwise, it will not be submitted.

#### **Task\_01:**

Write a program to implement the exchange or swap the values of 3 variables{a,b,c}. To implement this, you need to write a function called swaped().

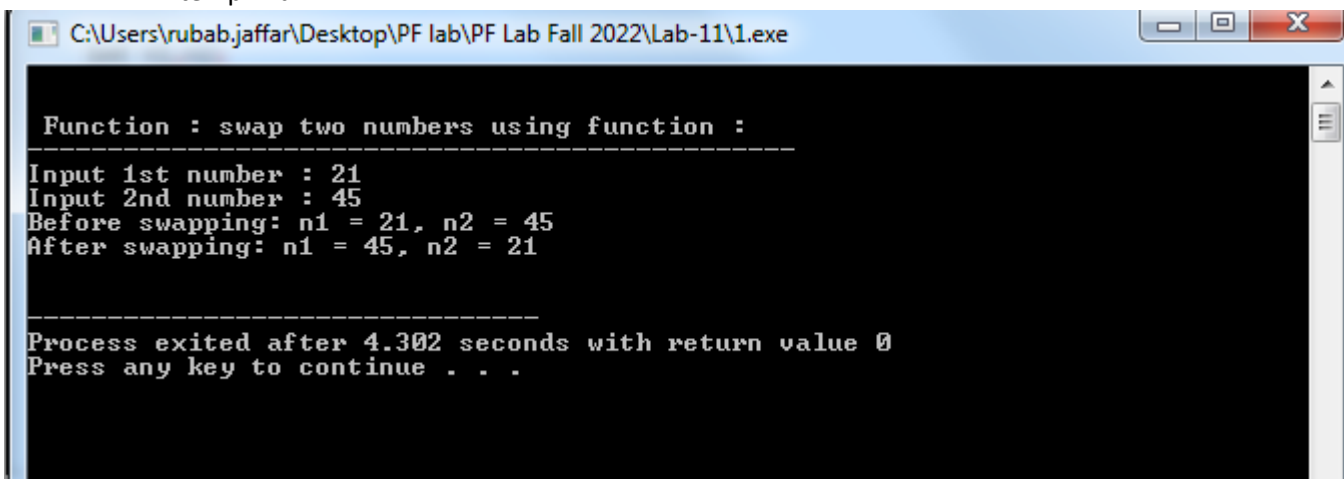
```
void swaped(int *aPtr, int *bPtr, int *cPtr);
```

such that; b ----> temp

a ----> b

c ----> a

temp -> a



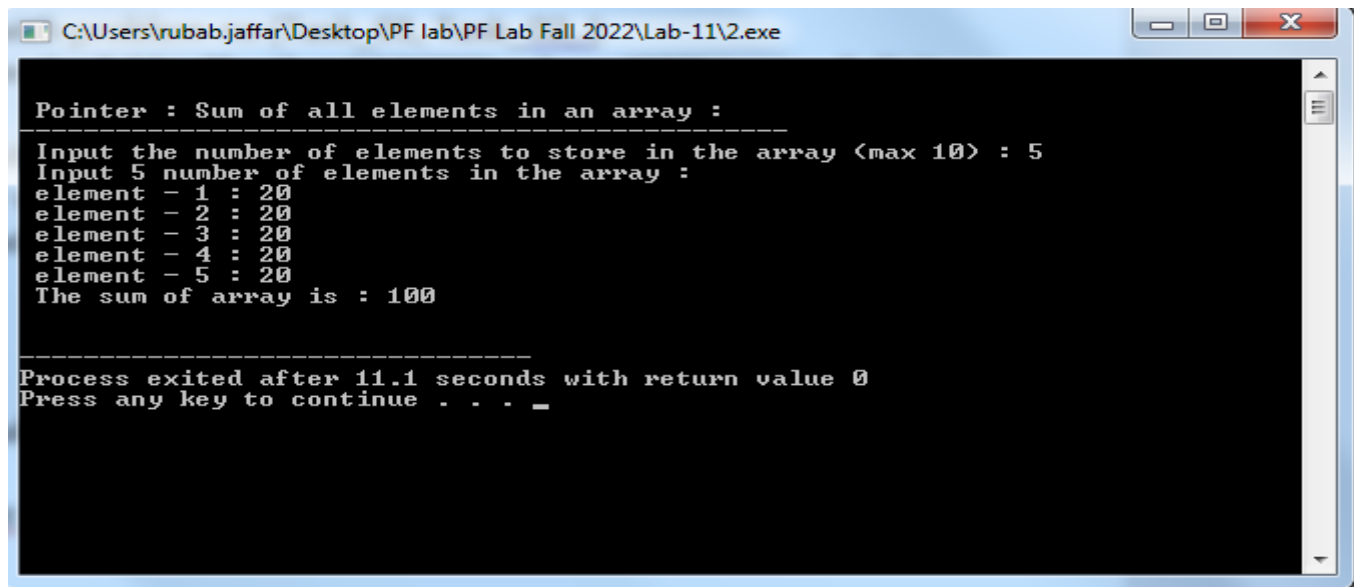
```
C:\Users\rubab.jaffar\Desktop\PF lab\PF Lab Fall 2022\Lab-11\1.exe

Function : swap two numbers using function :
-----
Input 1st number : 21
Input 2nd number : 45
Before swapping: n1 = 21, n2 = 45
After swapping: n1 = 45, n2 = 21
-----

Process exited after 4.302 seconds with return value 0
Press any key to continue . . .
```

#### **Task\_02:**

Write a program that calculates the sum of all the elements in array using pointers.



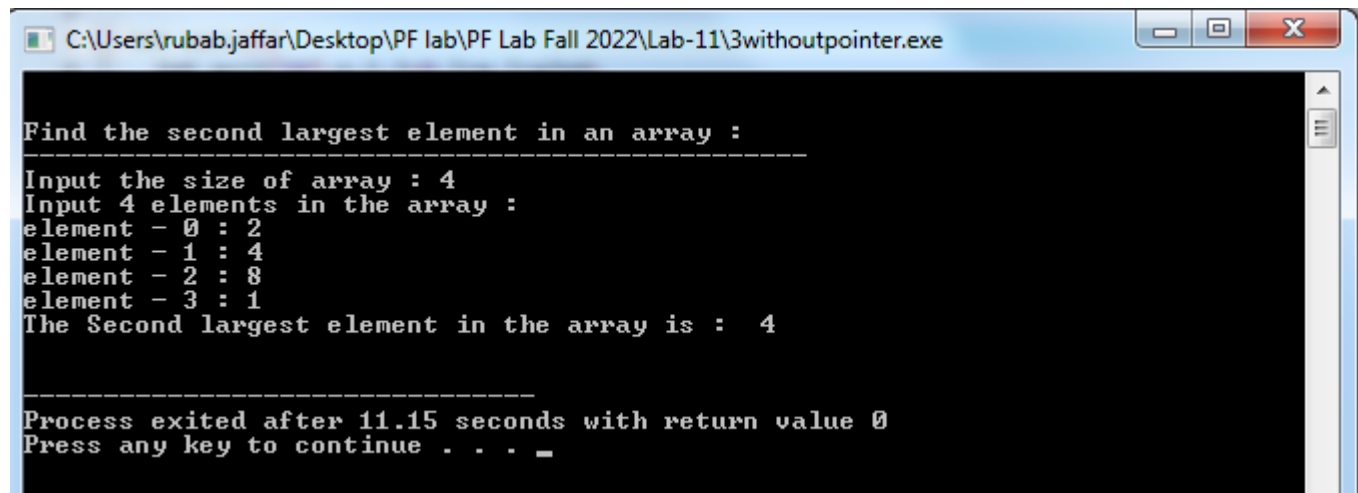
```
C:\Users\rubab.jaffar\Desktop\PF lab\PF Lab Fall 2022\Lab-11\2.exe

Pointer : Sum of all elements in an array :
-----
Input the number of elements to store in the array <max 10> : 5
Input 5 number of elements in the array :
element - 1 : 20
element - 2 : 20
element - 3 : 20
element - 4 : 20
element - 5 : 20
The sum of array is : 100
-----

Process exited after 11.1 seconds with return value 0
Press any key to continue . . .
```

### Task\_03:

Write a program that finds the second highest number in a float type array of 20 elements using pointer.



```
C:\Users\rubab.jaffar\Desktop\PF lab\PF Lab Fall 2022\Lab-11\3withoutpointer.exe

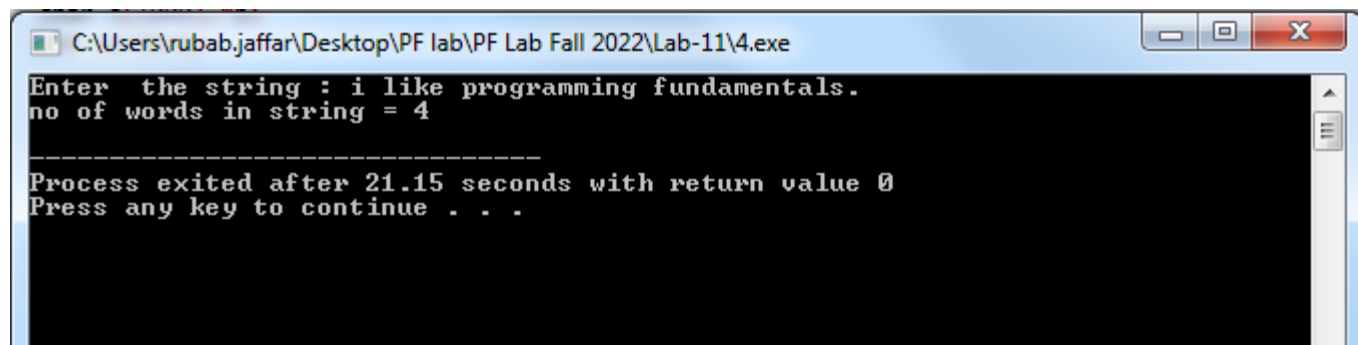
Find the second largest element in an array :
-----
Input the size of array : 4
Input 4 elements in the array :
element - 0 : 2
element - 1 : 4
element - 2 : 8
element - 3 : 1
The Second largest element in the array is : 4

-----
Process exited after 11.15 seconds with return value 0
Press any key to continue . . . _
```

### Task\_04:

Write a program that implements the function(WordCount).

```
int WordCount(char *Text, int *size);
```



```
C:\Users\rubab.jaffar\Desktop\PF lab\PF Lab Fall 2022\Lab-11\4.exe

Enter the string : i like programming fundamentals.
no of words in string = 4

-----
Process exited after 21.15 seconds with return value 0
Press any key to continue . . . _
```

### Task\_05:

Write a program that implements the SortFunction that takes argument pointer to an array, size of the array and the order in which it is going to be sort. Such as, 1 for Ascending order and 2 for Descending orde. Finally, print this array in Main() to check.

```
void SortFunction(int *arr, int *size, int order);
```

### Task\_06:

Write a program that takes N no of character in an array. Now you need to correct the array and convert it into the Sentence Case. To correct that, you need to pass that array to a function using pointer.

```
void SentenceCase(char *Text, int *size);
```

In the end you need to print the array in Main() to check.

**Sentence Case:** You capitalize just the first letter of the first word in sentence. The rest of the words and letters in the title should not be capitalized. Also the first letter after the fullstop(.)

### Task\_07:

Write a program that ask the user to enter the total 'N' no of characters in user's name {First Name + Last Name} to create a dynamic array of characters. After create a dynamic array of that 'N' no of characters using malloc or calloc function. Finally copy your full name in it that has already been taken from the user before

Dynamic Array = " Jawwad Ahmed";

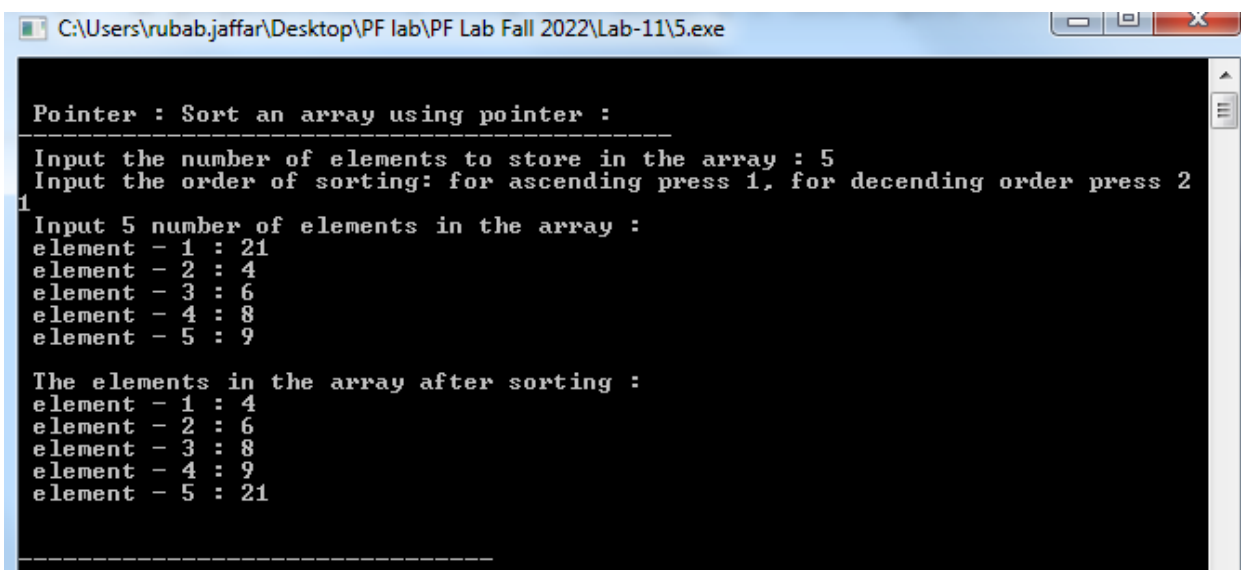
### Task\_08:

Using Qus. 9, resize that dynamic array of character and append the array with your studentId. That student id must be taken input from the user.

DynamicArray = " Jawwad Ahmed"; // Before

DynamicArray = "K221234 Jawwad Ahmed"; // After the text append

### Q 5 Output:

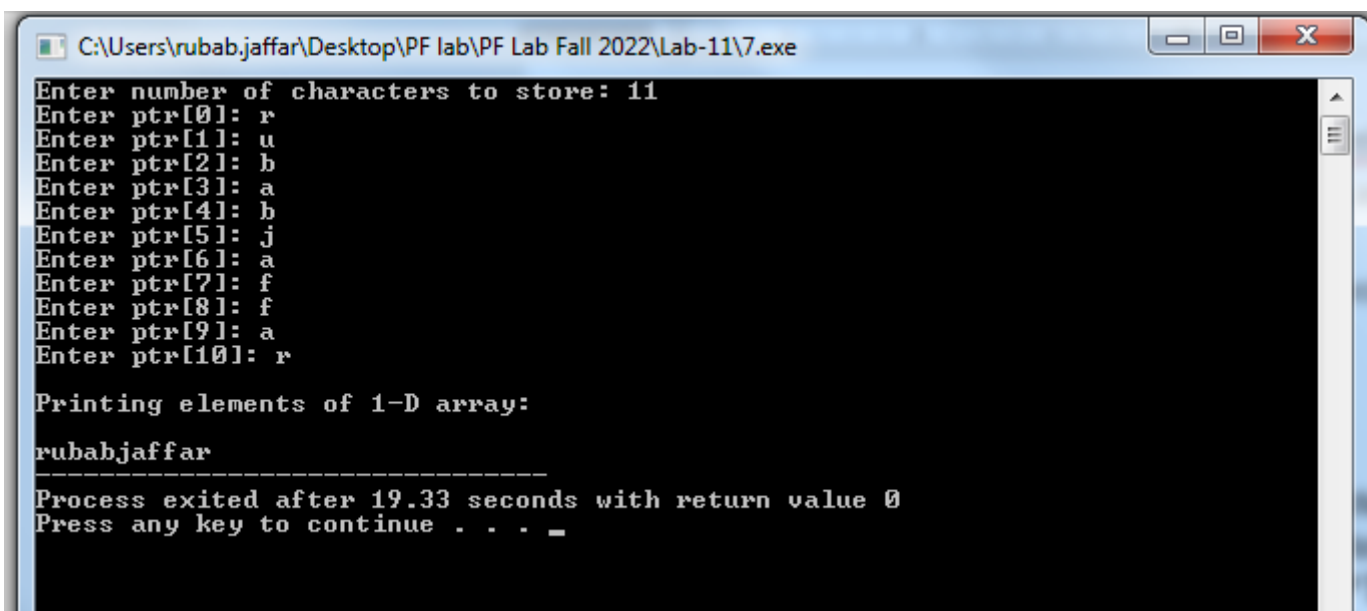


```
C:\Users\rubab.jaffar\Desktop\PF lab\PF Lab Fall 2022\Lab-11\5.exe

Pointer : Sort an array using pointer :
-----
Input the number of elements to store in the array : 5
Input the order of sorting: for ascending press 1, for decending order press 2
1
Input 5 number of elements in the array :
element - 1 : 21
element - 2 : 4
element - 3 : 6
element - 4 : 8
element - 5 : 9

The elements in the array after sorting :
element - 1 : 4
element - 2 : 6
element - 3 : 8
element - 4 : 9
element - 5 : 21
-----
```

### Q 7 Output:



```
C:\Users\rubab.jaffar\Desktop\PF lab\PF Lab Fall 2022\Lab-11\7.exe

Enter number of characters to store: 11
Enter ptr[0]: r
Enter ptr[1]: u
Enter ptr[2]: b
Enter ptr[3]: a
Enter ptr[4]: b
Enter ptr[5]: j
Enter ptr[6]: a
Enter ptr[7]: f
Enter ptr[8]: f
Enter ptr[9]: a
Enter ptr[10]: r

Printing elements of 1-D array:
rubabjaffar
-----
Process exited after 19.33 seconds with return value 0
Press any key to continue . . . _
```

### Q 8 Output:

C:\Users\rubab.jaffar\Desktop\PF lab\PF Lab Fall 2022\Lab-11\7.exe

```
Enter ptr[1]: 1
Enter ptr[2]: k
Enter ptr[3]: 4
Enter ptr[4]: 8
Enter ptr[5]: 8
Enter ptr[6]: 8
Enter ptr[7]: r
Enter ptr[8]: u
Enter ptr[9]: b
Enter ptr[10]: a
Enter ptr[11]: b
Enter ptr[12]: j
Enter ptr[13]: a
Enter ptr[14]: f
Enter ptr[15]:
f
Enter ptr[16]: a
Enter ptr[17]: r
```

Printing elements of 1-D array:

```
21k4888rubabjaffar
-----
```

Process exited after 29.38 seconds with return value 0  
Press any key to continue . . .