Bahria University,

Karachi Campus

LAB EXPERIMENT NO. _07_
LIST OF TASKS

TASK NO	OBJECTIVE
Task 1	Find the length of the string (the String should be inserted by the user).
Task 2	Take 2 strings as an input and concatenate them.
Task 3	Write a C++ that contain two strings: String1= "A **line** is the path of one point moving.". String2 = "line is a type of geometric figure" perform following functions on these strings: 1. strfind( ) on String1.// line 2. Substr()on string 1 // point moving 3. strlen() on String1 and String2 4. insert() " Despicable me!!" in String2 5. remove() "type" from String2 6. replace() "moving" from String1 and insert " Despicable me!!" in String1. 7. Copy () "line is the path" from String 1 to String2.
Task 4	Take a loop which will read characters from cin until the user signals the end of data input (<Ctrl>-z in Windows) and count the number of characters read in. It also sends a copy of each character to cout.
Task 5	Get a character ch from user and returns true if ch is a lowercase alphabetic character or false if it is not. (hint: islower())
Task 6	**N/A**
Task 7	N/A
Task 8	N/A

Submitted On:

__14/05/2020__

(Date: DD/MM

Task No. 1: Find the length of the string (the String should be inserted by the user).

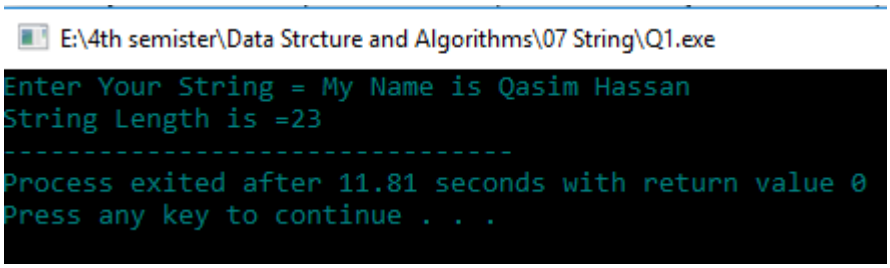
Coding:

Q1.cpp | Q2.cpp | Q3.cpp | Q4.cpp | Q5.cpp

```cpp
#include <iostream>
#include <string>
using namespace std;

int main()
{
    string str1;
    cout << "Enter Your String = ";
    getline(cin, str1);
    cout << "String Length is =" << str1.length();
    return 0;
}
```

Output:



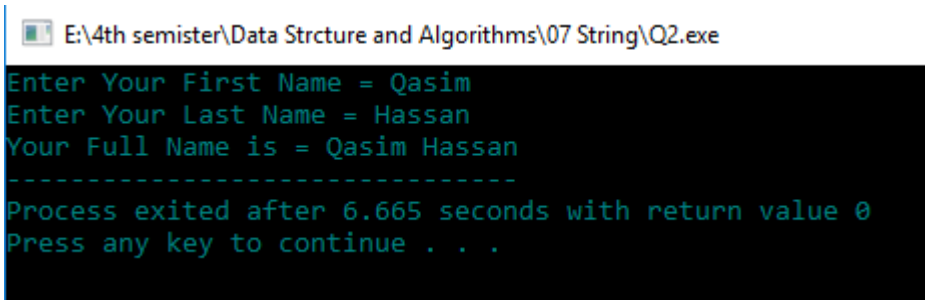
Task No. 2: Take 2 strings as an input and concatenate them.

Coding:

Q1.cpp | Q2.cpp | Q3.cpp | Q4.cpp | Q5.cpp

```cpp
#include <iostream>
#include <string>
using namespace std;
int main()
{
    string str1,str2,result;
    cout << "Enter Your First Name = ";
    getline(cin, str1);
    cout << "Enter Your Last Name = ";
    getline(cin, str2);
    str1.insert(str1.length(), " ");
    cout << "Your Full Name is = "<<str1 + str2;
}
```

Output:



Task No. 3:

Write a C++ that contain two strings:

String1= “A **line** is the path of one point moving.”.

String2 = “line is a type of geometric figure”

perform following functions on these strings:

1. strfind( ) on String1.// line
2. Substr()on string 1 // point moving
3. strlen() on String1 and String2
4. insert() “ Despicable me!!” in String2
5. remove() “type” from String2
6. replace() “moving” from String1 and insert “ Despicable me!!” in String1.

Copy () “line is the path” from String 1 to String2.

Coding:

Q1.cpp | Q2.cpp | [*] Q3.cpp | Q4.cpp | Q5.cpp

```cpp
#include <iostream>
#include <string>
using namespace std;
int main()
{   string str1, str2, substring,copy;
    //given Strings
    str1 = "A line is the path of one point moving";
    str2 = "line is a type of geometric figure";
    //display
    cout << "String 1 = A line is the path of one point moving..."<<endl;
    cout << "String 2 = line is a type of geometric figure..."<<endl;

    //finding word "line"
    cout << "'line' found at : " << str1.find("line") << " in String 1"<<endl;

    //substring Function
    substring = str1.substr(str1.find("point moving"), str1.find("point moving") + 12);
    cout << "Sub String : " << substring<<endl;

    //length of both strings
    cout << "Length Of string 1 = " << str1.length()<<endl;
    cout << "Length Of string 2 = " << str2.length()<<endl;

    //using removw function
    cout << "Removing 'type' from string 2" << endl;
    str2.erase(str2.find("type"),4);
    cout <<"New String 2 :"<< str2 << endl;
```

```
28
29      //using replace function
30      cout << "Replacing “moving” from string 1 with “ Despicable me!!” "<<endl;
31      str1.replace(str1.find("moving"), 6, "Despicable me!!");
32      cout << "New string will be :" << str1 << endl;
33
34      //using copy function
35      cout << "Copy “line is the path” from string 1 to string 2" << endl;
36      copy = str1.substr(str1.find(" line is the path"), str1.find(" line is the path") + 17);
37
38      return 0;
```

Output:

```
E:\4th semister\Data Strcture and Algorithms\07 String\Q3.exe
String 1 = Aálineáis the path of one point moving...
String 2 = line is a type ofágeometric figure...
'line' found at : 2 in String 1
Sub String : point moving
Length Of string 1 = 38
Length Of string 2 = 34
Removing 'type' from string 2
New String 2 :line is a  of geometric figure
Replacing ômovingö from string 1 with ô Despicable me!!ö
New string will be :Aálineáis the path of one point Despicable me!!
Copy ôline is the pathö from string 1 to string 2
```

Task No. 4: Take a loop which will read characters from cin until the user signals the end of data input (<Ctrl>-z in Windows) and count the number of characters read in. It also sends a copy of each character to cout.

Coding:

Q4.cpp

```
1   #include<iostream>
2   using namespace std;
3   int main()
4   {
5       int MAX=1000;
6       char input[MAX];
7       int count=0;
8       cout<<"-------------------------------------------------------------------------------------------"<<endl;
9       cout<<"\t\tCOUNTING OF CHARACTERS UNTIL USER ENTER (Ctrl+Z)"<<endl;
10      cout<<"NOTE: \n\t1-Size of input array is "<<MAX<<"."<<endl;
11      cout<<"\t2-Counting Should be done the counter at the backend upon (ctrl+ Z) you will se the total count "<<endl;
12      cout<<"-------------------------------------------------------------------------------------------"<<endl;
13      cout<<"Enter characterized input."<<endl;
14      for (int i=0;i<MAX;i++)
15      {
16          cin>>input[i];
17          if(input[i]==(!cin.eof()))
18          {
19              cout<<"ALERT! Signal input stops bY user through (ctrl +Z)"<<endl;
20              break;
21          }
22          else
23          {
24                  count=count+1;
25          }
26      }
27      cout<<"-------------------------------------------------------------------------------------------"<<endl;
28      cout<<"Copy of every character input is: "<<endl;
29      for (int i=0;i<count;i++)
30      {
31          cout<<input[i]<<" ";
32      }
33      cout<<endl;
34      cout<<"Number of characters is "<<count<<"."<<endl;
35      return 0;
36  }
```

Output:

```
E:\4th semister\Data Strcture and Algorithms\07 String\Q4.exe
--------------------------------------------------------------------------------
                COUNTING OF CHARACTERS UNTIL USER ENTER (Ctrl+Z)
NOTE:
       1-Size of input array is 1000.
       2-Counting Should be done the counter at the backend upon (ctrl+ Z) you will se the total count
--------------------------------------------------------------------------------
Enter characterized input.
QASIM HASSAN
^Z
ALERT! Signal input stops bY user through (ctrl +Z)
--------------------------------------------------------------------------------
Copy of every character input is:
Q A S I M H A S S A N
Number of characters is 11.

--------------------------------
Process exited after 7.14 seconds with return value 0
Press any key to continue . . .
```

Task No: 05 Get a character ch from user and returns true if ch is a lowercase alphabetic character or false if it is not.(hint : islower())

	Function	Checks
•	isalpha()	is the parameter alphabetic ('A'..'Z' or 'a'..'z')
•	isdigit()	is the parameter a digit (0..9)
•	isalnum()	is the parameter alphabetic or a digit
•	isspace()	is the parameter a space (' ')
•	ispunct()	is the parameter a piece of punctuation
•	islower()	is the parameter a lowercase alphabetic character ('a'..'z')
•	isupper()	is the parameter an uppercase alphabetic character ('A'..'Z')

Coding:

Q1.cpp | Q2.cpp | Q3.cpp | Q4.cpp | Q5.cpp

```cpp
#include <iostream>
using namespace std;
int main()
{
    char val1 = 's';
    char val2 = '1';
    char val3 = '1a';
    char val4= ' ';

    //checking Alphabat
    if(isalpha(val1))
    { cout << "The character is an alphabatic = "<<val1 << endl; }
    else
    { cout << "The character is not an alphabatic = " << val1 << endl; }

    //checking digit
    if (isdigit(val2))
    { cout << "The character is a digit =  " << val2 << endl; }
    else
    { cout << "The character is not a digit = " << val2 << endl; }
```

```
22      //checking number
23      if (isalnum(val3))
24      { cout << "The character is a number = " << val3 << endl; }
25      else
26      { cout << "The character is not a number = " << val3 << endl; }
27
28      //checking space
29      if (isspace(val4))
30      { cout << "The character is a space = "  << endl; }
31      else
32      { cout << "The character is not a space = " << endl; }
33
34      return 0;
35
36  }
```

Output: