PSP LAB Assignment

Roll No.:-SGMC21107

By   :-Sagar Gupta

Date   :-01-12-2021

Q-1

```cpp
VSS Codes > 01-12 > C+ Ques1.cpp > ⊘ main()
1    /* Q-1  Write a C/C++ program to check whether a given substring is present in the given string.
2          Without using in built function (i.e. strstr( ) )for substring finding.
3          Test Data :
4          Input the string : This is a test string.
5          Input the substring to be search : search
6          Expected Output :
7          The substring is not exists in the string.*/
8
9
10   #include<iostream>
11   #include<string>
12   using namespace std;
13
14   int main()
15   {
16       string s,q="",t;
17       cout<<"Enter a String :";
18       getline(cin,s);
19       cout<<"Enter a substring to be Found in String :";
20       getline(cin,t);
21
22       int a=s.length(),b=t.length(),i,j;
23
24       for(i=0;i<a-b;i++)
25       {
26           for(j=0;j<b;j++)
27           {
28               if(s[i+j]!=t[j])
29               {
30                   break;
31               }
32           }
33           if(j==b)
34           {
35               cout<<"The substring exists in the string ";
36               break;
37           }
38       }
39       if(i==a-b)
40       {
41           cout<<"The substring is not exists in the string ";
42       }
43       return 0;
44   }
```

OutPut

```
PS D:\VSS Codes\01-12> cd "d:\VSS Codes\01-12\" ; if ($?) { g++ Ques1.cp
Enter a String :This is a test string.
Enter a substring to be Found in String :search
The substring is not exists in the string
PS D:\VSS Codes\01-12>
```

Q-2

```cpp
/* Q-2 Write a program in C/C++ to find the largest and smallest word in a string.
Test Data :
Input the string : It is a string with smallest and largest word.
Expected Output :
The largest word is 'smallest'
and the smallest word is 'a' */

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

int main()
{
    string s;
    string q[100];
    cout<<"Enter a String :";
    getline(cin,s);
    int a=s.length(),z=0;
    for(int i=0;i<a;i++)
    {
        if(s[i]!=' ')
        {
            q[z]=q[z]+s[i];
        }
        else{
            z++;
        }
    }
    string large=q[0],small=q[0];
    for(int i=0;i<=z;i++)
    {
        if(q[i].length()>large.length())
        {
            large = q[i];
        }
        if(q[i].length()<small.length())
        {
            small = q[i];
        }
    }
    cout<<"The largest word is : "<<large<<endl;
    cout<<"The smallest word is : "<<small<<endl;
    return 0;
}
```

OutPut

```
PS D:\VSS Codes\01-12> cd "d:\VSS Codes\01-12\" ; if ($?) { g++ Ques2.
Enter a String :It is a string with smallest and largest word
The largest word is : smallest
The smallest word is : a
PS D:\VSS Codes\01-12>
```

Q-3

```cpp
1   /*Write a program in C/C++ to make the words   lowercase and
2    Uppercase alternatively in a string.
3   Test Data :
4   Input the string : This one is the BEST university in the World.
5   Expected Output :
6   this ONE is THE best UNIVERSITY in THE world.*/
7
8   #include<iostream>
9   #include<string>
10  using namespace std;
11  int main()
12  {
13      string s,t;
14      cout<<"Enter a String :";
15      getline(cin,s);
16      int a=0;
17      for(int i=0;i<s.length();i++)
18      {
19          if(s[i]==' ')
20          {
21              if(a==0)
22              a=1;
23              else
24              a=0;
25
26              t=t+" ";
27          }
28          else if(a==0)
29          {
30              s[i]=tolower(s[i]);
31              t = t +s[i];
32          }
33          else
34          {
35              s[i]=toupper(s[i]);
36              t = t + s[i];
37          }
38      }
39      cout<<t;
40  }
```

OUTPUT

```
PS D:\VSS Codes\01-12> cd "d:\VSS Codes\01-12\" ; if ($?) { g++ Ques3.cpp -o Q
Enter a String :This one is the BEST university in the World
this ONE is THE best UNIVERSITY in THE world
PS D:\VSS Codes\01-12>
```

Q-4

```cpp
1    /*Write a C/C++ program to for keeping multiple students
2    information( Name, roll number, gender, age) using structure.
3    Create a function to get student information base on roll number.
4
5    Input: Enter student roll number: 50
6    Output:
7    Name : Sumit Negi ,
8    Roll No. :  50,
9    Gender: M,
10   Age: 20*/
11
12   #include<iostream>
13   #include<string>
14   using namespace std;
15
16   struct student
17   {
18       string name = "Sumit Negi";
19       int rollno = 50;
20       char gender = 'M';
21       int age = 20;
22   }s;
23
24   int main()
25   {
26       int n;
27       cout<<"Enter Roll number of Student :";
28       cin>>n;
29       if(s.rollno==n)
30       {
31           cout<<"Name : "<<s.name<<endl;
32           cout<<"Roll Number : "<<s.rollno<<endl;
33           cout<<"Gender : "<<s.gender<<endl;
34           cout<<"Age : "<<s.age<<endl;
35       }
36       else{
37           cout<<"No student with given Roll number :"<<endl;
38       }
39   }
40
```

OUTPUT

```
PS D:\VSS Codes\01-12> cd "d:\VSS Codes\01-12\" ; if ($?) { g++ Ques4.cpp -o Ques4 }
Enter Roll number of Student :50
Name : Sumit Negi
Roll Number : 50
Gender : M
Age : 20
PS D:\VSS Codes\01-12>
```