

Write the output of the following code fragments.

1. string s1;
s1 = "Anatoliy";
cout << "s1 is: " << s1 << endl;
// copy constructor
string s2 (s1);
cout << "s2 is: " << s2 << endl;

Output :

S1 is:Anatoliy
S2 is:Anatoliy

2. string str = "Hello";

cout << "str is : " << str << endl;
str += ",";
str += ' ';
cout << "str is : " << str << endl;
string s;
s = str + "World";
cout << "s is : " << s << endl;
char ch = '!';
s += ch;
cout << "s is : " << s << endl;

Output :

Str is :Hello

Str is :Hello,
s is:Hello, World
s is:Hello, World!

3.

```
string s = "Nobody is perfect";  
  
// Returns s[pos]  
for ( int pos = 0; pos < s.length(); ++pos )  
    cout << s.at(pos) << " ";  
cout << endl;
```

Output :

N o b o d y I s p e r f e c t

4.

```
string str = "We go step by step to the target";  
cout << "str is: " << str << endl;  
  
int n = str.find("step");  
string s = str.substr(n);  
cout << "s is: " << s << endl;  
  
s = str.substr(n,12);  
cout << "s is: " << s << endl;
```

Output :

Str is: We go step by step to tha target
S is: step by step to the target
S is: step by step

Exercise 1

Write a program which prompts user to enter a string of text. Once entered, you need to present a

summary of the text in the following manner.

Total number of vowels in the text.

Total number of spaces in the text.

Total number of upper case characters in the text.

```
#include "stdafx.h"
#include<iostream>
#include<string>
using namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
    string para;
    int cv=0, cu=0, cs=0;

    cout << "Enter a line of string: ";
    getline(cin,para);
    for(int i = 0; i<para.length(); ++i)
        if(para.at(i)=='a' || para.at(i)=='e' || para.at(i)=='i' || para.at(i)=='o'
|| para.at(i)=='u' )

        {
            ++cv;
        }
        if(para.at(i)==' ')
        {
            ++cs;
        }
        if(isupper(para.at(i)))
        {
            ++cu;
        }

    }
    cout << "Vowels: " << cv << endl;
    cout << "uppercase " << cu << endl;
    cout << "White spaces: " << cs << endl;
    system("pause");
    return 0;
}
```

```
C:\Users\FJWU\documents\visual studio 2010\Projects\qwertyu
Enter a line of string: fs aaaa AAAA
Vowels: 4
upercase 4
White spaces: 2
Press any key to continue . . .
```

Exercise 2

Write a program that reads an identification number which could be an ID card number in the

following format: **XXXXXX-XXXXXXXX-X**

Using members of the string class separate the different fields of the identification number and

display each field.


```
// qwertyu.cpp : Defines the entry point for the console application.
//

#include "stdafx.h"
#include<iostream>
#include<string>
using namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
    string id;

    cout << "Enter a id of string: ";
    cin>>id;
    cout<<id.substr(0,5)<<id.substr(6,7)<<id.substr(14,1)<<endl;

    system("pause");
    return 0;
}
```

 C:\Users\FJWU\documents\visual studio 2010\Projects\c

```
Enter a id of string: 32303-9774607-0
3230397746070
Press any key to continue . . .
```

Exercise 3

You need to create a game using strings. First generate a random letter from A to Z, this is your

key and is hidden from the players. Ask player1 and player 2 to enter two strings of length 10.

The player whose strings contains the key alphabet will win. If both the players have key

alphabets, then the player for which it occurs earlier in the string will win. Example Run:

Key: S (Not visible to user)

Player1: ABDXSCJMNK; Player2: CSTUZWKMIJ

Player 2 wins.

HINT:

```
string s = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";
```

Generate a random number 'k' in range 0 to 25 inclusive. Use s[k] as your random letter

```

// poiu.cpp : Defines the entry point for the console application.
//

#include "stdafx.h"
#include<iostream>
#include<string>
using namespace std;

int get_index_of_first_character(string p1, string key)
{for (int i = 0; i < p1.length(); ++i)
{if (p1[i] ==key)
    return i;
}}

int _tmain(int argc, _TCHAR* argv[])
{string p1;
string s = "ABCDEFGHJKLMNOPQRSTUVWXYZ";
string key;
int x;
p1.at(10)==x;
x=rand()%26;
key =s.at(x);
cout<<"key"<<key<<endl;
string player1, player2;
    cout << "Player 1: Enter a string of length 10: ";
    cin >> player1;
    cout << "Player 2: Enter a string of length 10: ";
    cin >> player2;

    int index1 = get_index_of_first_character(player1, key);
    int index2 = get_index_of_first_character(player2, key);

    if (index1 != -1 && index2 != -1) {
        if (index1 < index2)
            cout << "The character '" << key << "' occurs first in str1.player 1 win" <<
endl;
        else
            cout << "The character '" << key<< "' occurs first in str2.player 2 win" <<
endl;
    }
    else if (index1 != -1)
        cout << "The character '" << key << "' occurs only in str1.player 1 win" << endl;
    else if (index2 != -1)
        cout << "The character '" << key << "' occurs only in str2.player 2 win" << endl;
    else
        cout << "The character '" << key << "' does not occur in either string." << endl;

    system("pause");
    return 0;
}

```

Player 1 wins:

```
Output Clear  
/tmp/nohTEYjWfI.o  
Key: 24  
Player 1: Enter a string of length 10: qniwyrvtud  
Player 2: Enter a string of length 10: bdjuhkjsnk  
The character 'y' occurs only in Player 1's string. Player 1 wins.  
|
```

Player 2 wins:

```
Output Clear  
/tmp/nohTEYjWfI.o  
Key: 20  
Player 1: Enter a string of length 10: aesbjfikxn  
Player 2: Enter a string of length 10: qwetvdujok  
The character 'u' occurs only in Player 2's string. Player 2 wins.  
|
```

Tie:

```
Output Clear  
/tmp/XblqXN0tR9.o  
Key: 15  
Player 1: Enter a string of length 10: qwertyuiou  
Player 2: Enter a string of length 10: asdfghjkl  
The character 'p' does not occur in either string. It's a tie.  
|
```

Tie:

Output

Clear

```
/tmp/XblqXN0tR9.o
```

```
Key: 24
```

```
Player 1: Enter a string of length 10: qwertyuioi
```

```
Player 2: Enter a string of length 10: asdfghyjk1
```

```
The character 'y' occurs first in Player 1's string. Player 1 wins.
```

```
|
```