Chapter 8: The class string & File input output Handling

Laboratory Exercises (5)

EXAMPLE 8-14 (clear, empty, erase, length, AND size FUNCTIONS)

```
#include <iostream>
#include <string>
using namespace std;
int main()
{
string firstName = "Elizabeth";
string name = firstName + " Jones";
string str1 = "It is sunny.";
string str2 = "";
string str3 = "computer science";
string str4 = "C++ programming.";
string str5 = firstName + " is taking " + str4;
string::size_type len;

cout << "Line 9: str3: " << str3 << endl;
str3.clear();
cout << "Line 11: After clear, str3: " << str3<< endl;
cout << "Line 12: str1.empty(): " << str1.empty()<< endl;
cout << "Line 13: str2.empty(): " << str2.empty() << endl;
cout << "Line 14: str4: " << str4 << endl;
str4.erase(11, 4);
cout << "Line 16: After erase(11, 4), str4: "<< str4 << endl;
```

```
cout << "Line 17: Length of \"" << firstName << "\" = " << static_cast<unsigned int>
(firstName.length())<< endl;

cout << "Line 18: Length of \"" << name << "\" = "<< static_cast<unsigned int> (name.length())<< endl;

cout << "Line 19: Length of \"" << str1 << "\" = "<< static_cast<unsigned int> (str1.length())<< endl;

cout << "Line 20: Size of \"" << str5 << "\" = "<< static_cast<unsigned int> (str5.size()) << endl;

len = name.length();

cout << "Line 22: len = "<< static_cast<unsigned int> (len) << endl; return 0;


return 0;

}
```

EXAMPLE 8-15 (find FUNCTION)

```
#include <iostream>

#include <string>

using namespace std;

int main()

{

string sentence = "Outside it is cloudy and warm.";

string str = "cloudy";

string::size_type position;


cout << "Line 4: sentence = \"" << sentence << "\"" << endl;

cout << "Line 5: The position of \"is\" in sentence = "<< static_cast<unsigned int> (sentence.find("is"))<<
endl;

cout << "Line 6: The position of 's' in sentence = "<< static_cast<unsigned int> (sentence.find('s'))<<
endl;

cout << "Line 7: The position of \"" << str<< "\" in sentence = "<< static_cast<unsigned int>
(sentence.find(str))<< endl;

cout << "Line 8: The position of \"the\" in sentence = "<< static_cast<unsigned int>
(sentence.find("the"))<< endl;
```

```
cout << "Line 9: The first occurrence of \'i\' in "<< "sentence \n after position 6 = "<<
static_cast<unsigned int> (sentence.find('i', 8))<<endl;

position = sentence.find("warm");

cout << "Line 11: " << "Position = "<< position << endl;


return 0;

}
```

EXAMPLE 8-16 (insert AND replace FUNCTIONS)

```
#include <iostream>

#include <string>

using namespace std;

int main()

{

   string firstString = "Cloudy and warm.";

   string secondString = "Hello there";

   string thirdString = "Henry is taking programming I.";

   string str1 = " very ";

   string str2 = "Lisa";


cout << "Line 6: firstString = " << firstString<< endl;

firstString.insert(10, str1);

cout << "Line 8: After insert; firstString = "<< firstString << endl;


cout << "Line 9: secondString = " << secondString << endl;

secondString.insert(11, 5, '!');

cout << "Line 11: After insert; secondString = "<< secondString << endl;


cout << "Line 12: thirdString = " << thirdString << endl;
```

```
thirdString.replace(0, 5, str2);
cout << "Line 14: After replace, thirdString = "<< thirdString << endl;
return 0;
}
```

EXAMPLE 8-17 (substr FUNCTION)

```
#include <iostream>
#include <string>
using namespace std;
int main()
{
string sentence;
string str;
sentence = "It is cloudy and warm.";

cout << "Line 4: substr(0, 5) in \""<< sentence << "\" = \""<< sentence.substr(0, 5) << "\"" << endl;
cout << "Line 5: substr(6, 6) in \""<< sentence << "\" = \""<< sentence.substr(6, 6) << "\"" << endl;
cout << "Line 6: substr(6, 16) in \""<< sentence << "\" = " << endl<<" \"" << sentence.substr(6, 16) <<
"\"" << endl;
cout << "Line 7: substr(17, 10) in \""<< sentence << "\" = \""<< sentence.substr(17, 10) << "\"" << endl;
cout << "Line 8: substr(3, 6) in \""<< sentence << "\" = \""<< sentence.substr(3, 6) << "\"" << endl;

str = sentence.substr(0, 8);
cout << "Line 10: " << "str = \"" << str<< "\"" << endl;

str = sentence.substr(2, 10);
cout << "Line 12: " << "str = \"" << str<< "\"" << endl;
return 0;
```

```
}
```

Challenge Program!

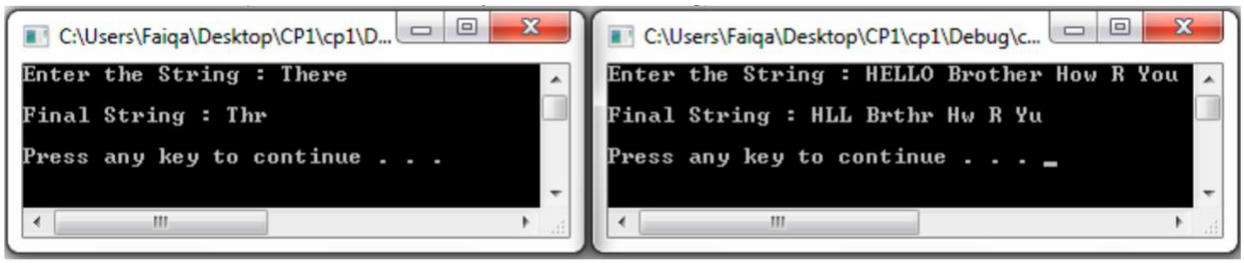
Write a program that read your full name (first and last) in one string using *getline()* function, and then prints back your last name.

```
#include <iostream>

#include<string>

using namespace std;


int main()

{

int Pos, lnamePos, lnameLength;

string name;

string lname;


cout<<"Enter you first name and last name: ";

getline(cin, name);

Pos=name.find(' ');

lnamePos= Pos+1;

lnameLength=name.length()-lnamePos;


lname=name.substr(lnamePos, lnameLength);


cout<<"\n Your last name is: "<<lname<<endl;


return 0;

}
```

Strings

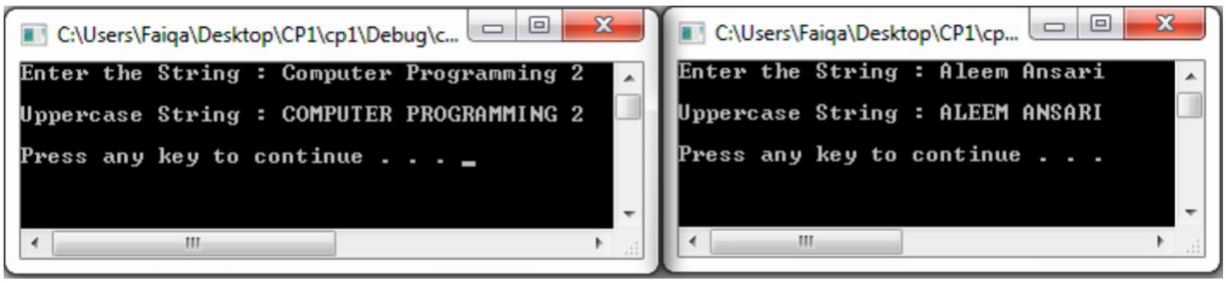
KEYWORDS: Char array, Pass by reference.

Program 1: Write a program that prompts the user to input a string. The program then removes all the vowels from the string. For example, if str = "There", then after removing all the vowels, str = "Thr". Your program must contain a function to remove all the vowels and a function to determine whether a character is a vowel (Use a character array to store the string).



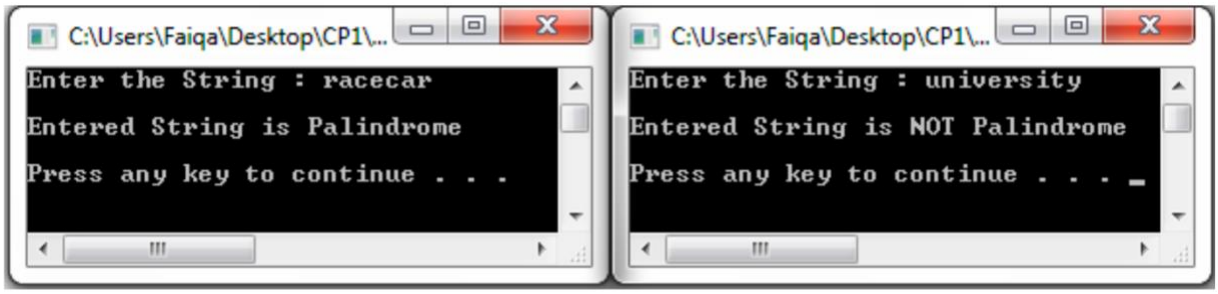
Sample Output

Program 2: Write a program that prompts the user to input a string and outputs the string in uppercase letters. (Use a character array to store the string).



Sample Output

Program 3: Write a program that prompts the user to input a string and determines if the string is Palindrome (Use a character array to store the string).



Sample Output