



Explain why an variable/object needs to have a data type associated with it in C++.
Give an example of how this is done (declare a variable/object).



Write a program that will ask the user to enter two same lengthed words with no space between them. Your program should then display the length of each word and the words with a space between them. Here are some examples:

Please enter two words of the same length (with no space between the words):

`chipdips`

Each word has 4 character(s): chip dips

and

Please enter two words of the same length (with no space between the words):

`impatiencepeacemaker`

Each word has 10 character(s): impatience peacemaker



Write a program that loads an unknown number of words (separated by spaces) from a file named "stuff.txt" and displays the number of words in the file. Be sure to write all of the preprocessor directives necessary for your program to compile.

Write the swap function used on line 12 of the following program:

```
#include <string>
2 using std::string;
#include <iostream>
4 using std::cout;
#include "swap.h"
6
int main()
8 {
    string first = "Warren";
10    string last = "Christopher";
    cout << first << ' ' << last << '\n'; // displays: Warren Christopher
12    swap(first, last); // <<===== WRITE THIS GUY =====>>
    cout << first << ' ' << last << '\n'; // displays: Christopher Warren
14    return 0;
}
```

Indicate what the contents of the vector will be when the function returns.

```
#include <vector>
2 using std::vector;

4 vector<double> quiz7 ()
  {
6   vector<double> stuff(5,3.14);
   stuff.pop_back();
8   stuff.pop_back();
   stuff.push_back(2.7);
10  stuff.resize(5);
   stuff.push_back(4.9);
12  stuff.resize(10, 18);
   return stuff;
14 }
```

Quizzes



Name:

Describe the differences in how the list and vector classes store their contents.



Write a function that will accept a `string` and convert all uppercase letters in it to lowercase (and leave all other characters unchanged). The function should return the number of characters that were modified.