CSC 122 001 Computer Science II
Julius Ranoa

Quiz 6. Program 17-9 Modification.
Alter the source code such that the driver program uses the same processes with doubles, characters, and strings (std).

Implementation.
I've created three functions that are practically copies of each other, only differing in the data type of the list members and given test data.

(1) *doubleList*. A list of doubles. Test data: A sequence from n = 0 to n = 10 with $a_n = 9.99n$.
(2) *charList*. A list of characters. Test data: All uppercase letters from 'A' to 'Z'
(3) *stringList*. A list of string objects. Test data: Each word from this sentence: "The quick brown fox jumps over the lazy dog."; is added as a list member. *(The string stream library is used to automate this process.)*

Screenshot of Runtime:

```
List of Doubles:
0 9.99 19.98 29.97 39.96 49.95 59.94 69.93 79.92 89.91 99.9
99.9 89.91 79.92 69.93 59.94 49.95 39.96 29.97 19.98 9.99 0

List of Characters:
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Z Y X W V U T S R Q P O N M L K J I H G F E D C B A

List of Strings:
The quick brown fox jumps over the lazy dog.
dog. lazy the over jumps fox brown quick The
```

Files Included: (1) main.cpp

main.cpp

```
// This program demonstrates the STL list container.
#include <iostream>
#include <list>     // Include the list header
#include <string>
#include <sstream>
using namespace std;

void doubleList();
void charList();
void stringList();

int main()
{
    doubleList();
    charList();
    stringList();
    return 0;
}

void doubleList() {
    list<double> myList;
    list<double>::iterator iter;

    // Add values to the list
    for (double x = 0; x < 100; x += 9.99)
        myList.push_back(x);

    cout << "List of Doubles: \n";
    // Display the values
    for (iter = myList.begin(); iter != myList.end(); iter++)
        cout << *iter << " ";
    cout << endl;

    // Now reverse the order of the elements
    myList.reverse();

    // Display the values again
    for (iter = myList.begin(); iter != myList.end(); iter++)
        cout << *iter << " ";
    cout << "\n\n";
}

void charList() {
    list<char> myList;
    list<char>::iterator iter;

    // Add values to the list
    for (int x = (int)('A'); x <= (int)('Z'); x += 1)
        myList.push_back((char)(x));

    cout << "List of Characters: \n";
    // Display the values
    for (iter = myList.begin(); iter != myList.end(); iter++)
        cout << *iter << " ";
```

```
    cout << endl;

    // Now reverse the order of the elements
    myList.reverse();

    // Display the values again
    for (iter = myList.begin(); iter != myList.end(); iter++)
        cout << *iter << " ";
    cout << "\n\n";
}

void stringList() {
    list<string> myList;
    list<string>::iterator iter;

    string test = "The quick brown fox jumps over the lazy dog.";
    istringstream iss(test);

    string temp;
    while(iss >> temp) {
        myList.push_back(temp);
    };

    cout << "List of Strings: \n";
    // Display the values
    for (iter = myList.begin(); iter != myList.end(); iter++)
        cout << *iter << " ";
    cout << endl;

    // Now reverse the order of the elements
    myList.reverse();

    // Display the values again
    for (iter = myList.begin(); iter != myList.end(); iter++)
        cout << *iter << " ";
    cout << "\n\n";
}
```