```
Script started on 2021-02-23 20:11:34-0600
m_sadaf1@ares:~$ pwd
/home/students/m_sadaf1
m_sadaf1@ares:~$ cat hi.info
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Class: CSC122 W01

Lab: "Hi"=="hi"?
Level: 1.5

Description:

This program takes the input of two strings, compare them
without destroying their contents, and outputs the result
based on the return values given in the code.

m_sadaf1@ares:~$ cat hi.tpq
Thought Provoking Questions:

1) By using while statement we can compare characters
   without reference to its case and without destroying
   the character variable(s) contents as they check and
   compare each word until it finds an error in the
   characters.

2) We create a function to compare two strings in a
   case-insensitive way without destroying their contents.
   I used short string_comp() to compare them.

3) Reference arguments to refer back to the string. I am
   using string comparison function that is passing string 1
   and string 2 by reference. The program refers back to the
   string unputted, instead of copying it.

4) To get the return value for my function, I return 0
   if the strings are same, return -1 if the first
   string is smaller than the second string, and return
   +1 if the second string is smaller than the first string.

5) Minimum 3 tests are required to test my function
   thoroughly.

m_sadaf1@ares:~$ cat hi.cpp
#include <iostream>
#include <string>
#include "hi.h"

using namespace std;

int main(void)
{
    short comp_string;
    string first, second;

    cout << "\nPlease enter a string: ";
    getline (cin, first);

    cout << "\nPlease enter another string: ";
    getline (cin, second);

    comp_string = string_comp(first, second);

    if (comp_string > 0)
    {
        cout << " " << first << " comes after " <<
                second << endl;
    }
    else if (comp_string < 0)
    {
        cout << " " << first << " comes before "
                << second << endl;
    }
    else
    {
        cout << " " << first << " is the same as "
                << second << endl;
    }

    return 0;
}

m_sadaf1@ares:~$ cat hi.h
#ifndef STR_COMP_CASE
#define STR_COMP_CASE

#include <string>

short string_comp(const std::string & first,
        const std::string & second);

#endif

m_sadaf1@ares:~$ cat string_comp.cpp
#include "hi.h"
#include <iostream>
#include <string>
#include <cctype>

using namespace std;

short string_comp(const string & first,
        const string & second)
{
```

```
    short comp_string;
    string::size_type a, length;

    length = first.size();
    // calc the size of a string

    if (second.length() < length)
    {
        length = second.length();
        // returns the length of a string
    }

    a = 0;

    while (a != length && toupper(first[a])
            == toupper(second[a]))
    {
        a = a + 1;
    }

    if (a == length)
    {
        if (first.length() == second.length())
        {
            comp_string = 0;
        }
        else if (first.length() == length)
        {
            comp_string = -1;
        }
        else
        {
            comp_string = +1;
        }
    }

    else
    {
        if (toupper(first[a]) > toupper(second[a]))
        {
            comp_string = +1;
        }
        else
        {
            comp_string = -1;
        }
    }
    return comp_string;
}

m_sadaf1@ares:~$ CPP hi string_comp
hi.cpp***
string_comp.cpp...


m_sadaf1@ares:~$ ./hi.out

Please enter a string: James is waiting for the train.

Please enter another string: james is waiting for the train.
 James is waiting for the train. is the same as james is waiting for the train.
m_sadaf1@ares:~$
m_sadaf1@ares:~$ ./hi.out

Please enter a string: An Apple a day

Please enter another string: Keeps the doc away!
 An Apple a day comes before Keeps the doc away!
m_sadaf1@ares:~$
m_sadaf1@ares:~$ ./hi.out

Please enter a string: Keeps the Doc away!

Please enter another string: An Apple a day
 Keeps the Doc away! comes after An Apple a day
m_sadaf1@ares:~$
m_sadaf1@ares:~$ exit
exit

Script done on 2021-02-23 20:14:46-0600
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