Strings
CSCI 201L

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HTTP://WWW-SCF.USC.EDU/~CSCI201
Outline

- Strings
- Garbage Collection
- Program
Strings

- In Java there is a String class that abstracts a lot of the details away from the programmer.
- A String is nothing more than a character array with a number of methods available.
- Strings are immutable:
  - Once you create a String, the value of that String remains in memory and cannot be changed.
  - The reference to a String can be changed.
String s1 = "CSCI 201";
String s2 = s1;
System.out.println(s1);
System.out.println(s2);
s1 = s1.replace('2', '1');
System.out.println(s1);
System.out.println(s2);
java.lang.String API

- The String API contains 65 methods and 15 constructors, in addition to 8 methods inherited from the Object class.
- [http://docs.oracle.com/javase/7/docs/api/java/lang/String.html](http://docs.oracle.com/javase/7/docs/api/java/lang/String.html)
- Take a look at the API
  - From the names of the methods, you can probably figure out what most of them do.
String Example

1  String cs201 = “CSCI 201”;
2  String cs103 = “csci 103”; 
3  if (cs201.compareTo(cs103) < 0) {
4    System.out.print(“CSCI 201 comes before CSCI 103”);
5  } 
6  else {
7    System.out.print(“CSCI 201 comes after CSCI 103”);
8  }
9
10 if (cs201.compareToIgnoreCase(cs103) < 0) {
11   System.out.print(“CSCI 201 comes before CSCI 103”);
12 } 
13 else {
14   System.out.print(“CSCI 201 comes after CSCI 103”);
15 }
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Program

- Write a program that compares the values of two strings case-insensitively. Output which string comes before the other string. Do this without using the `compareToIgnoreCase` method provided in the JDK.

```
c:\> java csci201.CompareStrings
Enter string #1: CSCI201
Enter string #2: csci202
The string CSCI201 comes before csci202 in alphabetical order.
c:\>
```