



Strings

CSCI 201

Principles of Software Development

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Outline

- Strings
- Program

Strings



- In Java there is a `String` class that abstracts a lot of the details away from the programmer
- A string in a programming language is nothing more than a character array with a number of methods available
- Strings in Java 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

Immutable String Example



```
1 public class Test {
2     public static void main(String [] args) {
3         String s1 = "CSCI 201";
4         String s2 = s1;
5         System.out.println(s1);
6         System.out.println(s2);
7         s1 = s1.replace('2', '1');
8         System.out.println(s1);
9         System.out.println(s2);
10    }
11 }
```

java.lang.String API



- The `String` API in Java 7 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>
- 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 public class Test {
2     public static void main(String [] args) {
3         String cs201 = "CSCI 201";
4         String cs103 = "csci 103";
5         if (cs201.compareTo(cs103) < 0) {
6             System.out.print("CSCI 201 is before CSCI 103");
7         }
8         else {
9             System.out.print("CSCI 201 is after CSCI 103");
10        }
11        if (cs201.compareToIgnoreCase(cs103) < 0) {
12            System.out.print("CSCI 201 is before CSCI 103");
13        }
14        else {
15            System.out.print("CSCI 201 is after CSCI 103");
16        }
17    }
18 }
```



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- 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:\>
```