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.
public class Test {
    public static void main(String [] args) {
        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);
    }
}
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](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
public class Test {
    public static void main(String [] args) {
        String cs201 = "CSCI 201";
        String cs103 = "csci 103";
        if (cs201.compareTo(cs103) < 0) {
            System.out.print("CSCI 201 is before CSCI 103");
        } else {
            System.out.print("CSCI 201 is after CSCI 103");
        }
        if (cs201.compareToIgnoreCase(cs103) < 0) {
            System.out.print("CSCI 201 is before CSCI 103");
        } else {
            System.out.print("CSCI 201 is after CSCI 103");
        }
    }
}
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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.

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