Processing

String Methods and Functions

CS30S

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**What is a String?**

Strings are a special data type contained in the processing library. It is an OBJECT: larger than a primitive and contains its own functions.

* A string is an array of characters stored in a single object. When we give a string a value, it is used as a primitive with one difference. It is ***immutable*** – This means it cannot be changed. If you want to change the value of a string; copy the old contents with the new to make the changes.
* Because strings are used so often in coding, processing makes them as simple to use as possible.

String name = “Mrs. Latimer”; //note double quotes

**Using a string:**

println(name); // no quotes

**String Functions:**

* Since strings are OBJECTS they contain their own functions. These functions define the behaviour and attributes. They also let us do interesting operations.

Example:

* We have a string named words. We access the function by putting a dot after its name, then write the name of the method and any parameters needed by the function

words.length(); //returns the length of the string

string1.concat(string2); // attaches string2 on the end of string 1

string1.compareTo(string2); // compares the two strings

string1.toLowerCase(); // changes string 1 to lower case

Try it Yourself

Consider the following code:

String greeting = “Good Morning ”;

String name = “Mrs. Latimer”;

println(greeting + name);

Now change the code to use the concat function.

**Table of String Functions**

|  |  |
| --- | --- |
| compareTo() | Compares to strings |
| charAt() | Returns the character at the specified index |
| length() | Returns the length of a String |
| equals() | Compares a String to a specified object |
| equalsIgnoresCase() | Compares a string to another string but ignores the case |
| toUpperCase() | Converts the string to all uppercase |
| toLowerCase() | Converts the string to all lowercase |
| concat() | Concatenates one string to another |
| indexOf() | Returns the index number of a specified character within a string |
| substring() | Returns a portion of a specified string between two indices |

Try it Yourself

Start with a string “Processing is Great Fun!”

Println the string all uppercase, lowercase, and the length using string methods. Try some of the other ones

**Assignment:**

**Trivia Pursuit**

1. Write a program that will ask the user at least 4 trivia questions where the answer requires you to compare strings, compare the input answer to the correct answer, and calculate the percentage of correct answers.
2. Each question should be its own function
3. Calculating the percentage should be its own function
4. Correct answers are NOT case sensitive

**Madlibs**

1. Write a program that asks the user for String values to fill out a Madlibs (<https://www.madlibs.com/printables/>). By using the string functions, create a completed Madlibs and print to the console.