

Lesson 1.6 Using Strings & Concatenation

In general, you cannot perform mathematical operations on strings, even if the strings look like numbers. The following expressions are illegal:

```
"Hello" - 1    "World" / 123    "Hello" * "World"
```

The + operator works with strings, but it might not do what you expect.

For strings, the + operator performs **concatenation**, which means joining end-to-end.

Example

So "Hello, " + "World!" yields the string "Hello, World!".

Likewise if you have a variable called name that has type String, the expression "Hello, " + name appends the value of name to the hello string, which creates a personalized greeting.

Since addition is defined for both numbers and strings, Java performs automatic conversions you may not expect:

Example

```
System.out.println(1 + 2 + "Hello");  
// the output is 3Hello  
System.out.println("Hello" + 1 + 2);  
// the output is Hello12
```

Java executes these operations from left to right. In the first line, 1 + 2 is 3, and 3 + "Hello" is "3Hello". But in the second line, "Hello" + 1 is "Hello1", and "Hello1" + 2 is "Hello12".

Example

```
import java.util.Scanner;

public class Echo
{
    public static void main(String[] args)
    {
        String line;
        Scanner in = new Scanner(System.in);
        System.out.print("Type something: ");
        line = in.nextLine();
        System.out.println("You said: " + line);

        System.out.print("Type something else: ");
        line = in.nextLine();
        System.out.println("You also said: " + line);
    }
}
```