



SY110

Programs – Input/Output

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- 1 Review
- 2 More programs



- Programming goals:
 - ▶ Understand simple programs in JavaScript
 - ▶ Be able to modify programs
 - ▶ Have some fun doing it (programming is cool!)



Arithmetic

- Simple arithmetic can be done from the interpreter:
 - ▶ $5 + 4$
 - ▶ $5 \% 4$
 - ▶ $5 / 4$
- What are these called?

Variables

- We can define variables using **var**:
 - ▶ `var x = 5 / 4;`
 - ▶ `var name = "Nimitz";`



Built-in functions

- We saw some basic math functions included with JavaScript :
 - ▶ `var foo = Math.PI;`
 - ▶ `var a = Math.sin(Math.PI/2);`

Types

Variables have a specific type, and this is important

- `var x = 2.718;`
- `typeof(x); //number`
- `var y = "USNA";`
- `typeof(y); //string`

String indices

The first character of a string is at position 0



Type conversions

We can force a variable to be a specific type if we want:

```
var input1 = 55;  
var input2 = '42';  
var height = Number(input1);  
var width = Number(input2);  
var area = width * height;
```

Tricky JavaScript

What's the result of:

```
input1 + input2;
```



Programming

Last time we used the JavaScript interpreter to execute expressions (returns a value) and statements (‘;’ delimited, don’t return a value).

- In practice, this is rarely done.
 - ▶ Why?
- Reminder: A programming-language program is a text-file in some high-level programming language, like C, C++, Java, or JavaScript
- These files consist of a series of instructions that are processed in order (well, for now anyway).
- Today we will run a series of instructions in a “batch interpreter”, as well as input and output data (IO).



Pull up the height/weight calculator



Let's write a simple demo program together from scratch

- Goal: write a program that:
 - ▶ Asks for the amount on a bill
 - ▶ Asks for the percent tip you want to add



When we enter code into the interpreter, where is it running
(alternatively, what is running it?) What is happening below that to
make it work?



Questions?