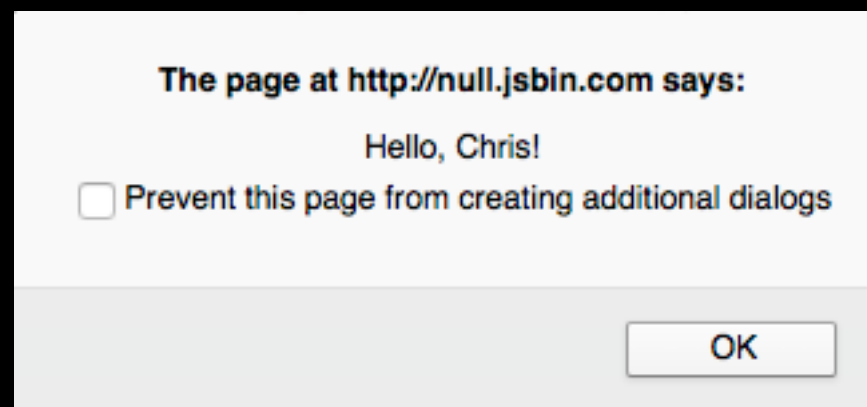# Hello, World!

An introduction to programming
Session 2

Admin Stuff

- Getting into Piazza

- Where's the homework?

- Office Hours - Mondays 5:30-7:30p

- Mentor Center availability

Review: What is Code?

```javascript
function getName(){

  // prompt user
  var name = prompt("Please enter your first name");

  // validate input and reprompt as necessary
  while (name === '') {
    name = prompt("Sorry, your answer was blank. Please enter your first name");
  }

  return name;

}

var firstName = getName();
alert("Hello, " + firstName + "!");
```

The page at http://null.jsbin.com says:

Hello, Chris!

☐ Prevent this page from creating additional dialogs

OK

Review: What is an algorithm?

A self-contained step-by-step set of operations to be performed (to solve a problem, carry out a set of specific actions, etc)

Review: What is pseudocode?

Instructions written out one after the other, like code, employing basic constructs like repetition (i.e. looping) and decision making (i.e. conditionals)

Today

- Pseudocode detailed overview

- Pseudocode practice

- Introducing Javascript

What is pseudocode used for?

- Sketching out solutions to coding problems more quickly

- Allows us to focus on concepts rather than code minutae

- Language agnostic

Variables

A variable stores a value (number, letter, word, etc) that we can use and update later

```
numberOfBurritos = 2
```

```
launchcodeAddress = "4811 Delmar Blvd"
```

Data Types

Variables have "data types," which is a fancy way of saying that there are different kinds of things that can be stored in a variable, and those things are often treated differently.

Data Types

- Number: 2, 78, -2, 3.5, 3.14159
- String: "Hello, World!", 'LaunchCode'
- Boolean: true, false

Conditionals

```
IF STUDENT AT LAUNCHCODE
  LEARN()
END IF
```

Has the generic form:

```
IF CONDITION
  // DO SOMETHING
END IF
```

More Conditionals

```
if (condition)
  // do something
else if (different condition)
  // do something else
else
  // do this if none of above
  conditions are met
```

Loops

```
FOR 1…10 LOOP
  PRINT '#'                    "for loop"
END LOOP


i = 0
WHILE i < 10
  PRINT '#'                    "while loop"
  i = i + 1
END WHILE
```

Comments

We can add comments (i.e. notes that are not part of our actual code) by preceding them with //:

```
// print all multiples of 3 between 3 and 300
i = 3
while i <= 300
  print i
  i = i + 3
end while
```

Pseudocode Practice

Write an algorithm that prints the smallest number of coins needed to give back x amount of change. Don't forget that x could be more than $1 (for example, for $1.25, the answer should be 1 coin).

Javascript Basics

Syntax is the term used to describe the set of rules that make up a programming language

If we don't follow those rules, the computer can't run our code. We say there is "syntax error"

Homework

Pseudocode and Javascript exercises are posted on the course page