



# INTRODUCTION TO WEB DEVELOPMENT AND HTML

Lecture 14: Programming with JavaScript - Spring 2011

# Outline

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# Programming with JavaScript



# Programming with JavaScript

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- ▶ **Variable**: *is used to store some information. (names, numbers, etc)*
- ▶ **Operators**: *They do "things" to variables:*
  - ▶ *Arithmetic: +, -, \*, /*
  - ▶ *Comparison: Compare strings, numbers, etc. For Example: 4 is equal to 5?*
- ▶ **Functions**: *A group of steps that will perform a desired operation*
- ▶ **Control Structures**:
  - ▶ **Conditional**: *if / else / switch*
  - ▶ **Repeat**: *to repeat a single action or set of actions. for / while / break / continue*



# Variables

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- ▶ `var userName = "Will Smith"`
- ▶ `alert(userName);`
- ▶ Variables are **Case sensitive!**
- ▶ Must begin with a letter or an underscore.
- ▶ Use descriptive names for your variables



# Operators

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- ▶ Arithmetic operators: + - \* / % ++ --

- ▶  $10 + 5 = 15$

- ▶  $4 - 3 = 1$

- ▶  $10 * 3 = 30$

- ▶  $4 / 2 = 2$

- ▶  $15 ++ = 16$  (this increments by 1)

- ▶  $8 -- = 7$  (this decrements by 1)

- ▶  $8 \% 5 = 3$  (division remainder)

- ▶ Assignment operators

- ▶ Comparison operators

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- ▶ Logical operators

# Assignment Operators ( =, +=, -=, /=, %=)

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- ▶ Assignment operators

- ▶ profit = income – expenses

- ▶ count = count + i    ←SAME →    count += i

- ▶ count = count - i    ←SAME →    count -= i

- ▶ count = count / i    ←SAME →    count /= i

- ▶ count = count \* i    ←SAME →    count \*= i

- ▶ count = count % i    ←SAME →    count %= i



# Comparison Operators

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▶ ==

▶ 4 == 3 // returns **false**

▶ !=

▶ 4 != 3 // returns true

▶ >

▶ 4 > 3 // returns true

▶ <

▶ 4 < 3 // returns false

▶ >=

▶ 4 >= 3 // returns true

▶ <=

▶ 4 <= 3 // returns false





# Logical Operators (Cont'd)

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- ▶ **&&** (AND Operator)
  - ▶ `( 3 < 2 && 3 > 1 ) // returns false`
- ▶ **??** (OR Operator)
  - ▶ `( 3 < 2 ?? 3 > 1 ) //returns true`
- ▶ **!** (Not Operator)
  - ▶ `!( 3 < 2) //returns true`



# String Operator

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- ▶ You can add text to strings using the + operator.
- ▶ For example:
  - ▶ `firstName = "Bob"`
  - ▶ `lastName = "Stewart"`
  - ▶ `name = firstName + lastName`



# Functions

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- ▶ How to create a function in JavaScript?

**function's name**      **arguments**

↓

```
function calculateArea(width, height) {  
    area = width * height  
    return area  
}
```

function body

↑

Functions that returns a value MUST  
use a **return** statement.

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## Function (Cont'd)

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- ▶ Great! Now, we have created our function. But, how do we call it? How do we use it?

```
<form name="frmArea" action="">
  Enter the width and height of your rectangle to calculate the
  size:<br/>
  Width:<input type="text" name="txtWidth" size="5" /><br/>
  Height:<input type="text" name="txtHeight" size="5" /><br/>
  <input type="button" value="Calculate area"
    onclick="alert (calculateArea (document.frmArea.txt
    Width.value, document.frmArea.txtHeight.value)) "
  />
</form>
```



# JS Framework: Dojo Toolkit

► <http://dojotoolkit.org/>



The screenshot shows the Dojo Toolkit website. At the top is a dark navigation bar with the Dojo Toolkit logo on the left and links for 'Get Dojo', 'Features', 'Documentation', 'Community', and 'Blog' in the center. A search bar is on the right. Below the navigation bar is a large blue circular graphic containing the number '1.6' and the text 'Instantly Better Web Apps'. To the right of this graphic is the heading 'Unbeatable JavaScript Tools' followed by a paragraph: 'Dojo saves you time, delivers powerful performance, and scales with your development process. It's the toolkit experienced developers turn to for building superior desktop and mobile web experiences.' Below this is a 'GET DOJO' button with a play icon. Further right is a 'SUPPORTING' section with logos for Internet Explorer, Firefox, Safari, Opera, and Chrome, followed by icons for various mobile devices. At the bottom is a dark blue banner with the text 'CREATING WEB APPS WITH DOJO' and logos for Aol., IBM, Cisco, Sun, TIBCO, sitepen, Thomson Reuters, and Alcatel-Lucent.



## Grids and Charts

Create enterprise grade apps with grids and charts that work across browsers and can handle any data thrown at it.



## Powerful Base APIs

Dojo's powerful, lightweight core makes common tasks quicker and easier. Animate elements, manipulate the DOM, and query with easy CSS syntax, all without sacrificing performance.



## Desktop, Mobile, Embedded

The simple Dojo APIs you know and love on every device and desktop. Enhanced with the latest HTML5 capabilities such as geolocation, touch events, and 3-D effects.

# Get Dojo !

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## Builds

### Cloud hosting via CDN

You can utilize the full Dojo Toolkit from the services by including a script tag in your page:

☒ Google CDN

☐ Yandex CDN (Europe)

```
<script src="http://ajax.googleapis.com/ajax/libs/dojo/1.6/dojo/dojo.xd.js" type="text/javascript"></script>
```

```
<script src="http://ajax.googleapis.com/ajax/libs/dojo/1.6/dojo/dojo.xd.js" type="text/javascript"></script>
```



# Cool Examples with Dojo!!!

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- ▶ See Examples in course site



# Questions?

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