

Week 9

This Week

- Javascript
- Document Object Model
- Ajax

Development of Interactivity

- HTML – static web pages
- PHP – dynamically generated web pages
- Javascript – web pages with dynamic content

Javascript

- Programming Language used in web design
- Unlike PHP, executed client-side!
- Javascript code is included in HTML passed to browser.

Javascript

PHP	Javascript
Interpreted	
Loosely-typed	
Server-side execution	Client-side execution

Javascript

- Like CSS, may be included either within the HTML page or linked in from external .js file.

- Linking in:

```
<head>
```

```
  <script src="file.js">
```

```
  </script>
```

```
</head>
```

Variables in Javascript

Initialization

Global - `x = 5;`

Local - `var x = 5;`

Data Types

number, boolean, string, object, undefined, null

Operators in Javascript

`+` : Concatenation operator, joins two strings.

`==` : Equality, can compare across types!

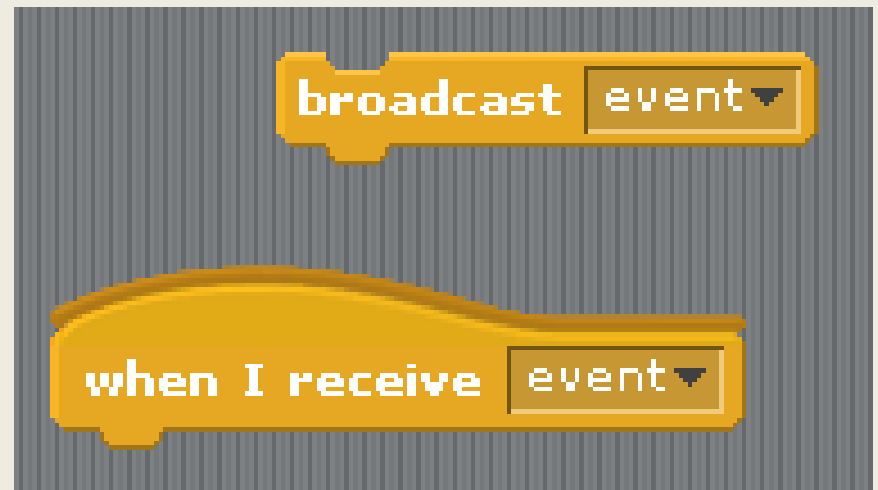
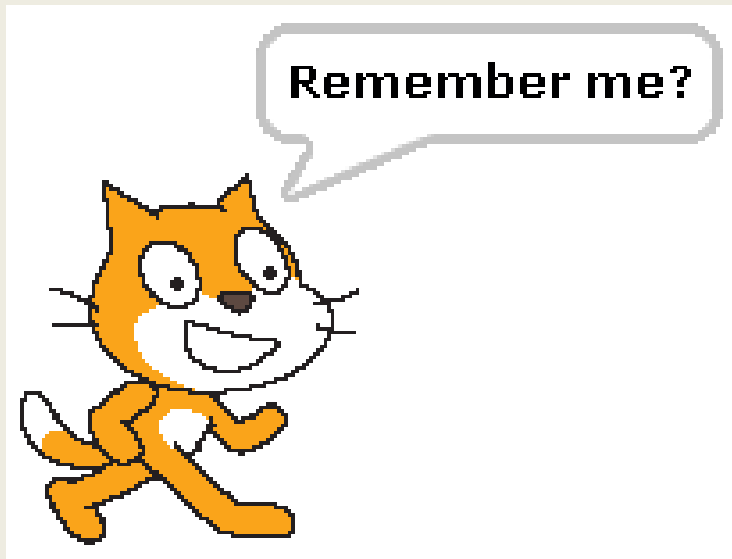
`typeof` : Gives data type of value stored in a variable.

'For Each' Loop in Javascript

```
weekdays["Sunday", "Monday", ..., "Saturday"];
```

```
for(int i = 0; i < 7; i++) for(var day in weekdays)
{                               {
    weekdays[i];                day;
}
```

Events



Events

- 'Event handlers' listen for an event and then execute code when that event happens.
- Example: set up an 'onclick' event for a tag which does something when the content on the page is clicked by the user.

Document Object Model

- Contents of web page represented in a structure called the Document Object Model.
- We can access individual elements by Id in Javascript and get their contents!
- Example:
 - `name = document.getElementById('name').value;`

Development of Interactivity

- HTML – static web pages
- PHP – dynamically generated web pages
- Javascript – web pages with dynamic content
- Ajax – dynamically load content from *other pages*

Ajax

- Asynchronous Javascript and XML
- Allows us to send requests to other pages for new content without reloading page!

Ajax

Recipe for Ajax Calls:

1. Create 'xhr' object
2. Construct url
3. Optional: Display 'loading' icon.
4. Send out xhr:
 1. Set up handler (do something on `xhr.readyState == 4`)
 2. Open request
 3. Send request