

Introduction to Basic JavaScript

What is JavaScript

JavaScript \neq Java. Instead, JS is a “scripting” language embedded in HTML documents.

JavaScript can be inserted into anywhere in a HTML file (i.e., `<head>` or `<body>`)

Must has the `<script>` at the beginning and the `</script>` tags at the end.

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <script>
5       // your script goes here
6       alert("Hello,World");
7     </script>
8   </head>
9   <body>
10    ...
11  </body>
12 </html>
```

JavaScript Syntax

Variable: A name associated with a piece of data created by the keyword `var`.

```
1 var x = 10;
2 var color = "red";
3 var fullName = function(firstName,
  lastName){}
```

Rules of variable name:

1. they are case sensitive
2. cannot contain space, punctuation, or start with a digit (0-9)
3. cannot be the reserved words (if, else, for, while, ...)

Data Type and Create an Array

Data Types: JavaScript is “untyped,” which does not need to declare explicit data types

Several ways to create a list:

```
1 <script>
2   // way 1:
3   var stock = ["GOOGL",
4               "2019-10-24",
5               1259.11];
6   stock[0] // select by index
7
8   // way 2:
9   var stock = new Array ("GOOGL",
10                          "2019-10-24",
11                          1259.11);
12
13   // way 3:
14   var stock = new Array(3);
15   // 3-length empty array;
16 </script>
```

JavaScript Events

HTML allows event handler attributes, with JavaScript code being added to HTML elements.

```
1 <button type = "button" onclick = "
  document.getElementById("demo")
  .innerHTML = Date()"> show me
  the time </button>
```

JS Events

Event	Description
onchange	An HTML element has been changed
onclick	the user clicks an HTML element
onmouseover	the user moves the mouse over an HTML element
onmouseout	the user moves the mouse away from an HTML element
onkeydown	the user pushes a keyboard key
onload	the browser has finished loading the page

Functions

An Example:

```
1 <script>
2   var = myFunction(4,3);
3   function myFunction(a,b){
4     return a * b;
5   }
6
7   var x = (a,b) =>
8   {return a * b};
9
10  var x = (a,b) => a * b;
11 </script>
```

Loops

```
1 for (i = 0; i < 10; i++){...};
2 for (var value in array){...};
3 while (i<10){...};
```

Callback

A callback is a function that passed as an argument to another function.

```
1 function func(callback) {
2   callback();
3 }
```