Javascript 101

An fastboot to Javascript with JQuery and ES6

Content

1. What is JS and why is it so popular?
2. Where does JS run?
3. Basics and Datatypes
4. Operators
5. Type Conversion
6. Flow Control
7. Functions
8. HTML DOM manipulation with JS
9. JQuery - An Introduction
10. ES6 vs JS

What is JS and why is it so popular?

JS

Javascript is a widely supported, interpreted, fast, multi paradigm scripting language.

Initially it was designed to work in browsers but later its other implementations were adopted to other platform uses as well, most notably nodejs which is a V8 based server side implementation of java, and MongoDB which uses javascript as its console language.

It is extremely popular due to its ability of being interactive and wide support. If you have a browser you have JavaScript! And almost every device has a web browser it means its almost globally supported.

Where does JS run?

JS

Javascript is an interpreted language and its primary interpreters are given by browsers such as Google Chrome's V8 Engine, Mozilla Firefox's SpiderMonkey with Gecko and MS Edge's Chakra engine.

https://en.wikipedia.org/wiki/JavaScript_engine

Basics and Datatypes

Javascript uses optional semicolons for end of a statement.

It is weakly typed.

Code blocks in JS are defined with { }

Comments are given as /* */ for multiline and // for single line.

There are primarily 5 types in JS-

Number, String, Boolean, null and undefined.

Basics and Datatypes contd..

We can use typeof operator to check type of a variable's value in JS. As we know JS is weakly typed so we do not need to give data types in advance to declare a variable instead we can declare a variable using **var** keyword.

See /Examples/JSEx/data_types.js

Operators

JS

In javascript all operators work similar to C.

Except for addition of === and !== in comparision.

=== stands for Strict equality.

"2" == 2 → would result in true in JS

"2" === 2 → would result in false

Operators contd..

in -> Used to check if element or property exists in an object.

typeof -> Mind that *typeof* is an operator. It tells the type of the value a variable is holding.

Type Conversions

There are three types of type conversions-

1. To number
2. To string
3. To Boolean

See /Examples/JSEx/type_conversion.js

Flow Control

JS

Flow control in Javascript can be used exactly as we use in C. ie. if, else, if else, switch , while and for.

But it provides us additional ways as well eg. using **for-in.**

See Examples/JSEx/flow_control.js

Functions

JS

Functions are a way to group together a bunch of instructions. Function declaration in javascript is done as following -

function function_name(function_arguments) {

    function _ body;

}

See Examples/JSEx/functions.js

HTML DOM Manipulation with JS

Being a language interpreted in browsers Javascript was primarily intended to work swiftly with the HTML DOM.

Although it is quite cumbersome to do so from raw JavaScript as we can see in the following example -

See Example/JSEx/HTMLInteraction

JQuery an Introduction

Apart from the mess that we saw in Javascript's DOM manipulation its even worse when it comes to other methods like making HTTP AJAX calls.

For such kind of trivial tasks a library exists named JQuery which wraps the functionalities of JS in a structured and easy to program way.

It was created by John Resig in 2006 and it revolutionized the way we perceive JS today.

We can use it in our documents using a CDN provided by google.

https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js

JQuery an Introduction

We will learn about simple DOM manipulations using JQuery and performing simple AJAX get and post requests.

See /Examples/JSEx/JQueryEx/

ES6 vs JS

There is alot buzz about ECMAScript and JavaScript both.

The main point to understand here is that both are different things. Indeed ECMAScript6 is not even a programming language.

ES6 is a programming language standard that defines what properties an ideal scripting language should have.

Javascript is a language that complies with all the norms given by ES6.

Due to ES6 there have been some additions in JS as well.

See ES6_Quick_Look.pdf