Introduction to JavaScript

CSEC WEB DIVISION

Outline

What is Javascript?

What you can do with it

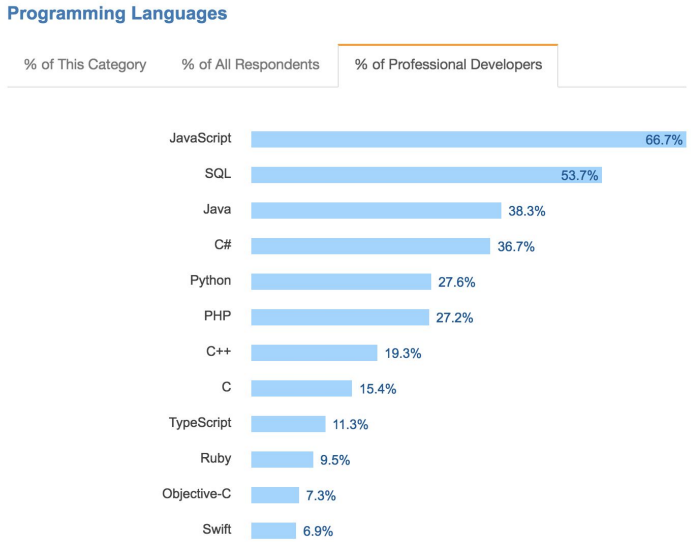
Syntax

What is JavaScript?

An object oriented scripting language!

It is one of the most popular programming languages in the world among developers.

Source: StackOverflow developer Survey



JavaScript is used to program the behavior of web pages

- HTML is used to define the content of web pages
  - Eg. Headings, buttons and containers
- CSS to specify the layout of web pages
  - Eg. the visual styling of webpages

Ok but what is a scripting language and what does it have to do with Java?

No not at all! JavaScript has nothing to do with Java

A scripting language is an interpreted language and does not need to be compiled to run. Some key differences from scripting to programming languages are:

1. Used to automate certain tasks in a program

2. Used to extract information from a data set

3. Has less code intensive as compared to traditional programming languages

4. Usually slower than compiled languages

However....

- ➔ JavaScript can also be a programming language
- ➔ Modern browsers come with a Javascript compiler
  - ◆ E.g Google Chrome with it's V8 Javascript Engine

Google

So what can you do with it?

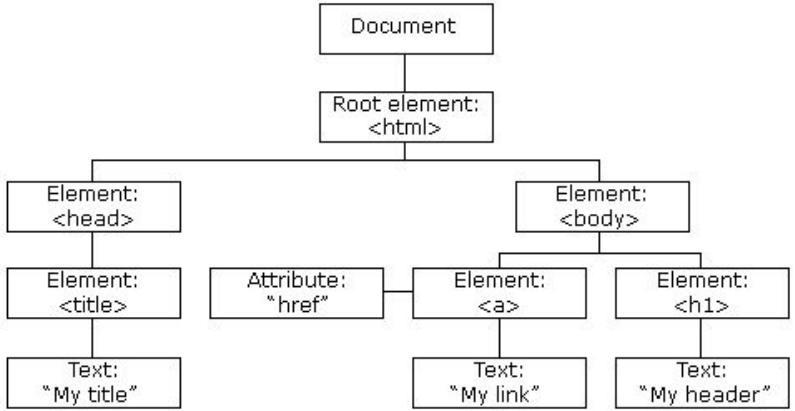
Websites!

01

Javascript can manipulate data in HTML and CSS using DOM

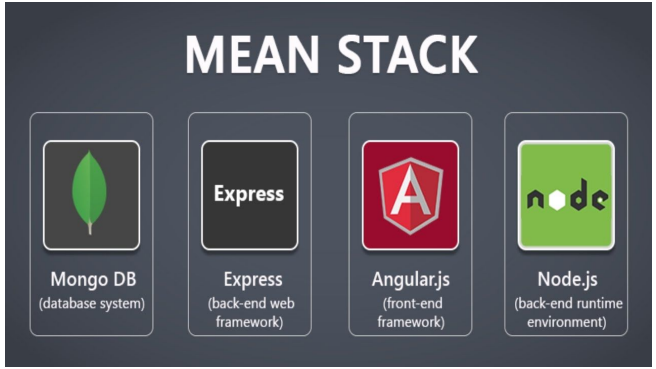
E.g CSEC and CSEC W site

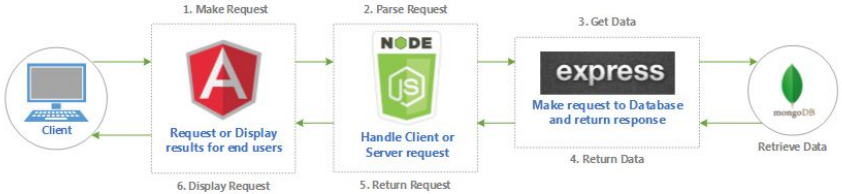
- Animations
- Changing Text
- Pop ups
- Changing backgrounds
- On clicks



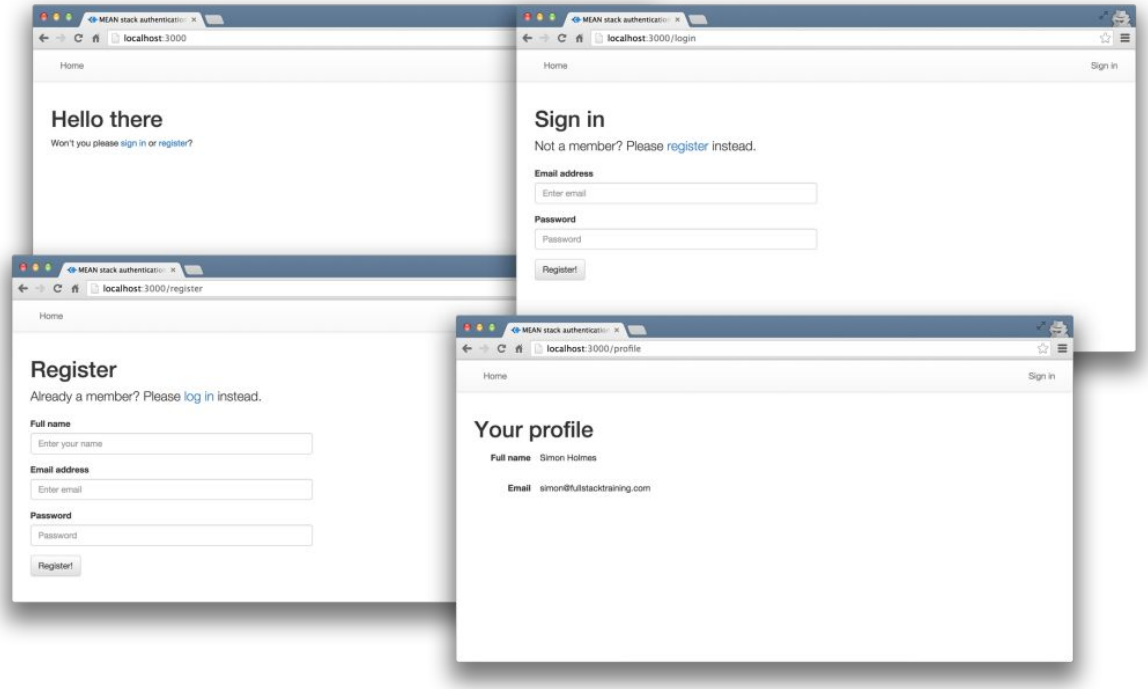
Web Applications
03

Eg. Using the MEAN Stack





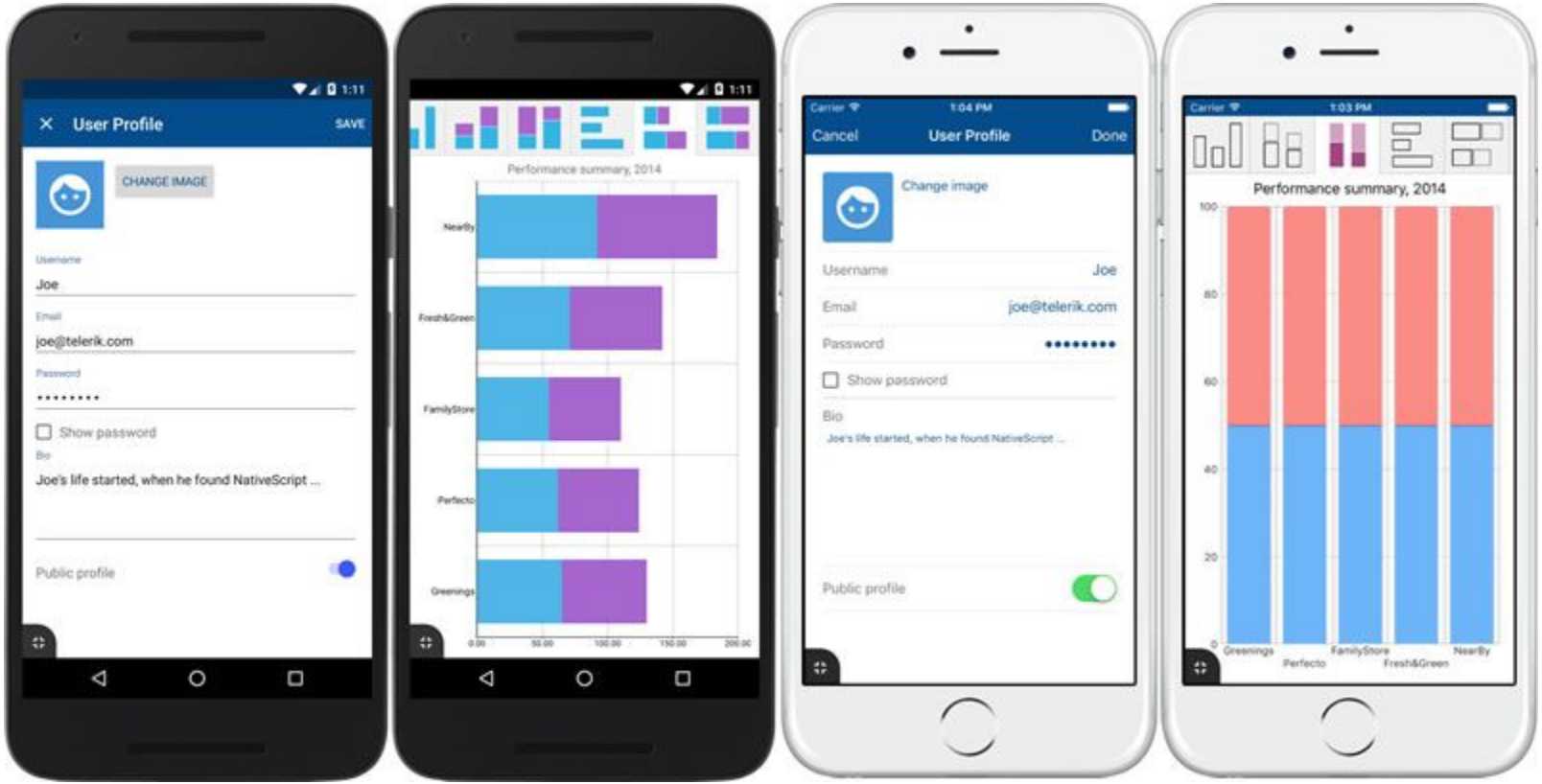
MEAN is a collection of JavaScript-based technologies — MongoDB, Express.js, AngularJS, and Node.js — used to develop web applications.


MEAN stack authentication
localhost:3000
Home
Hello there
Won't you please sign in or register?
localhost:3000/login
Home
Sign in
Sign in
Not a member? Please register instead.
Email address
Enter email
Password
Password
Register!
localhost:3000/register
Home
Register
Already a member? Please log in instead.
Full name
Enter your name
Email address
Enter email
Password
Password
Register!
localhost:3000/profile
Home
Sign in
Your profile
Full name Simon Holmes
Email simon@fullstacktraining.com

Mobile Applications

03

Mobile applications can be made using Javascript technologies


User Profile
SAVE
CHANGE IMAGE
Username
Joe
Email
joe@telerik.com
Password
Show password
Bio
Joe's life started, when he found NativeScript ...
Public profile
Performance summary, 2014
NearBy
Fresh&Green
FamilyStore
Perfecto
Greenings
Cancel
User Profile
Done
Change image
Joe
joe@telerik.com
Show password
Bio
Joe's life started, when he found NativeScript ...
Public profile
Performance summary, 2014
Greenings
Perfecto
FamilyStore
Fresh&Green
NearBy

Syntax

The syntax is very similar to what you've seen before

➔ Javascript takes inspiration from many languages, most notably Python and Java

Debugging:

```
console.log("it broke");
```

Comments:

```
// for in line
/* multiline commenting */
```

Variables

- `var x, y;` `// How to declare variables`
- `x = 5; y = 6;` `// How to assign values`
- `z = x + y;` `// How to compute values`
- `x = 3.14`
- You can also use var to declare strings
- NOTE: Integers, Floats, Long(Numbers) must be set to a variable before operation

Loops

```
var a = 0;
 while (a<100){
    a++;
 }
 for(var a=0;a<100;a++){
  console.log(a);
 }
```

If statements

```
if ((age<20 && name="Moe")||(age>=20)){
  age = age + 1;
} else if {
  name = "Moe " + "Sucks";
} else {

}
```

Selecting HTML elements

document.getElementById("id")

document.getElementByTagName("p");

document.getElementByClassName("class");

document.querySelector("#id .class p");

document.querySelectorAll("#id .class p");

DEMO!

Questions?

References

w3schools-Javascript

CSCC09 Materials