MODULE 3: FRONT END

JavaScript Essentials Part 1

TECH ELEVATOR
A Stride Company

Days of Dial-Up

Type your ID and press [RETURN], then type your Password and press [RETURN]

ID: prince PASSWORD: ******

Static is booooring

- Client side scripting
  - Executes code on the user's browser
  - Allows us to interact with the HTML rendered and the CSS sent by the server
  - Creates less stress on the server
  - More interactive engaging experiences for users

Uses for client side scripting

Responding to events (click, keypress, scroll, resize)

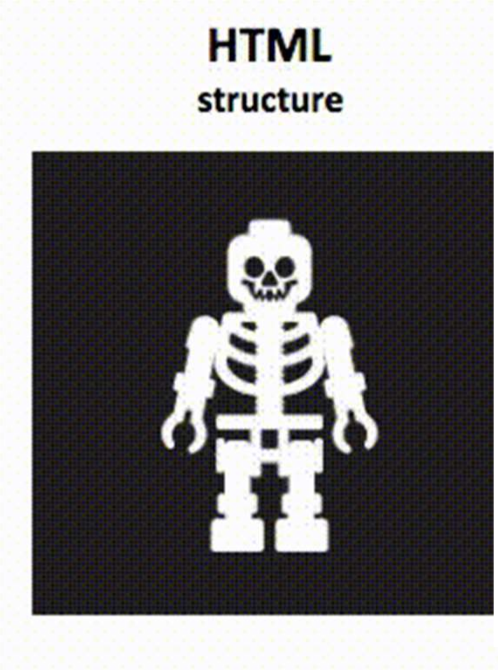
Can interact with other web services / APIs to dynamically update the page

Can manipulate the loaded page without refresh

Separation of Concerns

- What provides the content on a web page
  - HTML
- What provides the look of the web page
  - CSS
- What provides the interaction/behaviors of the web page
  - Client Side Scripting -- JavaScript

The parts…



JavaScript

- Java requires a runtime to execute. (the JVM)
- JavaScript uses a engine to execute.
- Java is compiled code.
- JavaScript is interpreted code.
- Java is statically typed language.
- JavaScript is dynamically typed language.

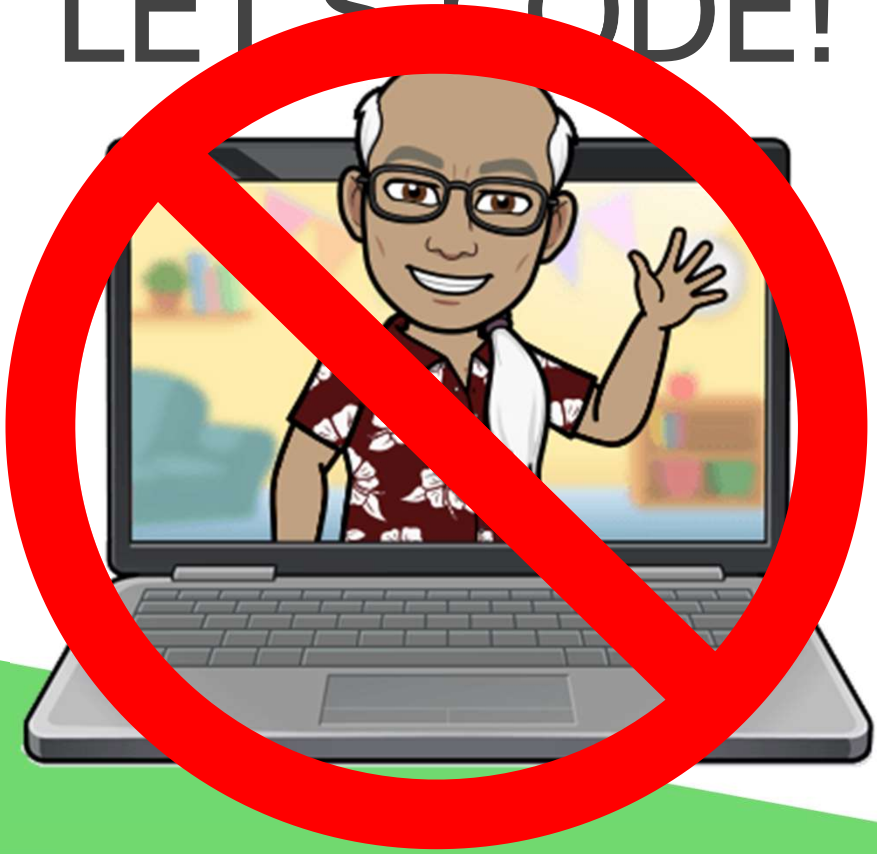
Language Types

A **statically** typed language enforces the data type constraints at compile-time

A **dynamically** typed language infers the data type of what the variable holds at run-time

ELEVATE YOURSELF

LET'S CODE!



Variable Declaration

- var – old style declaration.

- const
- let

```
{
    var x = 2;
}
Console.log(x);
```

```
{
    let x = 2;
}
Console.log(x);
```

Strict Equality vs. Loose Equality

Strict Equality compares two operands for type and value equality (===)

Loose Equality compares two operands for value only after converting to a common type. It will consider two values equal if they have the same value (==)

All our old friends are back!

Comparison Operators

- A **boolean expression** is an expression that produces a boolean value (true or false) when evaluated

Operator	Meaning
==	Equals To
!=	Not Equal To
>	Greater Than
<	Less Than
>=	Greater Than or Equal To
<=	Less Than or Equal To

Logical Operators

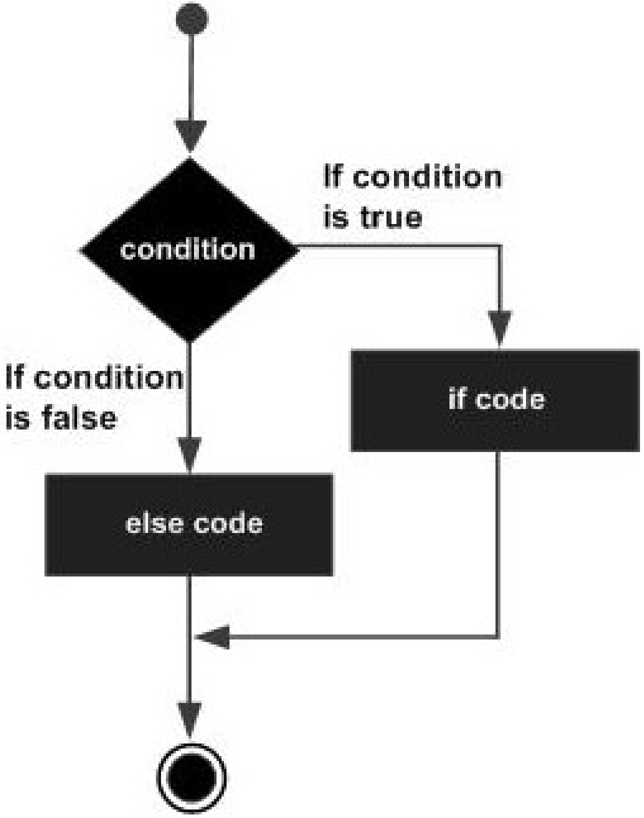
A	B	!A	A && B	A || B	A^B
True	True				
True	False				
False	True				
False	False				

Logical Operators

A	B	!A	A && B	A || B	A^B
True	True	False	True	True	False
True	False	False	False	True	True
False	True	True	False	True	True
False	False	True	False	False	False

If Statement

```
if (condition)
{
   <if code>
} else {
   <else code>
}
```



Code Blocks and Scope

- Code that needs to belong together as a single unit can be written in **blocks**.

```
{
    let length;
    let width;
    let area;
    area = length * width;
}
```

Arrays

- not fixed in size
- Can contain elements of different types

Methods the modify the array:

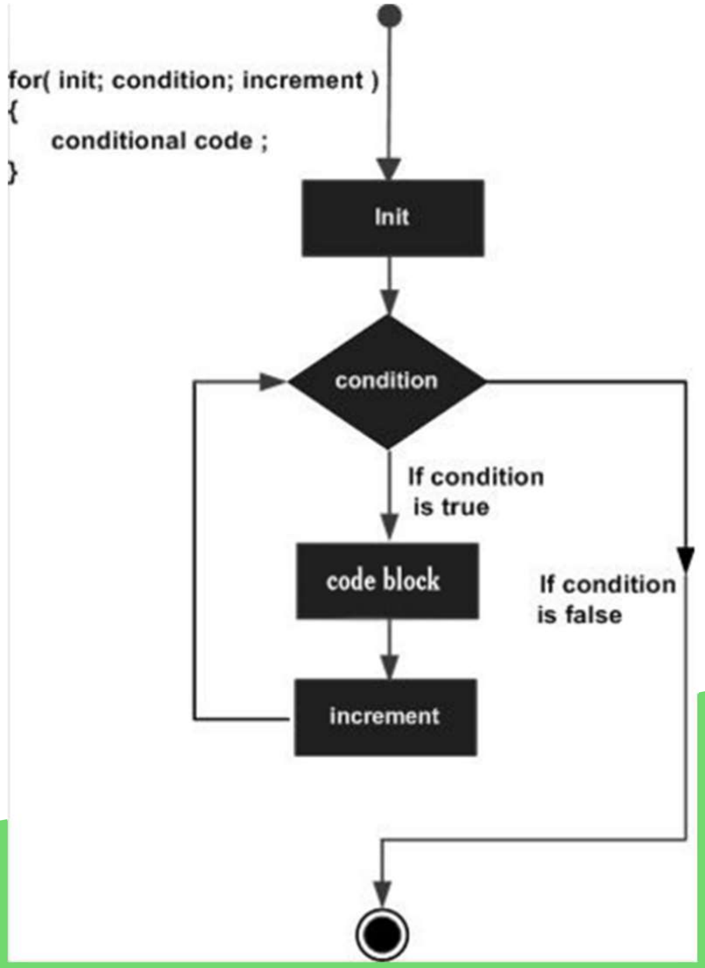
.push()
.pop()
.unshift()
.shift()
.reverse()
.splice()

Methods that dont:

.includes()
.indexOf()
.lastIndexOf()
.slice()
.join()

Accessing Elements in an Array

For loop allows you to check each element in an array.



```
for( init; condition; increment )
{
    conditional code ;
}
```

Memorize this code segment!!

```
for(let i = 0; i < scores.length; i++) {
      ...
  }
```

While and Do While

```
while (condition)
{
        loop to execute
}
```

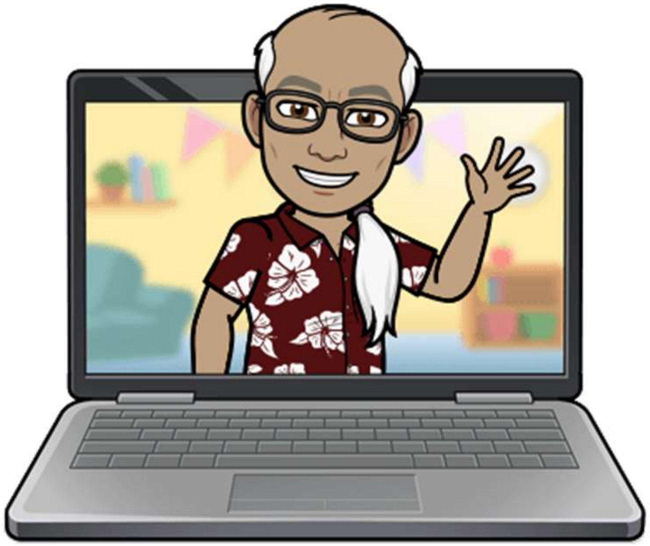
```
do
{
        loop to execute
} while (condition)
```

Object Literals

```
const obj = {
  firstName: “Henry",
  lastName: “Edwards",
  age: 40
 };
```

- Simple Key:Value pairs

LET'S CODE!



WHAT QUESTIONS DO YOU HAVE?

Reading for tonight:

JavaScript Functions