# WEB App Dev

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## Web Scripts and Languages

### Html



#### Basic structure



#### Attributes

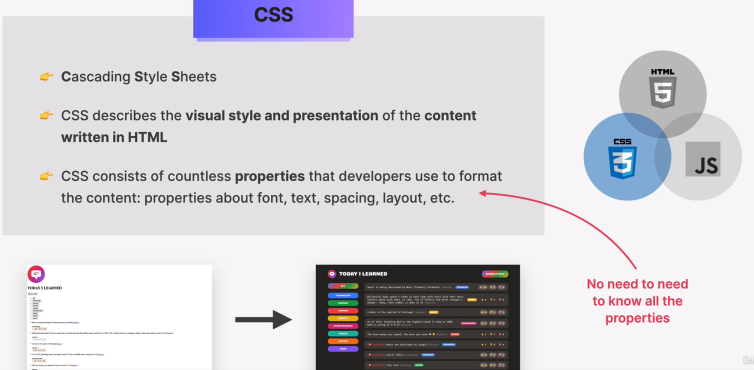
<img src="img\_girl.jpg" width="500" height="600">

Here **src**, **width** and **height** are known as attributes

#### Tags

List of tags: https://www.geeksforgeeks.org/html-tags-a-to-z-list/

### CSS





#### Ways to write CSS

Inline

<**p** style="color:#009900; font-size:50px;

             font-style:italic; text-align:center;">

        GeeksForGeeks

    </**p**>

Internal or embedded

 <**style**>

        .main {

            text-align: center;

        }

        .GFG {

            color: #009900;

            font-size: 50px;

            font-weight: bold;

        }

        .geeks {

            font-style: bold;

            font-size: 20px;

        }

    </**style**>

External

<**head**>

    <**link** rel="stylesheet" href="geeks.css" />

</**head**>

#### Selector

Dot operator is said to be class seletor. Use the while representing style for class



Below screenshot represents tag



Asterick represents **global selector**. This style will be applied for all elements.

#### Units

##### Px

Pixels are a unit of measurement commonly used in web design to define the size of various elements on a web page. The "px" unit represents a fixed-size, square area on a screen.

##### Fr

Fr is a fractional unit. Its an input that automatically calculates layout divisions when adjusting for gaps inside the grid.

grid-template-columns: 1fr 1fr 1fr 1fr;



grid-template-columns: 1fr 1fr 2fr 2fr;



##### Rem

Rem stands for root em - Relative to the font-size of the root element of the document

Em - Relative to the font-size of its nearest parent or the element itself

html {

font-size: 16px; /\* Set the base font size for the entire document \*/

}

body {

font-size: 1rem; /\* 1rem is equal to 16px in this example \*/

}

h1 {

font-size: 2rem; /\* 2rem is equal to 32px (2 times the base font size) \*/

}

p {

font-size: 1.2rem; /\* 1.2rem is equal to 19.2px (1.2 times the base font size) \*/

}

.container {

width: 50rem; /\* Width is set to 800px if the base font size is 16px (50 times the base font size) \*/

}

#### Pseudo class

Keywords that specify a special state of the selected elements. They allow you to style elements based on their state or position in the document. Pseudo-classes are denoted by a colon (:) followed by the pseudo-class name.

***li:nth-child(odd) {***

***background-color: #f0f0f0;***

***}***

***a:hover {***

***color: red;***

***}***

#### Property

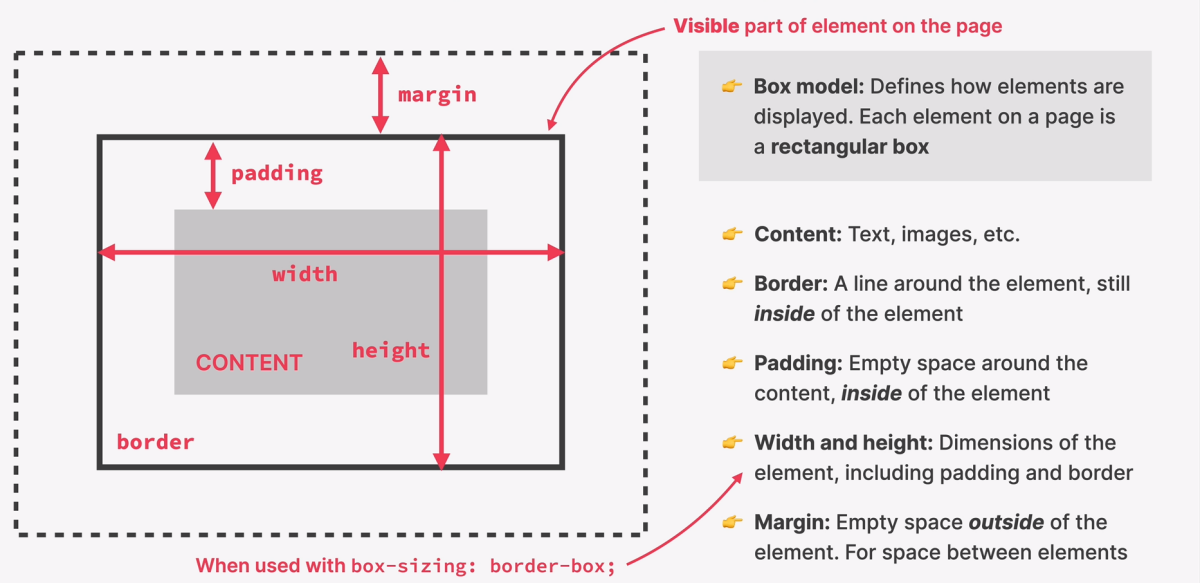
##### Transition property

***element {***

***transition: property duration timing-function delay;***

***}***

#### Box model



##### Property with multiple values

Padding: 16px 24px **(2)**

It can take values,

|  |  |  |
| --- | --- | --- |
| 2 | 3 | 4 |
| Top and bottom padding.  Left and right padding. | Top padding.  Left and right padding.  Bottom padding. | Top padding.  Right padding.  Bottom padding.  Left padding. |

Similarly for border, margin, etc

#### Block and inline elements

##### Block level

Starts on a new line and stretch the full width of their containing element. They create a "block" on the web page. Examples of block-level elements include <div>, <p>, <hx> , <ul>, <ol>, <li>, <table>, and others.

##### Inline level

Do not start on a new line and only take up as much width as necessary. They flow within the content and do not create a new "block." Examples of inline elements include <span>, <a>, <strong>, <em>, <img>

**Display: block** property can be used to change inline element to block level element

#### Layouts

##### Inline

For text

##### Block

For sections in a webpage

##### Table

For two-dimensional table data

##### Positioned

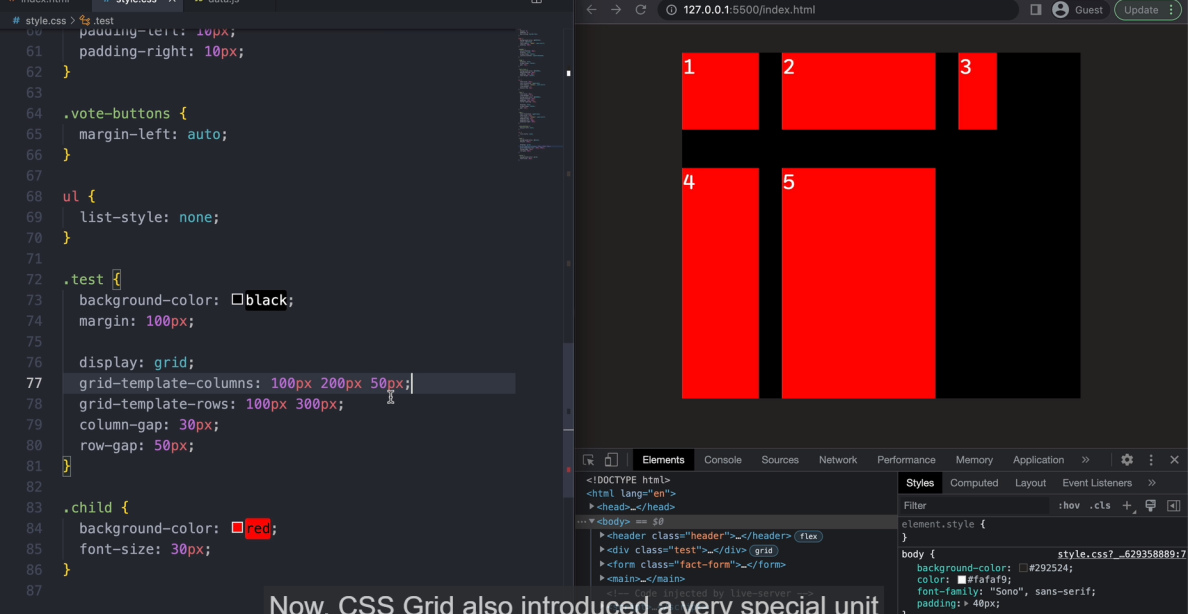
For explicit position of an element

##### Flexbox

This layout module makes it easier to design flexible responsive layout structure without using float or positioning.

##### CSS Grid

Refer test class in below screenshot for some of the example of grid related properties



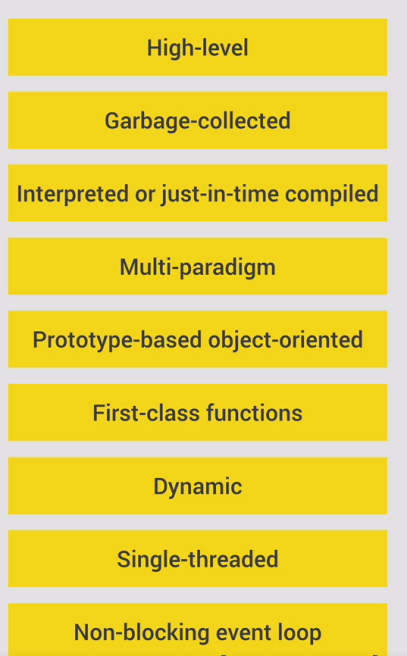
#### References

1. Use google fonts to download/get URL for required font style
2. For color palette: <https://tailwindcss.com/docs/customizing-colors>
3. Html emojis: <https://www.w3schools.com/charsets/ref_emoji_smileys.asp>
4. https://developer.mozilla.org/en-US/docs/Web/CSS

### JS

#### Definition





#### Strict mode

The "use strict"; directive is used in JavaScript to enable strict mode, which helps catch common coding errors and prevents the use of certain error-prone features.

*function myFunction() {*

*"use strict";*

*// The strict mode rules apply only to the code within this function.*

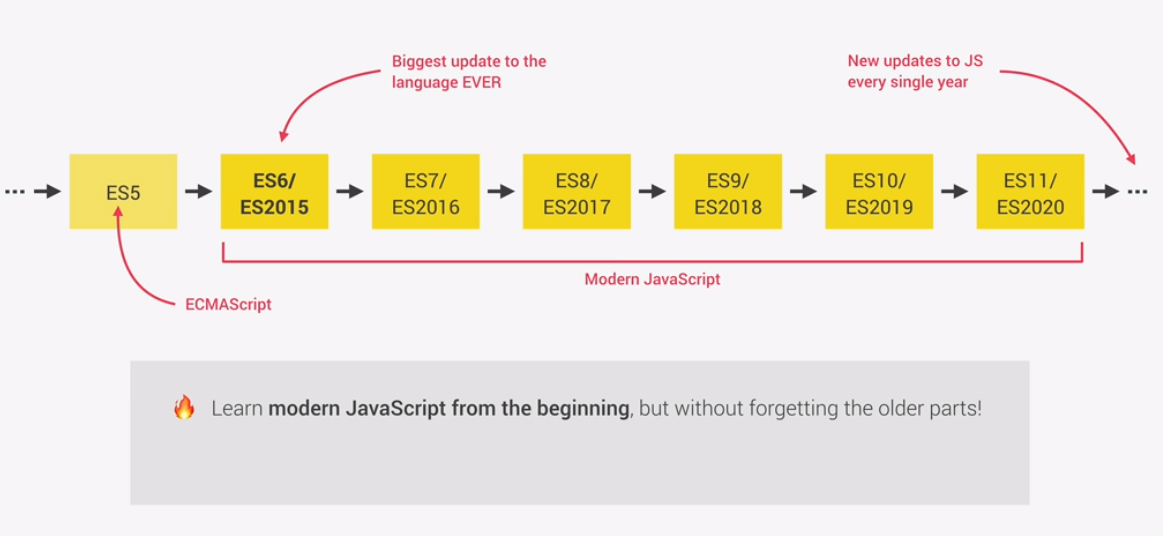
*// Your code here*

*var x = 10;*

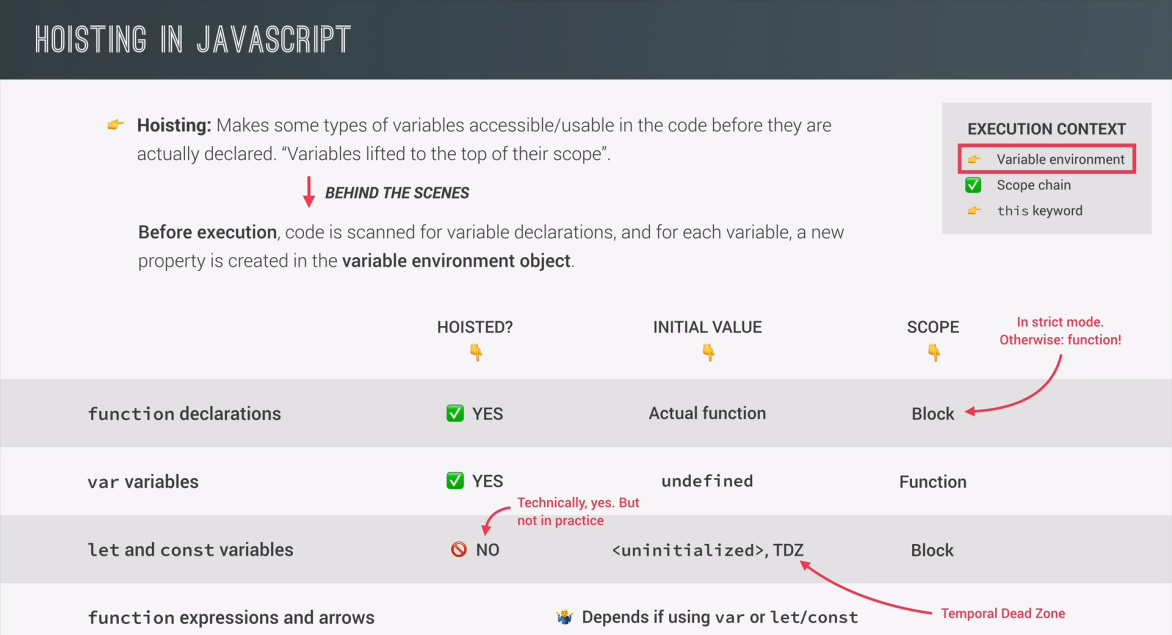
*console.log(x);*

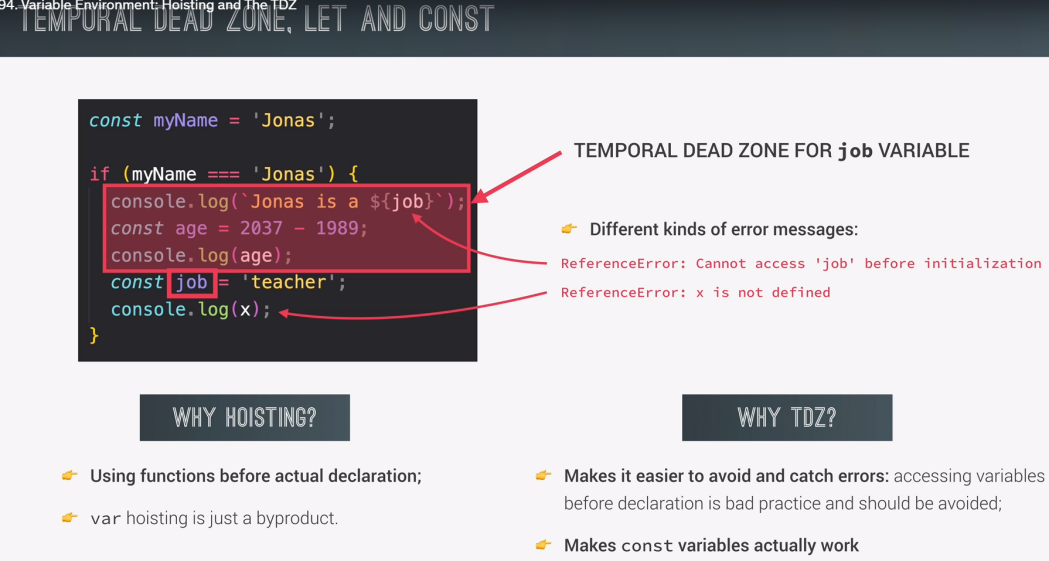
*}*

#### Versions

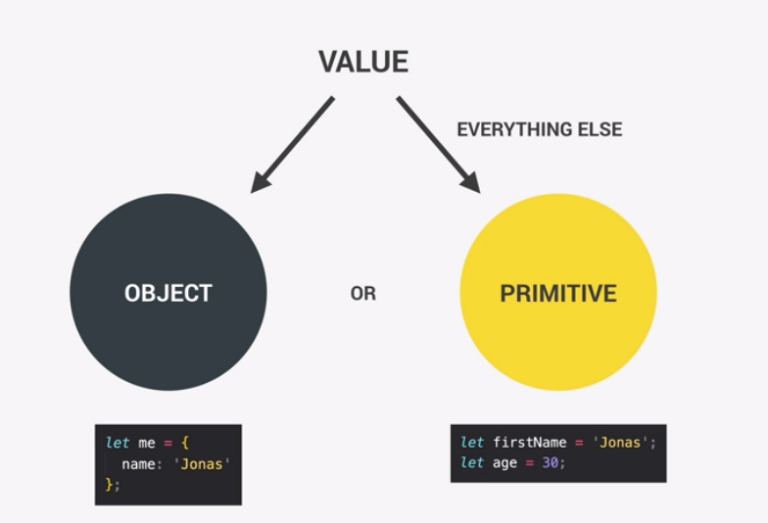


#### Hoisting





#### Types



##### Var,let, const

Age=30;//Variables without any keyword

Console.log(Age);//This will not throw any error

**Var**

Mutable

Used in older js version

Can be used before declare

Age=30;

Var Age;

**Let**

Used in modern JS

*Let age=30;*

*Age=31;//This works*

*Let withoutvalue; //This works*

**Const**

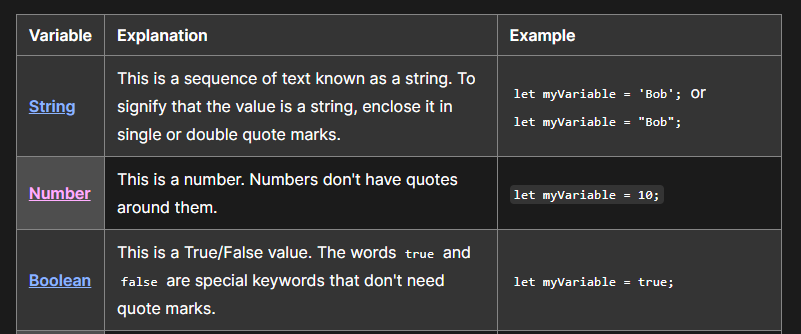
Immutable variable

*Const age=30;*

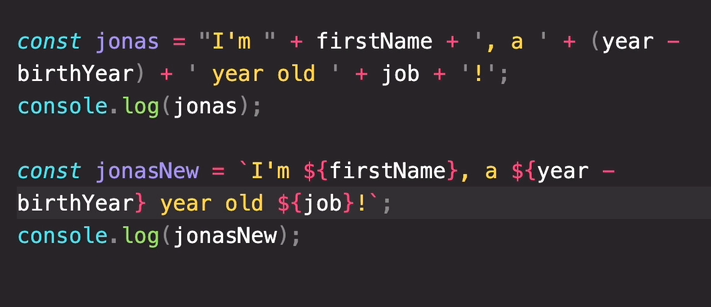
*Age=31;//This line will throw error*

*Const novalue;//This will throw error. Should have some variable.*

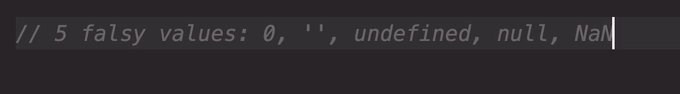
##### Primitive types



###### String



###### Bool



All other values will return true if we convert to bool

##### Non-primitive

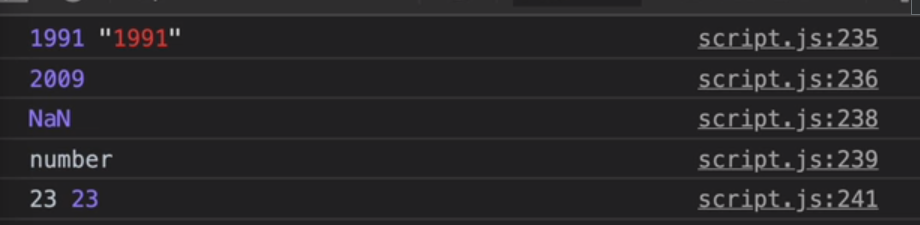
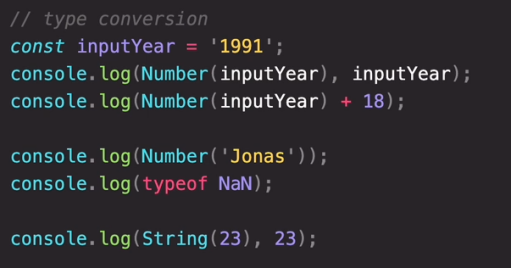
###### Array

###### Object

Used to store various keyed collections and more complex entities

##### Conversion and coercion

###### Conversion



###### Coercion

**(+) Converts number to string**

var num = "5";

var sum = num + 10; // sum is "510" (num is coerced into a string before addition)

**(-, /, \*) Converts string to number**

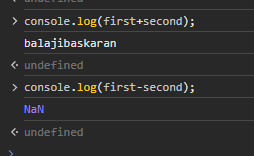
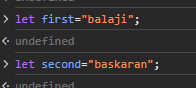
var result = "10" - 5;

console.log(result); // Output: 5 (string "10" is coerced into a number)

#### Operators

2\*\*3 represents 2 power 3

String addition and subtraction

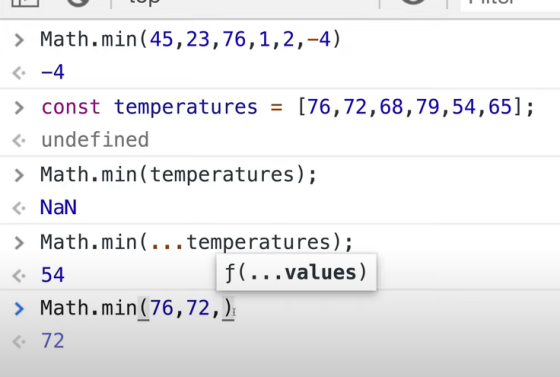


##### Spread Operator

Also known as … operator

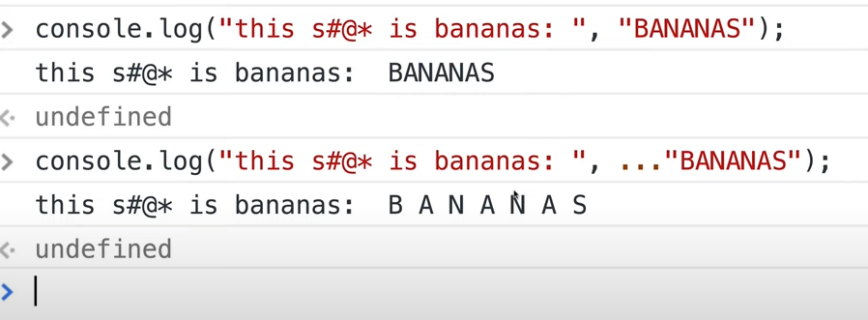
Can be used in

1. Function calls



Math.min(…) takes spread operator as parameter. So ***Zero or more numbers*** can be given as input***.***

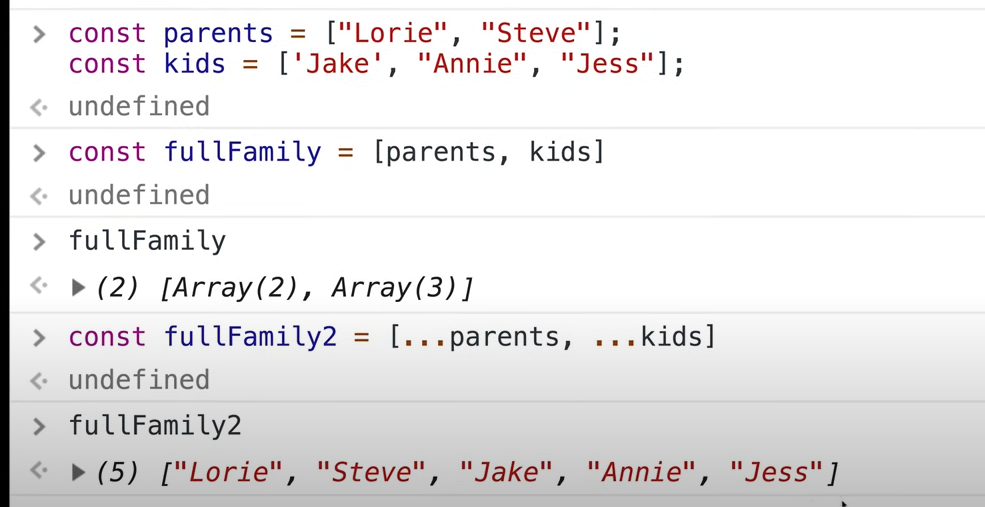




…”BANANAS” splits the string and passes each character as separate input.



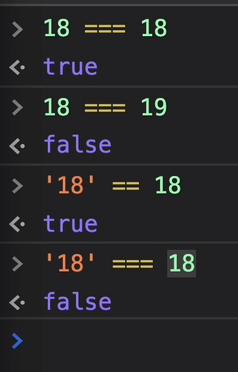
1. Array literals





1. Object literals

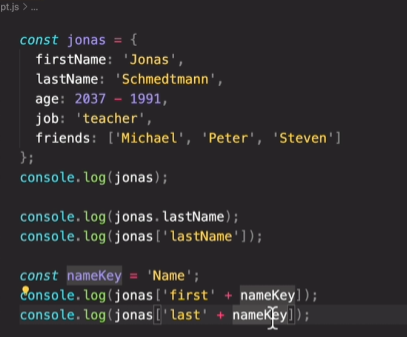
##### Equality operator



Always recommended to use ===

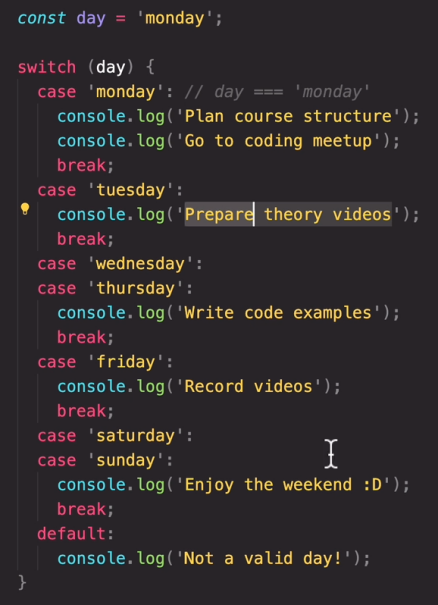
#### Dot and bracket notation

Dot and bracket notations are used to fetch the data from collection



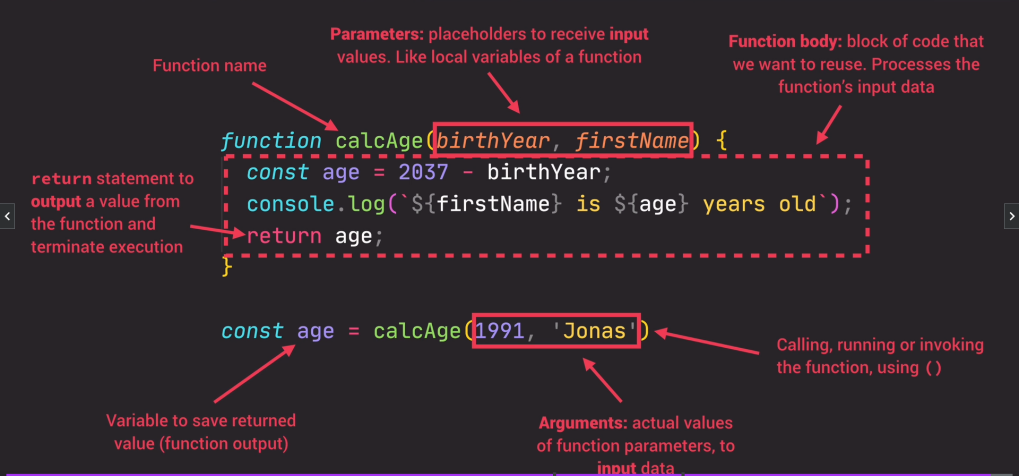
In above screenshot lastName is fetched using dot and bracket notation [‘lastname’]. String inside the bracket can be computed. Shown in last three lines.

#### Switch

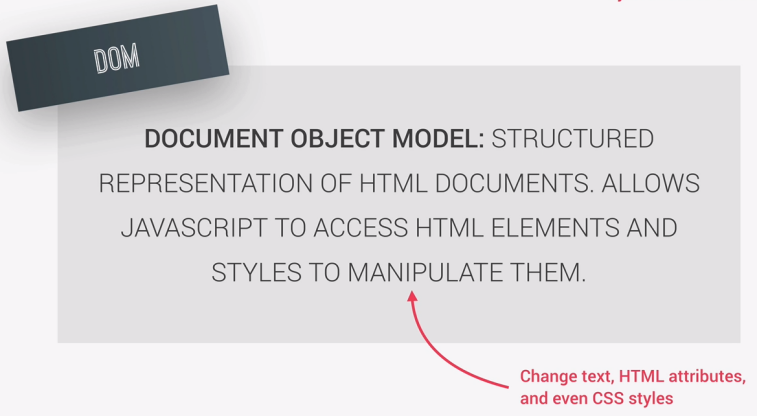


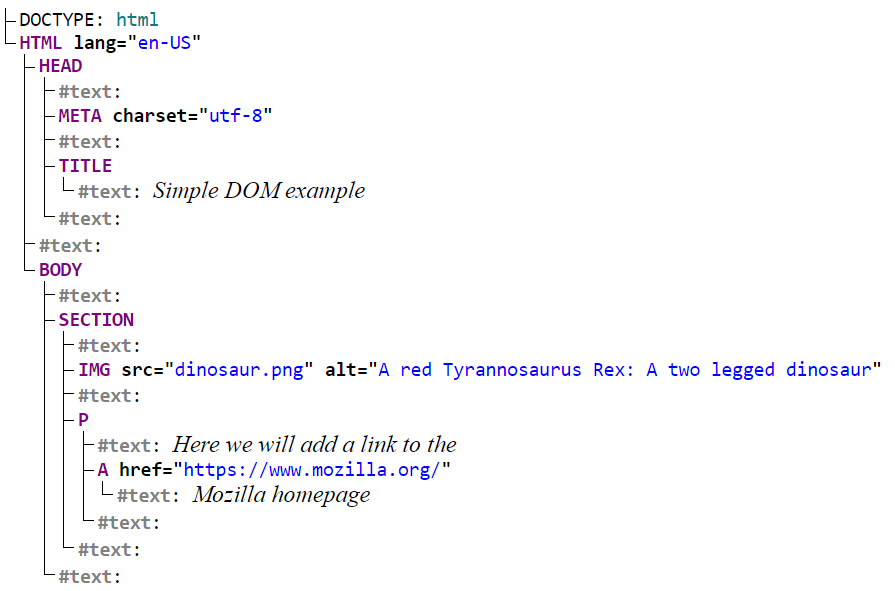
#### Function

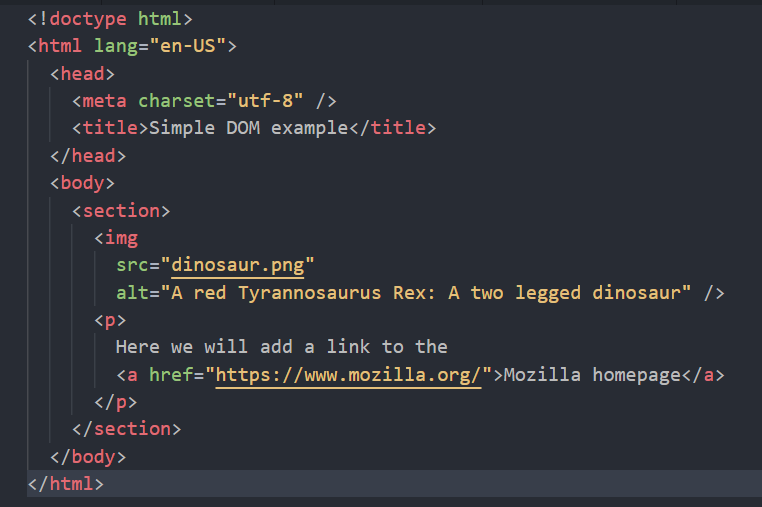
***Refer: DotnetDev\Webpages\Udemy\JsMyRef\function.js for code***



#### DOM







### React

#### Node

Provides runtime environment to run JS code out of browser

#### JSX

JSX is a syntax extension for JavaScript that lets you write HTML-like markup inside a JavaScript file. Although there are other ways to write components, most React developers prefer the conciseness of JSX, and most codebases use it.

##### Rules

* Return a single root element
  + Group all tags under fragment<> </> or <Div>
* Close all the tags
* camelCase all most of the things!

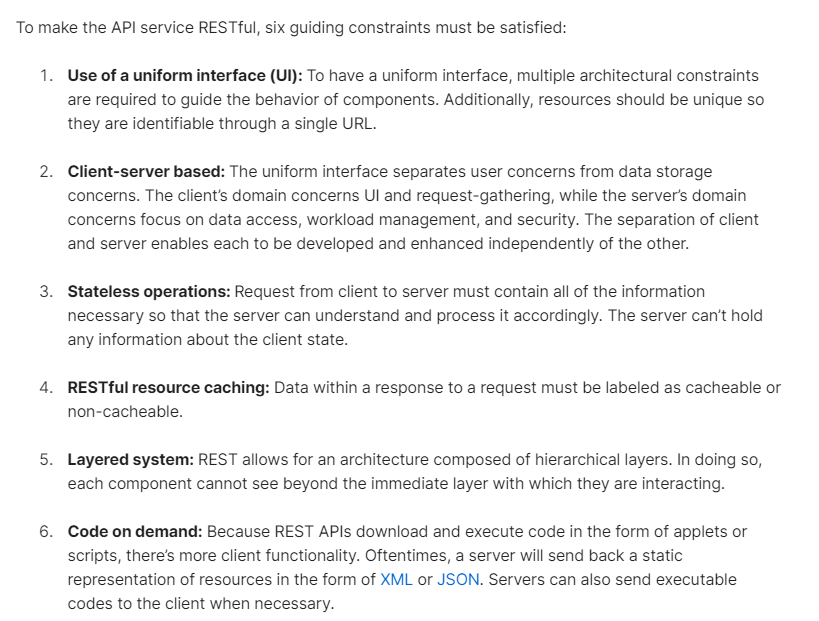
## WEB API

### References

Nick - Dometrain

### REST

#### Six constraints to make API services RESTful



Source: [Link](https://blog.postman.com/rest-api-examples/)

### Authentication and Authorization

### Misc and Questions

#### Interview Questions

#### Redis Output caching

Reference youtube video: <https://www.youtube.com/watch?v=_bg5dGnudPs>

## MVC

### Program.cs

Contains,

Services required by app are configured

Request handling pipeline -> Series of middleware components

#### Dependency injection (services)

***builder is a WebApplicationBuilder***

**builder.Services.**AddRazorPages();

**builder.Services.**AddControllersWithViews();

**builder.Services.**AddDbContext<RazorPagesMovieContext>(options =>

options.UseSqlServer(builder.Configuration.GetConnectionString("RPMovieContext")));

### Razor Pages

### Middleware

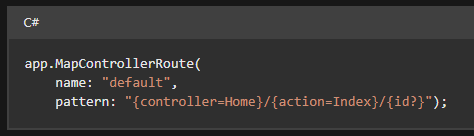
### Model

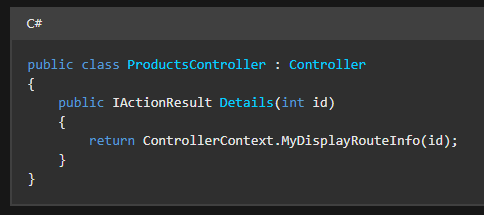
### View

### Controller

### Routing

#### Convention routing





Url: /Products/Details/5

{ controller = Products, action = Details, id = 5 }

#### Attribute routing