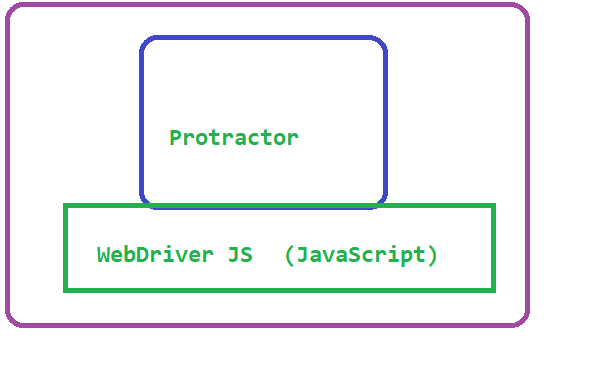
JavaScript and Protractor

What is protractor :

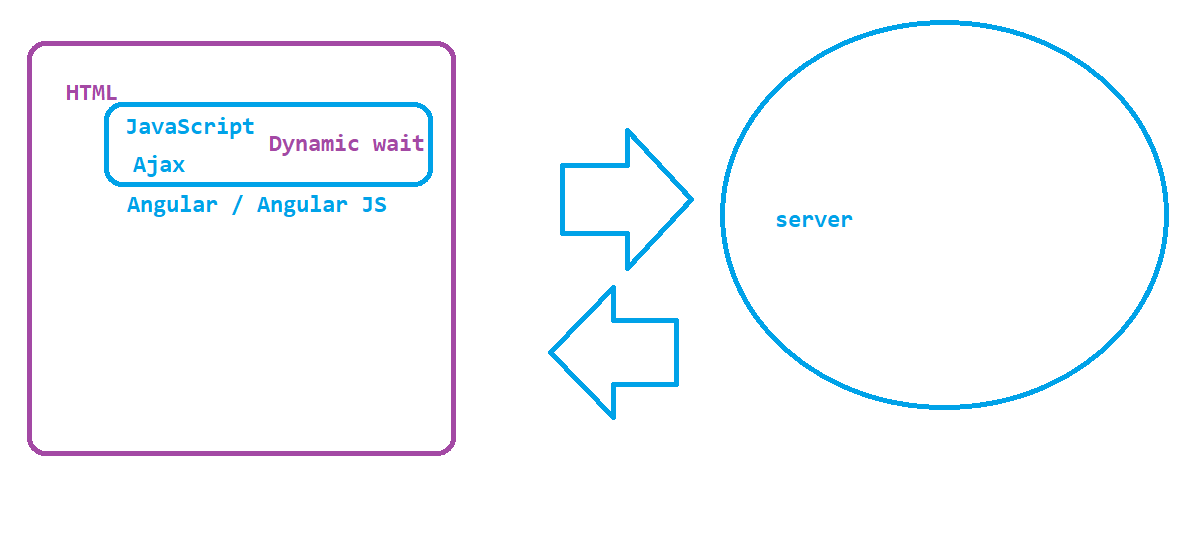
Protractor is a automation tool / framework which is built on top of Webdriver JS (WebdriverJS is a Java script version of selenium )

****

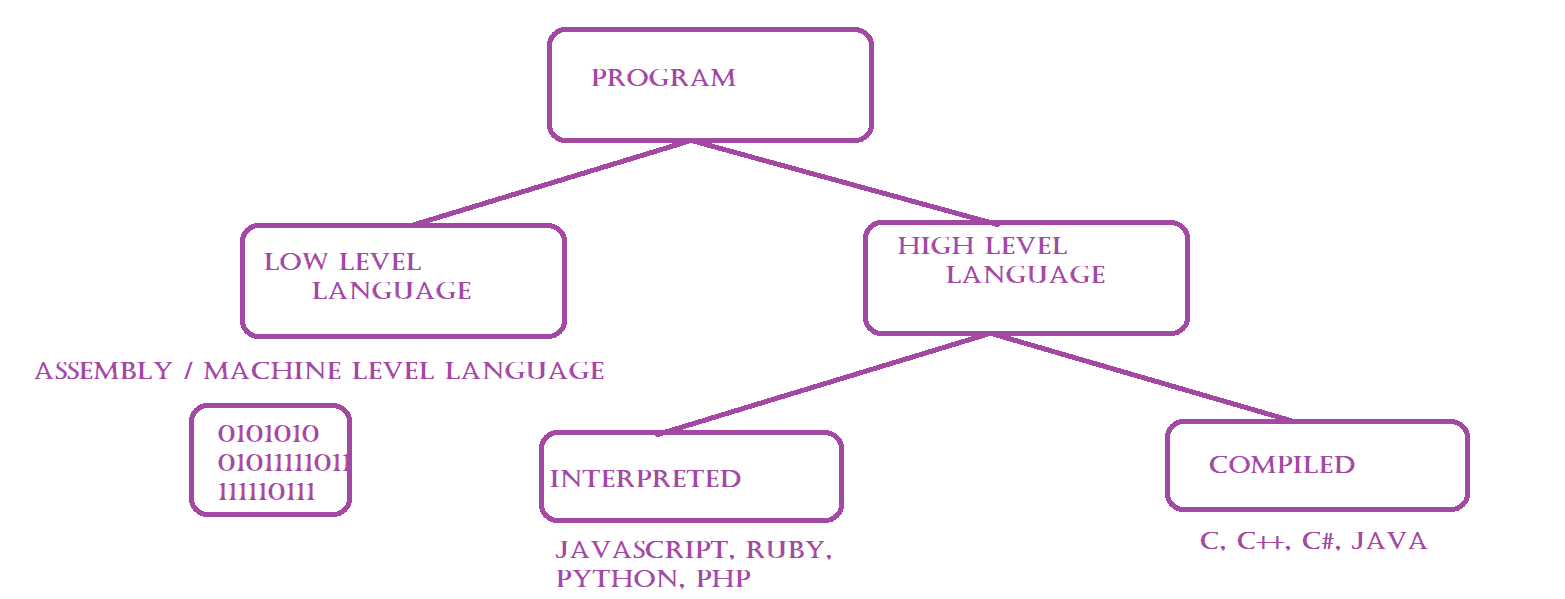
Why Protractor is required :

If the applications are developed using angular or angular JS, then along with normal html attributes (id, name, class name…) we will also have angular specific attributes (ng-repeater, ng-controller etc) which cannot be handled directly in selenium. Also, handling dynamic elements in selenium will be difficult.

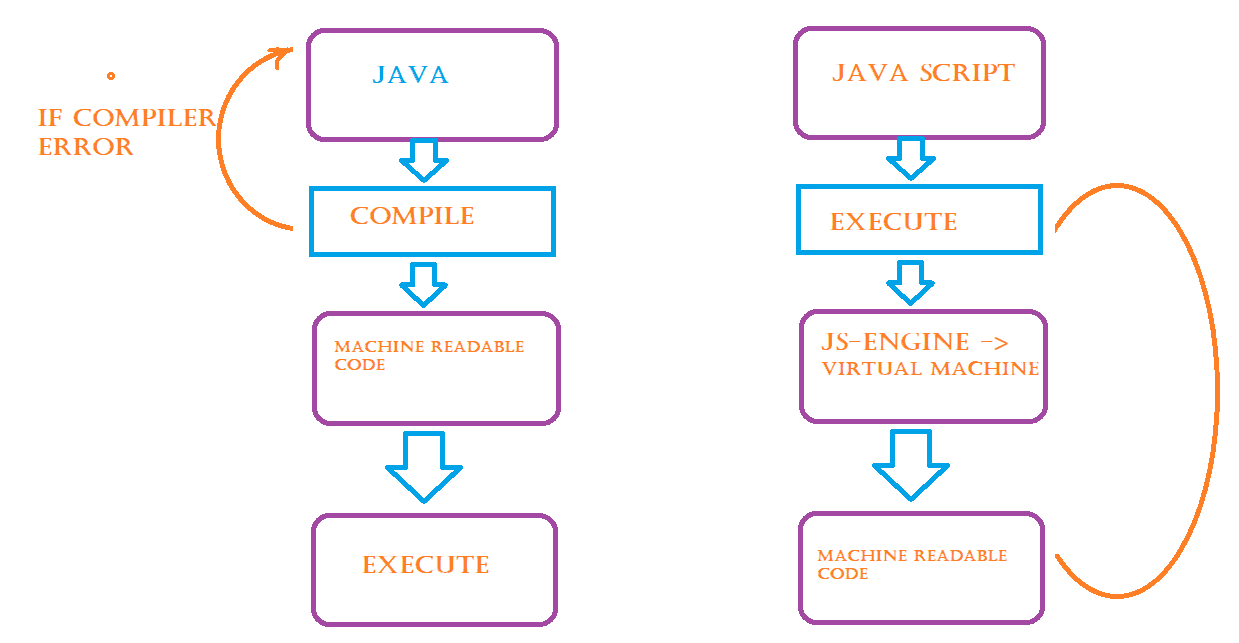
To overcome these 2 drawbacks we go with Protractor

****

PROGRAMMING DEFINITION

****

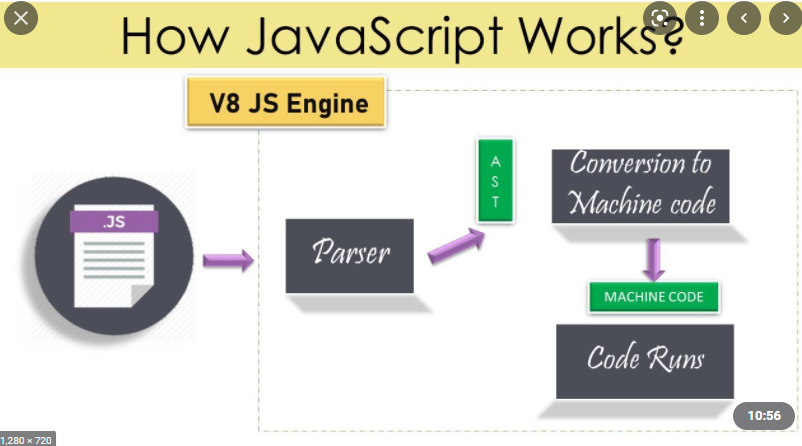
HIGHLEVEL DIFFERENCE BETWEEN INTERPRETED AND COMPILED PROGRAMMING



Java Script :

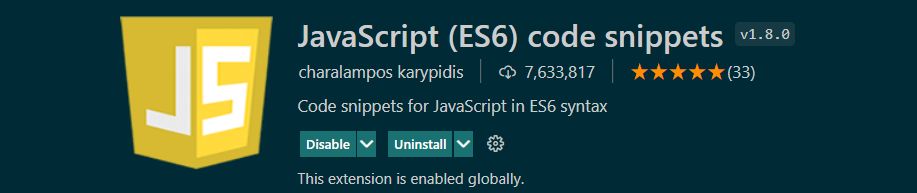
## Javascript is a High level and Interpreted Programming Language, which is introduced in the year 1995 by Bredan Eich

Initially JS is developed as a programming language for WEB but now we can use it in non-browser environments also like node.js

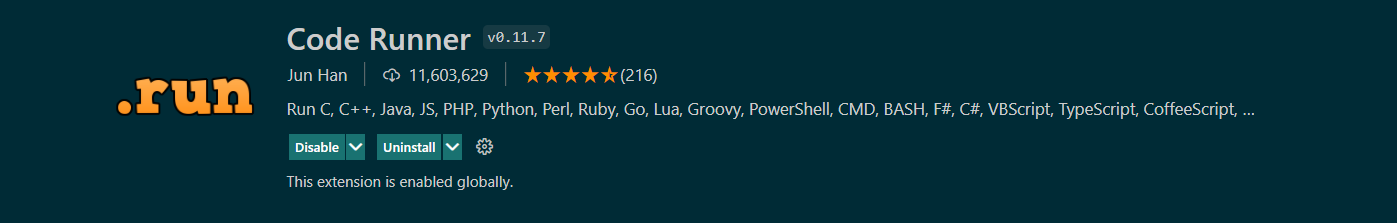


Visual Studio Code Editor

* Download the software from <https://code.visualstudio.com/download>
* Follow the instructions to install the software
* Select File -> Open Folder -> Browse and select the folder (workspace)
* Use Extension option  ( 4th from left panel ) to install the plugin
* Install Javascript code snippet



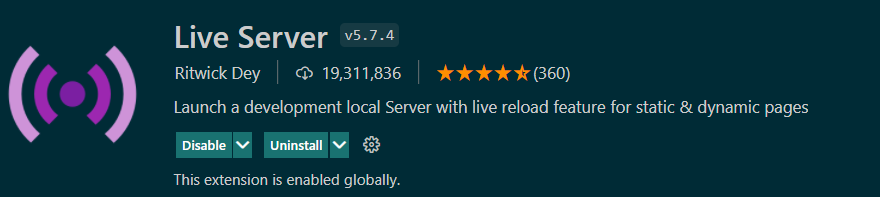
* To Run Java Script code install code runner plugin



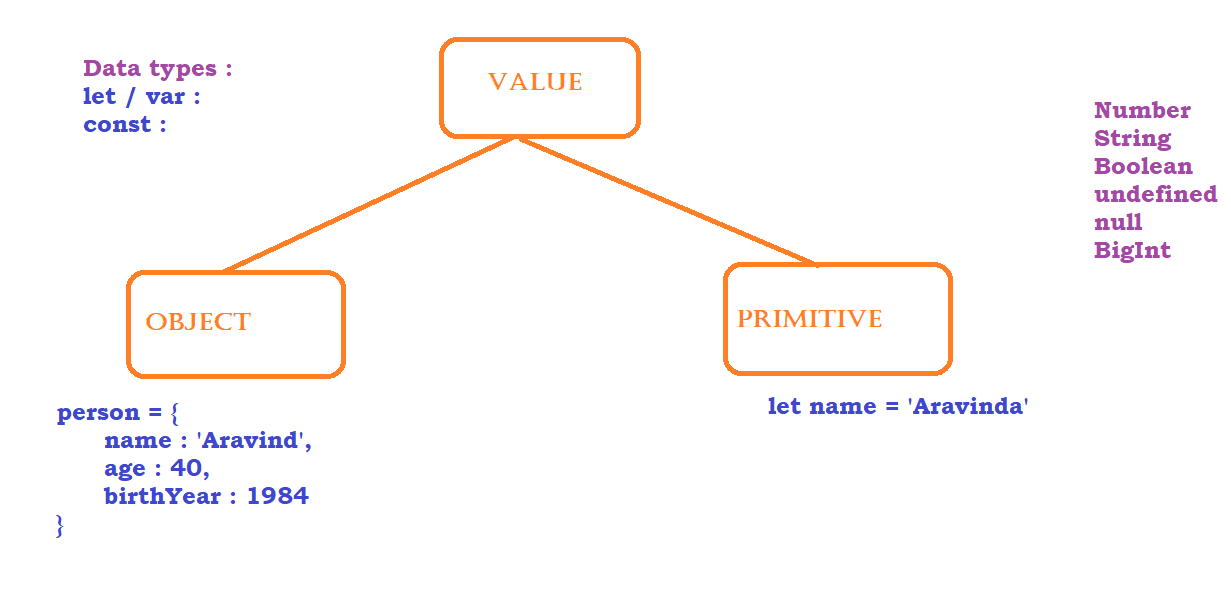
# Before running the program we should make sure we have installed node js software on the machine

* <https://nodejs.org/en/download/>
* open command prompt and test the installation by executing below commands
  + node –v
  + npm –v

to execute javascript on browser



Variables



Javascript supports 2 data types, let and const. based on the value stored inside the variables JS will decide the class variable belongs to. for ex,

1. Number
2. String
3. Boolean
4. undefined
5. null
6. Bigint

NOTE : AVOID USING **VAR** AS IT IS THE OLD WAY OF DECLARING VARIABLES

only difference between VAR and LET is, var is a function scope whereas let is a block scope.

Operators in JS

# Arithmetic Operators

### Addition -> +

### Subtraction -> -

### Multiplication -> \*

### Division -> /

### Module -> %

### Exponential -> \*\*

### Increment -> ++

# Assignment Operators

### Assign = x = y

### Add and assign += x+=y x = x + y

### Subtract and assign -= x-=y x = x - y

### Multiply and assign \*= x\*=y x = x \* y

### Divide and assign /= x/=y x = x / y

### Module and assign %= x%=y x = x % y

### Exponential and assign \*\*= x\*\*=y x = x \*\* y

# Comparison Operators

### check equal Value ==

### check equal Value along with type ===

### check Not equal Value !=

### check equal Value along with type !==

### Greater than >

### Greater than or equal >=

### Less than <

### Less than or Equal <=

### Ternary Operator ?:

# Logical Operators

### Logical AND && x == 5 && y == 5

### Logical OR || x == 1 || y = =5

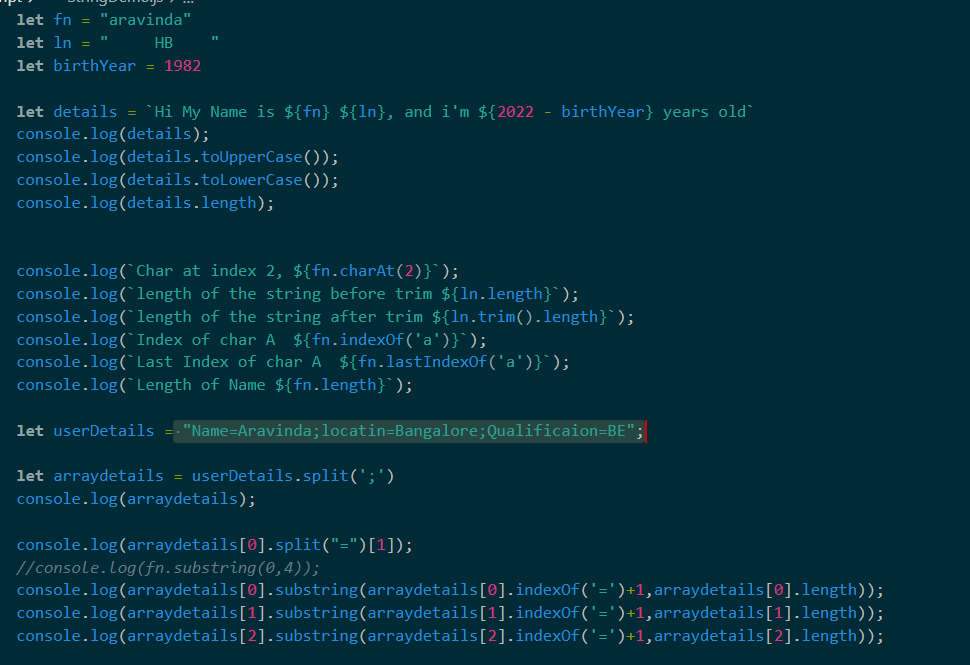
### Logical NOT ! !(x = = 1)

# Type of Operators

### typeOF – returns the type of operator

### instanceOF – returns true if object belongs to a class

Strings



Conditional statements

1. if
2. if else
3. if else if.. else
4. switch

Looping Statements

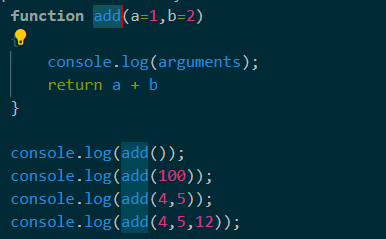
1. for
2. for each -
3. while
4. do while
5. for in – each iteration returns index
6. for of - each iteration returns element

Arrays

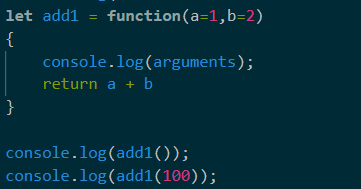
* push
* pop
* unshift
* shift
* delete
* splice
* slice
* concat
* join

Functions

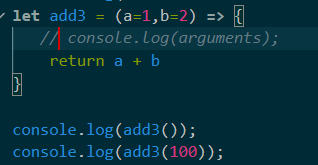
* Function with definition



* Function with Expression (Anonymous Functions)



* Arrow Function



Collections

* Set
* Map

OOPS

* Objects
* class
* abstraction
* encapsulation
* polymorphism
* inheritance