JavaScript:

A website that we use to create websites.

The 3 technologies that use to create websites

1. HTML 🡪 creates content for the website
2. CSS 🡪 appearance of the website
3. JavaScript 🡪 makes the webiste interactive

Setup 🡪 web browser (google chrome) or windows(microsoft edge) /safari

Wht is JS?

* Giving instructions to computer
* The computer follows our instructions
* It is a multipurpose Programming language 🡪 Building websites, API’s, ML, Robotics,..

Whenever we execute a HTML document on the browser, we get the output, what happens is the browser internally creates a tree and it is called as **Document Object Model.**

Initially when it was created, it is a simple programming language with a basic programming features (variables, loops, conditions,arrays , objs..),but it is only created for one thing which is for DOM manipulation means it whole job is to manipulate the tree by changing the ouptut to the broswer.

In 2009, Randal 🡪 If JS performing DOM manipulations, but I also has all the programmig languages that it needs, so now we have languages like C, Java, C# for do the programming outside of the browser, so that he will introduced Node.js [JavaScript Runtime Environment] which is a s/w then we can run JS anywhere in the PC.  
  
We can do DOM manipulations when we work on HTML, but by installing Node.js we can use for API’s, Servers, ML, Robotics,..  
  
After JS 🡪 bun which is much more faster than Node.js

Practical Part

* Console is just like a command prompt for the browser
* Variables are nothing but temporary memory location, where we can store the data in a JavaScript Programming.

Syntax: let var\_name =value;

* Keywords are Case sensitive
* Operators
* Arithmetic : + ,-, \*, /,%
* Relational/ comparision : <,>,<=,>=,==,!=

*// Print to the console*

   console.log("Hello world")

*// variables*

*// In Js no need to make type of data --> means we dont need to tell what type of data it is..!*

*// Also called as Loosly typed Language*

  let num *=*23;

  let num2*=*21;

  console.log(num, num2);

  let res *=*num*+*num2

  console.log(res);

*//changing the variable might be happen in future*

  let a *=*10;

  a *=*100;

  console.log(a);

*//changing the variable might not be happen in future, we use const variable*

  const b*=*10;

*// b=20;*

  console.log(b);

  let name *=*"Pannu"

  console.log(name);

  let fname *=*"Pavani";

  console.log ("The name is "*+* fname *+* " and age is "*+* num); *//concatanation*

*//String templaing -backtick*

  console.log(`The name is ${fname} and the age is ${num}`);

*//Operators : Used to perform operations on data, calculations/comparing/check something correct or not*

*//Binary operators:-*

*//Arithmetic : +,-,\*,/,%*

  let n1 *=*5;

  let n2 *=*5;

  let n3 *=*6;

  res *=* n1*+*n2

  console.log(res);

*//comparision/relational: <,>,<=,>=,==,!= [only one output--> T/F(boolean)]*

  console.log(n1*==*n2);  *// we can only compare type to type not for other type*

*//Identity operators [===]*

  console.log(n1*===*n2);

*//logical operators [&& , ||, !], when we work with multiple comparisions*

  console.log((n1*===*n2)*||*(n2*===*n3))

*//assignment operators [assign values to variables] +=,-=,\*=,/=,%= (Assignement will be work from right to left)*

  let ab *=*1;

  ab*+=*3; *//ab=ab+3*

  console.log(ab);

*//Unary operators [++,--]*

  let abc *=*5;

  abc*--*;  *// abc=abc-1*

  console.log(abc);

*//main example*

let p *=*1;

let q *=* p*++*;

console.log(p,q);

 q *=* *++*p;

console.log(p,q);

*//conditional statements [if, if-else]*

let x *=*4;

*if*(x*===*5){

  console.log("Dummy code");

}

*else*{

  console.log("else block");

}

console.log("After if block");

*//multiple conditions*

let per *=*90;

*if*(per*>*80 *&&* per*<=*100){

  console.log("A grade");

}

*else* *if*(per *>=*60 *&&* per*<*80){

  console.log("B grade");

}

*else* *if*(per *>=*40 *&&* per*<*60){

  console.log("C grade");

}

*else*{

  console.log("FAIL")

}

*//switch case [checking for single values again and again we use switch cas ]*

let status *=*2;

*switch*(status){

*case* 1:{

    console.log ("Active");

*break*;

  }

*case* 2:{

    console.log("Inactive");

*break*;

  }

*case* 3:{

    console.log("Deleted");

*break*;

  }

}

*//loops -->  it is a structure that has ability to execute again and again   [for, while, do-while]*

*//while loop*

let numb*=*5;

*while*(numb*<=*10){

  console.log(numb);

  numb*++*;

}