**Variables**

Variables is a box where we can store a value. We can use variables reference over and over on our code.

**JavaScript Variables Name Declaration**

1. Variables name can’t be start by Uppercase Letter
2. Variables name can’t contain (, &)
3. Variables Name can’t Start with Number
4. Variables Name can’t be JavaScript Reserve Words.
5. To Store Real Constant Values Declare the Variable Name with all Uppercase Letter
6. Variable name is to be related to its stored values( this is for more clean code)

Type Conversion & Type Coercion

**Type Conversion:** Type Conversion means manually convert data one type to another type.

**Type Coercion:** It means automatically convert data one type to another(JavaScript doing it for us automatically).

Falsy Values

**Falsy values:** Falsy values are values that are exactly false but will bacame false  when we try to convert them into Boolean. In javaSscript 05 (five) falsy values.they are: 0, " ",null, Undefined, NaN;

Expression & Statement

**Expression:**Expression is a pice of code that produces a value;

example: 2\*3 ,1996 , true&&false&& !true (because that a produces a boolean value)

**Statement:** statement is like a bigger pice of code,that is executed and which doesn't produce a value on it self.

example: if,else & switch statement.

***Function***

**Function:**Function is simply a piece of code that we can reuse over and over again in our code. its like a variable but difference between variables and function is that- a variables can holds a value but function can holds one or more than complete lines of code.

Function is a value.as like string,number,boolean.

Function is not a type like string type or Number type.function is a value that's why we store a function in a variable

1. const calcAge2=function(birthYear){
2. return 2037-birthYear;
3. }

**Anonymous Function:**Which function has not a name, this type of function called Anonymous Function. Example:

1. const calcAge2=function(birthYear){
2. return 2037-birthYear;
3. }

In Function Declaration we called the function before function is Created; but in Function Expression this is not worked.

1. const age1=calcAge1(1991);
2. function calcAge1(birthYear){
3. return 2037-birthYear;
4. }
5. console.log(age1);

Array

An array is a special type of variable that stores multiple values using a special syntax. An array can be created using array literal or Array constructor syntax. Array literal syntax: var stringArray = ["one", "two", "three"]; Array constructor syntax: var numericArray = new Array(3);

// Declare an Array with Array literal syntax

const friends=['Ujjal','Ezharul','Zonayed'];

// Declare an Array with Array constructor syntax

const birthYear=new Array(1985,1991,1969);

We can check each element of array by their index number (if element is available in array than it returns elements index number .if element is not available in array than it returns -1;

console.log(friends[0]);//this is log first element of Array

console.log(friends[friends.length-1]); //this is shows last element of Array

we can also check index number of an array element

console.log(friends.indexOf('Ujjal'));//this is log index Number of 'Ujjal'

we can check one element is available in Array or not. If element is available than it returns true (Boolean value) else it returns false

console.log(friends.includes('Ujjal')) //this is checked avability of 'Ujjal' in friends Array.is 'Ujjal' is available in friends Array its return true else it return false //output=true;

console.log(friends.includes('Sajib')); //output =false;

**push() Method in Array:** By the push method we can add an element in array. But remember that it add element at last in array.

// push Methode

friends.push('Sajib'); //here push() methode add element 'Sajib' in friends Array in last.

console.log(friends);

if we do that things-

console.log(friends.push('Sajib'))

this return length of Array(new created)

**unshift() Method in Array:** By the push method we can add an element in array. But remember that it add element at first in array.

// unshift Methode

friends.unshift('Sweety'); //here push() methode add element 'Sweety' in friends Array in first.

console.log(friends);

if we do that things-

console.log(friends.unshift('Sweety'));

this return length of Array(new created)

**pop() Method in Array:** By the pop method we can remove an element in array. But remember that it remove element at last in array.

// pop Methode

friends.pop(); //here push() methode remove element 'Sajib' in friends Array from last.

console.log(friends);

if we do that things-

console.log(friends.pop());

this return last element of Arrays

**shift() Method in Array:** By the shift method we can remove an element in array. But remember that it remove element from last in array

// shift Methode

friends.shift(); //here shift() methode remove element 'Sweety' in friends Array in first.

console.log(friends);

if we do that things-

console.log(friends.shift());

it return first element of Arrays