Programming with JavaScript

Introduction to JavaScript:

- JavaScript is a Scripting Language
- Many used in web pages to improve design, validate forms, detect browsers, and create cookies.
- By default, all web browsers have in built JavaScript support.
- JavaScript is the most popular programming language in the world and that makes it a programmer's great choice. Once you learnt JavaScript, it helps you developing great front-end as well as back-end software's using different JavaScript based frameworks like jQuery, Node.JS etc.

There are many useful **JavaScript frameworks** and libraries available:

- Angular ------------- **framework**
- React ------------- **library**
- jQuery ------------- **library**
- Vue.js ------------ **library**
- Node.js ------------- **environment or backend**

Website VS Web Application

Server Side VS Client Side Script

How Use JS?

JavaScript object document?

document.write("Hey");

how to comment?

Implementation of HTML.

Variables : var , let , const … difference between.

Data types. String, number, Boolean, Array, object, function, null, undefined.

Chrome console.

Global Variable VS local Variables.

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

Assignment Operator : = , += , -= , *= , /= , %=

Comparison Operator : == , === , != , !== , > , < , >= , <=

If statement in details.

Logical operator. It is use in if statement. && , || , !

Concatenation

Template String.

Alert.

Confirm box

Prompt

Prompt with parseint();

Class Assignment: make marksheet with parseint();

Function.

All Loops.

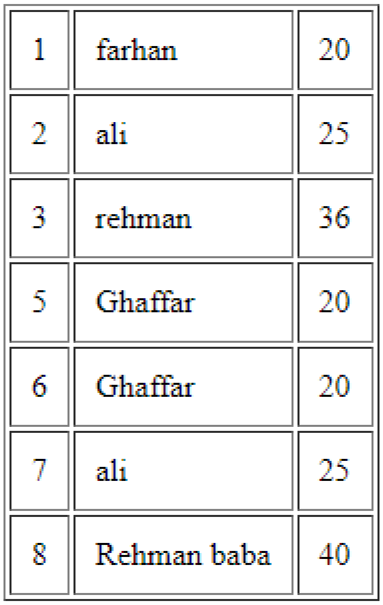
For loop

While loop

Do while loop

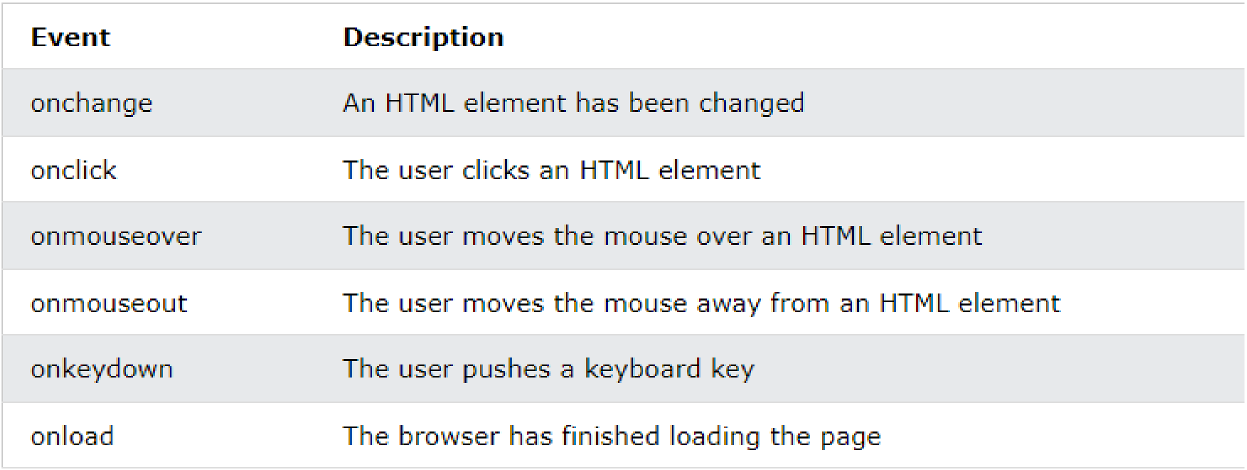
Assignment .. find odd, even numbers.

Create this using table , loop and array



1	farhan	20
2	ali	25
3	rehman	36
5	Ghaffar	20
6	Ghaffar	20
7	ali	25
8	Rehman baba	40

JavaScript Events



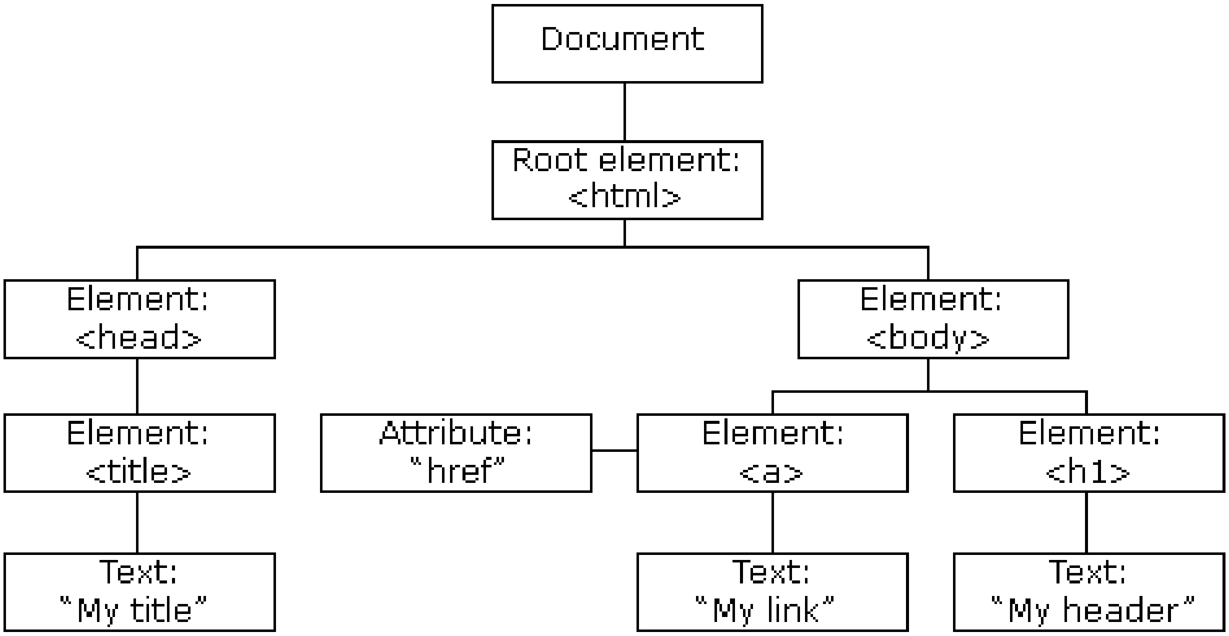
Event	Description
onchange	An HTML element has been changed
onclick	The user clicks an HTML element
onmouseover	The user moves the mouse over an HTML element
onmouseout	The user moves the mouse away from an HTML element
onkeydown	The user pushes a keyboard key
onload	The browser has finished loading the page

DOM

Document Object Model:

The **HTML DOM** model is constructed as a tree of **Objects**:

- JavaScript can change all the HTML elements in the page
- JavaScript can change all the HTML attributes in the page
- JavaScript can change all the CSS styles in the page
- JavaScript can remove existing HTML elements and attributes



HTML DOM Target Methods:

- getElementById
- getElementsbyClassName
- getElementsbyTagName

use however you want.

Get with DOM

- Html
- Text
- Attribute

For Get:

- innerText **important**
- innerHTML **important**
- getAttribute for find attribute value
- getAttributeNode for find attribute
- Attributes for find all Attributes.

For Set:

- innerText
- innerHTML
- Setattribute
- Attributes **use in array syntax**
- Removeattributes.

JavaScript Query Selector:

- QuerySelector
- QuerySelectorAll **in the sense of array**

DOM Styling In javascirpt

- style
- className **for add class use with =**
- classList **return in array. Add()**

```
document.getElementById("heading").style.backgroundColor = "red";
```

Javascript Add Event Listener Method:

It is use for events.

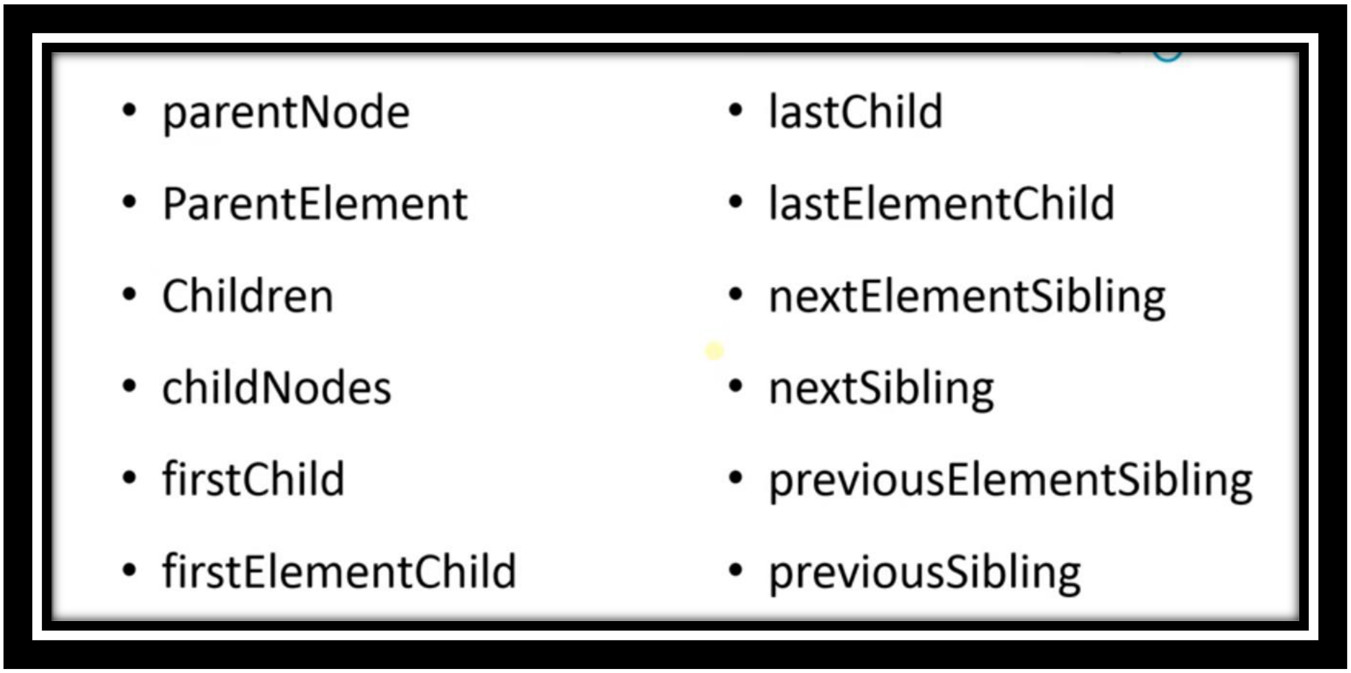
Syntax:

document.getElementById(“head”). addEventListener(“event”,functionname);

Example:

```
document.getElementById("hl").addEventListener("click",function(){
this.style.backgroundColor = "red";
 })
```

Traversal Method in JavaScript:



- parentNode
- ParentElement
- Children
- childNodes
- firstChild
- firstElementChild
- lastChild
- lastElementChild
- nextElementSibling
- nextSibling
- previousElementSibling
- previousSibling

This All use in Practical.

DOM Create Methods:

- createElement
- createTextNode
- createComment

Example:

```
console.log(document.createElement("p"))
console.log(document.createTextNode("Hey i am farhan"))
console.log(document.createComment("end of website"))
```

DOM Append Method:

- appendChild or append
- insertBefore

appendChild:

Example:

```
console.log(document.getElementById("para").append("HEy jf   is append text"))
```

Big Example:

```
var element = document.createElement("h1")
var node = document.createTextNode("Hey This Awesome place");
element.append(node)

document.getElementById("para").append(element)
```

insertbefore

it is like appendchild but it is add child in start.

How to get value from input:

Array Methods

Sort

Reverse

Push to add value

Pop to remove value

indexOf .. it is find to data in array and return index num. if don’t so return -1;

includes method for name but it is return true or false.

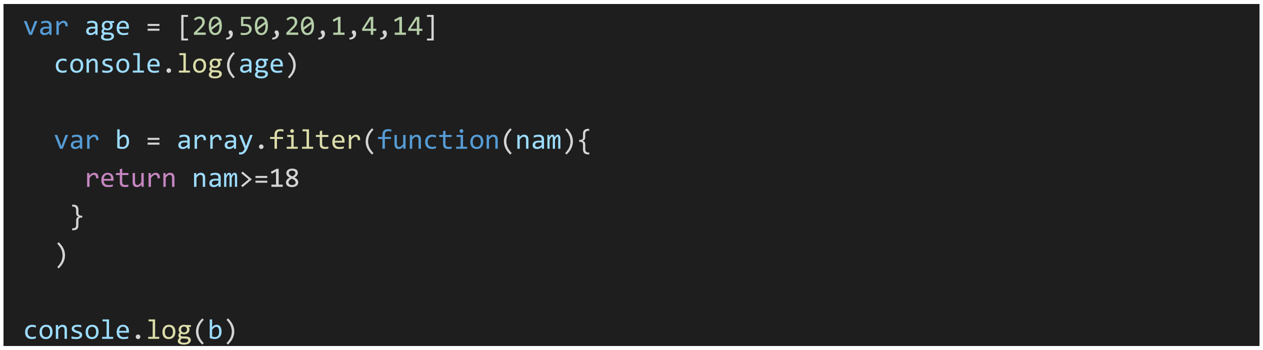
Call back functions:

Find : to find a first index number for find start values.

FindIndex: same as a find method. a first index number for find index number.

Filter to find values in array and create another array.

Syntax;

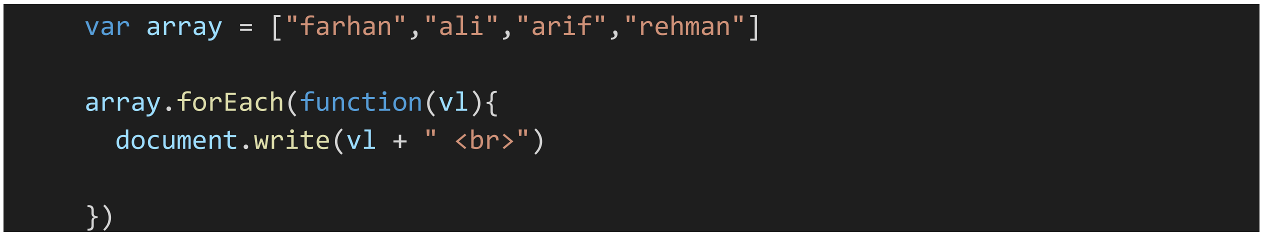


```
var age = [20,50,20,1,4,14]
  console.log(age)

  var b = array.filter(function(nam){
    return nam>=18
   }
  )

console.log(b)
```

For each Loop:

Just like another but It is very easy as compare to for loop.

Syntax:



```
    var array = ["farhan","ali","arif","rehman"]

    array.forEach(function(vl){
      document.write(vl + " <br>")

    })
```

Array.forEach(function(val,index){

Document.write(val + index);

})

For In LOOP:

It is use only for object.

```
 var obj = {id :1 , name: "farhan",age : 20}
for (const key in obj) {
   console.log(obj[key])
}
```

Map Method In JS:

It is use for creating gallery or other things.

```
array.map(function(val,index){
  console.log(val + index)

})
```

Date Use in JS:

```
var now = new Date();
console.log(now.toDateString());
console.log(now.toTimeString());
```

we can fix the date.

```
var now = new Date("June 19 2021");
console.log(now.toDateString());
```

Set Interval & Clear Interval:

```
setInterval(function(){
  document.write("farhan");
}, 1000);
```

Set Clear is use for clear the interval but in any condition:

Syntax:

SetClear(setInterval variable name);

Set TimeOut & set clear:

It is running like a set interval but it is run only one time:

Syntax:

```
setTimeout(function(){
 console.log("hello")
},5000)
```

ClearTimeOut:

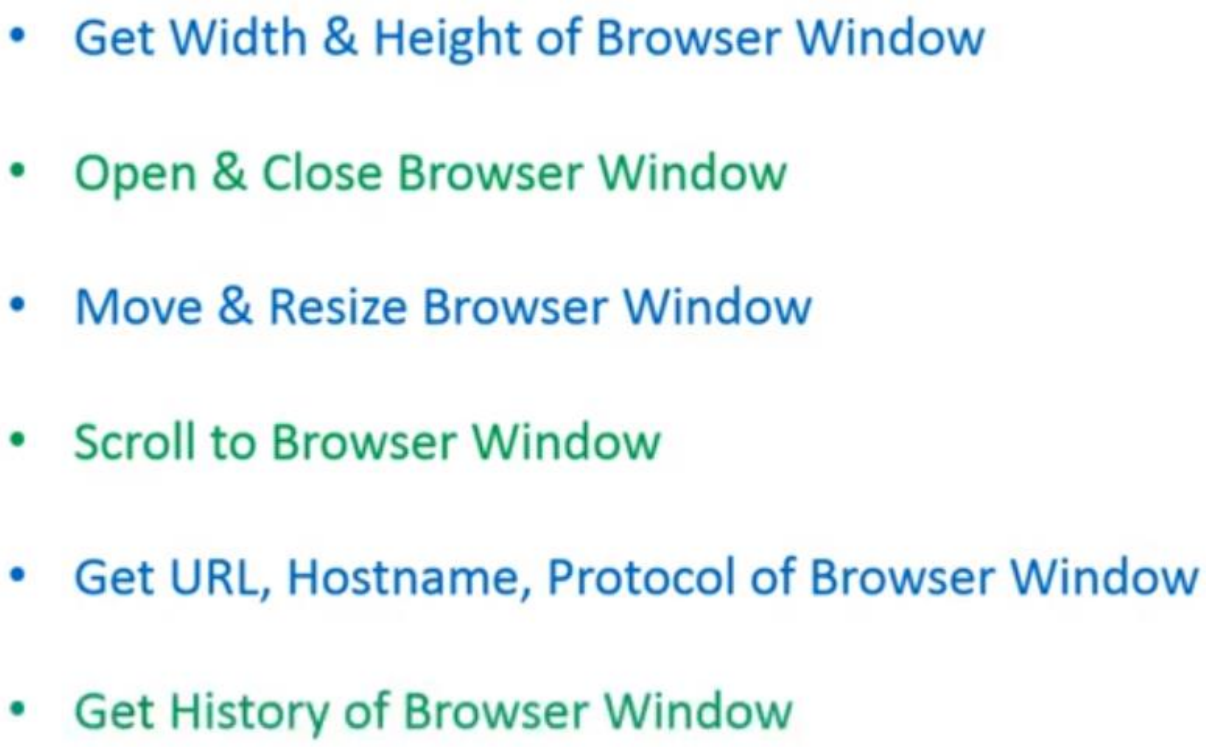
Syntax:

clearTimeOut(setInterval variable name);

Example:

```

var a =  setTimeout(function(){
   console.log("hello")
  },5000)

  function stopanim(){
    clearTimeout(a)

  }
```

BOM (Browser Object Model)



- Get Width & Height of Browser Window
- Open & Close Browser Window
- Move & Resize Browser Window
- Scroll to Browser Window
- Get URL, Hostname, Protocol of Browser Window
- Get History of Browser Window

Window Height & Width:

For Method to Get browser (window) height & width.

- innerHeight
- innerWidth
- outerHeight
- outerWidth

It is also work with events. like onscroll , onresize.

Window Open & Close Method

Open:

Window.open(URL,name,specs)

- URL: website link with protocol.
- Name or Target: give target it is great. _blank , _self etc.
- Spec: Width, height, left, top

Window.close()

Location Object:

Describe location object.

And use in console.log.

- hash
- host
- hostname
- href
- origin
- pathname
- port
- protocol
- search

Location Methods.

Location.reload()

Location.assign("url")

Location.replace("")

Replace like assign but it destroy history.

History Object (length):

History.back

History.forward

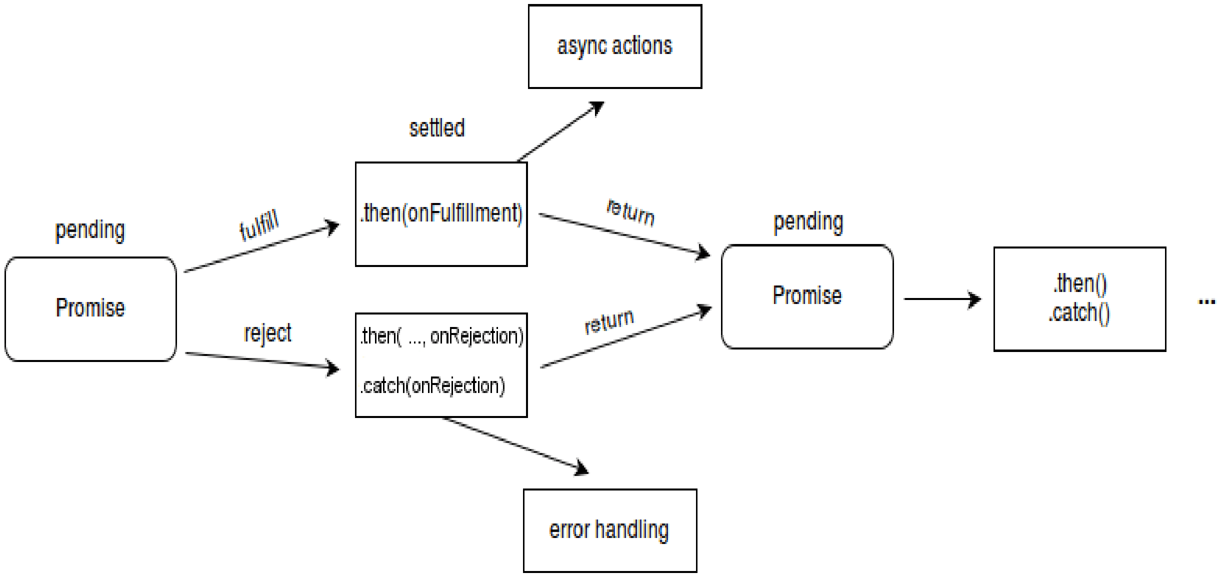
History.go it is use for both like history.go(1) or (-1)

window.scrollY with use on event.

Fetch the API:

What is Promise?

The Promise object **represents the eventual completion (or failure) of an asynchronous operation and its resulting value**.



Fetch in method:

The fetch() method in JavaScript is **used to request to the server and load the information in the webpages**. The request can be of any APIs that returns the data of the format JSON or XML. This method returns a promise. Syntax: fetch(url, options).

```
fetch('https://fakestoreapi.com/products')
            .then(res=>res.json())
            .then(json=>console.log(json))
```

Simple with normal function:

```
fetch("https://jsonplaceholder.typicode.com/users").then(function(res){
        return res.json();
    }
).then(function(resp){
        console.log(resp)
    }
)
```

Another Example:

```
fetch("https://jsonplaceholder.typicode.com/users").then(function(res){
        return res.json();
    }
).then(function(resp){
  console.log(respa)
    for(var i=0;i<resp.length;i++){
        document.write(resp[i].id +") " + resp[i].name + " ---- "+
resp[i].username + "<br>" );
    }
    }
).catch(function(error){console.error("You have a error")})
```