JavaScript

4.1.1 Javascript introduction :

Javascript is a scripting language

It is allow to create a dynamic webpages and content.

It is intract with html css .

Scripting is executed in web browser.

Javascript language is run in web browsers.

Html is content of webpage and css is layout of webpage and then Javascript is define a behavior of web pages.

If we can run javascript code so we need a javascript engine. And javascript engine is used to run code.

4.1.2 use of javascript:

Web applications

Mobile applications

Games

Networking applications

4.1.3 way to include javascript:

Inline script:

Javascript is include in html tag.

Internal script:

We can include javascript in html body in script tag.

External script:

We can use separate file and then include in html body

And add script tag and add file name.

4.1.4 Basic syntax of javascript:

1.comment

2.variable and datatype

3.array

4.function

5.different type of loop

6.condition and operator

Hyphens are not allowed in javascript.

-> comment

1 single line comment

```
// let numberOne = 1;
// let numberTwo = 2;
// let numberThree = 3;
```

2 multi line comment

```
/* let numberOne = 1;
let numberTwo = 2;
let numberThree = 3;*/
```

->variable and datatype

let ,var , const

var :

->it is use in redeclaration.

-> it is a function scoped. not blocked scope

let:

-> it is a blocked scope

->it is not redeclaration

->it is not redefination

const:

->it is not redeclare

->it is blockscope

var a=10;	let a=10;	const a=10;
var a=20;	let a=50;	const a=20;
a=30;	a=20;	a=3;

->Data type:

->number ->boolean ->string ->object ->null

->undefined ->symbol

difference between null and undefined

null:it is in value insert but null.

undefined: it is in not value insert.

->operator and condition

-> arithmetic operator: + - * / ++ – ** %

->assignment operator : += -= *= /=

->logical operator : && || !

->bitwise operator : & | ! ^

-> left shift and right shift : << >>

->ternary operator: () ? () : ()

loose vs strong equality:

loose:it is chack only for value.

strong:it is check value and this datatype.

->loop:

->for loop

->while loop

-> do while loop:

note: do while loop must be execute 1 times.

->function:

it is used to reuse the code .

normal function:

```javascript
// function define
function setMyName(){
    console.log('my name is parth')
}
// funnction call
setMyName()
```

4.1.5 Basic event of Javascript:

event is interaction between user and browser ui.

user click button user press key and user type of input field it's called event.

->many type of event

onchange

```html
<body>

    <label>Choose a language</label>
    <select id="chooseLanguage">
        <option>Javascript</option>
        <option>c++</option>
        <option>java</option>
        <option>python</option>
        <option>c</option>
        <option>ruby</option>
        <option>react</option>
    </select>


    <p id="showLanguage">language is -> </p>
```

```
    <script>


        const chooseLanguage =
document.getElementById('chooseLanguage');

        const displayLanguage =
document.getElementById('showLanguage');


        chooseLanguage.addEventListener('change', function () {

            const language= chooseLanguage.value;

            showLanguage.textContent = "You selected: " + language + "
language";

        });


    </script>
</body>
```

onclick

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width,
initial-scale=1.0">

    <title>Event Example</title>

</head>

<body>


    <button id="btnClick">Click Me!</button>

    <p id="displayMessage"></p>
```

```
    <script>


    const btnForClick = document.getElementById('btnClick');

    const msg = document.getElementById('displayMessage');



    button.addEventListener('click', function() {

    message.textContent = "Button was clicked!";

    alert("clicked button!")
});


    </script>
</body>
</html>
```

onmouseover

onmouseout

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    <style>
        #boxForMouse{
            width: 200px;
```

```html
            height: 200px;

            background-color: aqua;

            border: 1px solid black;

        }

    </style>

    <title>Document</title>

</head>

<body>

    <div id="boxForMouse">

        <p id="messageBox">default </p>

    </div>



    <script>

        let mousebox = document.getElementById("boxForMouse");

        let msgbox  =  document.getElementById("messageBox");



        function  mouseOverEvent(){

            boxForMouse.style.backgroundColor = "blue";

            msgbox.textContent = "your mouse is over the box"

        }

        boxForMouse.addEventListener("mouseover",mouseOverEvent);



        function mouseOutEvent(){

            boxForMouse.style.backgroundColor = "red";

            msgbox.textContent = "your mouse is out of the box";

        }

        boxForMouse.addEventListener("mouseout",mouseOutEvent);

    </script>
```

```
</body>

</html>
```

onkeyboard:

```html
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width,
initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <input type="text" id="txtInput" placeholder="please write
something"/>

    <p id="shownMsg"></p>




    <script>

        let txtInput = document.getElementById("txtInput");

        let msgInput = document.getElementById("shownMsg");



        function keyboardEvent(event){

            const pressKey = event.key;

            shownMsg.textContent ="you press :-> " + pressKey ;
```

```
        }

        txtInput.addEventListener("keydown",keyboardEvent)

    </script>

</body>

</html>
```

4.1.6 basic validation using if else :

```
// basic validation

if(username==""){

    alert("username is required")

}

else if(email==""){

    alert("email is required")

}

else if(password==""){

    alert("password is required")

}
```

```
// basic validation in function

if(isValidNumber(userNumber)){

    console.log("valid number")

}
```

```
else{

    alert("please enter valid number")

}
```