**Exercise 4**

JavaScript advantages

* **Fast speed:** JavaScript is executed on the client side that’s why it is very fast.
* **Easy to learn:** JavaScript is easy to learn. Any one which have basic knowledge of programming can easily leran JavaScript.
* **Versatility:** It refers to lots of skills. It can be used in a wide range of applications.
* **Browser Compatible:** JavaScript supports all modern browsers. It can execute on any browser and produce same result.
* **Server Load:** JavaScript reduce the server load as it executes on the client side.
* **Rich interfaces:** JavaScript provides the drag and drop functionalities which can provides the rich look to the web pages.
* **Popularity:** JavaScript is a very popular web language because it is used every where on the web.
* **Regular Updates:** JavaScript updated annually by ECMA.

JavaScript disadvantages

* **Code Visibility:** JavaScript code is visible to every one and this is the biggest disadvantage of JavaScript.
* **Stop Render:** One error in JavaScript code can stop whole website to render.
* **No Multiple Inheritance:** JavaScript only support single inheritance.

**4.1 The Basic of JavaScript: variables and Objects**,

In HTML, JavaScript code is inserted between <script> and </script> tags.

**JavaScript Variables:**

All JavaScript variables must be identified with unique names.

These unique names are called identifiers.

Identifiers can be short names (like x and y) or more descriptive names (age, sum, total, Volume).

The general rules for constructing names for variables (unique identifiers) are:

* Names can contain letters, digits, underscores, and dollar signs.
* Names must begin with a letter
* Names can also begin with $ and \_
* Names are case sensitive (y and Y are different variables)
* Reserved words (like JavaScript keywords) cannot be used as names

Ways to Declare a JavaScript Variable:

* Using var
* Using let
* Using const

**PROGRAM:**

<html>

<body>

<h1>javascript variables</h1>

<p>x,y,z are variables</p>

<p id="demo"></p>

<p id="demo1"></p>

<p id="demo2"></p>

<p id="demo3"></p>

<script>

const PI=3.1415926;

{

const PI=3;

document.getElementById("demo").innerHTML=PI;

}

let x=2;

var y=5;

document.getElementById("demo1").innerHTML=PI;

document.getElementById("demo2").innerHTML=x;

document.getElementById("demo3").innerHTML=y;

</script>

</body>

</html>

**Output:**

**javascript variables**

x,y,z are variables

3

3.1415926

2

5

**JavaScript Objects**

In real life, a car is an object.

A car has properties like weight and color, and methods like start and stop:

All cars have the same properties, but the property values differ from car to car.

All cars have the same methods, but the methods are performed at different times.

**PROGRAM:**

<!DOCTYPE html>

<html>

<body>

<h2>JavaScript Objects</h2>

<p id="demo"></p>

<script>

// Create an object:

const person = {

firstName: "John",

lastName: "Doe",

age: 50,

eyeColor: "blue"

};

// Display some data from the object:

document.getElementById("demo").innerHTML =

person.firstName + " is " + person.age + " years old.";

</script>

</body>

</html>

**Output:**

**JavaScript Objects**

John is 50 years old.

**PROGRAM:**

<html>

<body>

<h2>objects</h2>

<p id="demo"></p>

<script>

const person={fname:"john",lname:"doe",age:50,

fullname: function(){return this.fname+" "+this.lname;}};

document.getElementById("demo").innerHTML=person.fullname();

</script>

</body>

</html>

**OUTPUT:**

**objects**

john doe

**4.2 Primitives Operations and Expressions**

|  |  |  |
| --- | --- | --- |
| **Operator** | **Example** | **Same As** |
| = | x = y | x = y |
| += | x += y | x = x + y |
| -= | x -= y | x = x - y |
| \*= | x \*= y | x = x \* y |
| /= | x /= y | x = x / y |
| %= | x %= y | x = x % y |
| \*\*= | x \*\*= y | x = x \*\* y |

**PROGRAM:**

<html>

<body>

<p>operators</p>

<p id="demo"></p>

<p id="demo1"></p>

<p id="demo2"></p>

<p id="demo3"></p>

<p id="demo4"></p>

<script>

let a=20;

let b=4;

let c=5.5;

let d=a+b;

let e=a|b;

let f=a-b+c;

let g=a&b;

let h=(100+50)\*a/(2\*c);

document.getElementById("demo").innerHTML=d;

document.getElementById("demo1").innerHTML=e;

document.getElementById("demo2").innerHTML=f;

document.getElementById("demo3").innerHTML=g;

document.getElementById("demo4").innerHTML=h;

</script>

</body>

</html>

**Output:**

operators

24

20

21.5

4

272.72727272727275