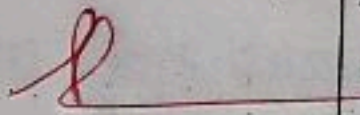


Assignment no :- 03

Topics covered :-

- Javascript
- feature of Javascript
- Javascript app
- Javascript Scripting
- JSO Data type

Date of performance :- 18-08-22

Evaluation Criteria	Marks (out of 3)	Date	Signature of Instructor
Punctuality	03	24/8/2022 24-08-22	
Problem solving technique	03		
Attainment level (out of 3)	03		

Assignment No-03

Q1) What is Javascript write a Basic code to represent Javascript programming?

• JAVASCRIPT (JS) :-

- Javascript is a light-weight object oriented programming language which is used by several website for scripting the webpage.

- it is an interpreted full-fledged programming language that enable dynamic interactivity on website when applied to HTML document.

• With Javascript, user can build modern web application to interact directly without reloading the page even time.

- Using Javascripting we can simplify the database such as CouchDB, MongoDB, etc.

• feature :-

① All popular web browser support Javascript as they provide built-in execution environment.

② Javascript follow the syntax and structure of C programming language.

③ Javascripting Supportable in several operating system including, windows, MacOS, etc.

④ it is case-sensitive language.

⑤ it is provides good control to the user over the web browser.

- it is lightweight and interpreted language.

• Application of Javascript

- Javascript is used to create interactive website. It is mainly used for.

- Client side validation

- Dynamic drop-down menu

- Displaying Date & Time

- Displaying pop-up windows and dialog boxes

- Displaying clock, etc.

• Javascript Example!

<HTML>

<Body>

<h2>This is Javascript program </h2>

<script>

document.write("welcome to Javascript");

</script>

</body>

</HTML>

Output

This is Javascript program

welcome to Javascript.

Q.2) Explain the features of JavaScript

JavaScript is one of the most popular languages which include numerous features when it comes to web development.

Some of the features of JavaScript are as follows:-

① Light weight scripting language :-

JavaScript is a light weight scripting language because it is made for data handling at the browser only.

② Dynamic typing :-

JavaScript supports dynamic typing which means the type of the variable is defined based on the stored value.

③ Object-oriented programming support :-

JavaScript has two important principles with OOP in JavaScript are object creating patterns (Encapsulation) and code re-use pattern (Inheritance).

④ Platform Independent

This implies that JavaScript is platform-independent or we can say it is portable, which simply means that the script can be run in any place and any time.

⑤ Prototype-Based Language :-

Javascript is a prototype-based scripting language. This means Javascript uses prototypes like java, we create a class and then we create object for them. Classes

⑥ Interpreter Language :-

Javascript is an interpreter language which means the script written inside Javascript is processed line by line. These scripts are interpreted by Javascript interpreter which is a built-in component of the web browser.

Q.3) Describe a application of Javascript.

Javascript use to various application such as following are important application.

1) Web Development :-

Javascript is scripting language used to develop web page.

Developed in Netscape, JS allows developers to create a dynamic & interactive web page to interact with visitor and execute complex action.

2) Web Application :-

Various Javascript frameworks are used for developing and building ^{strong} web applications. In an application like Google Maps, if user want to explore a map, all they have to do is click and drag the mouse to get a detailed view.

3) Game :

Javascript is also used for creating games. It has various libraries and framework for creating a game. A game can either be 2D or 3D. Some javascript game engines such as PhaserJS, PixiJS help to create a web game.

4) Presentations :- JAVAScript is also helps us to create presentation on website. The libraries, such as RevealJS, and BespokeJS, can be used to create a web-based slide deck.

5) Server application :- A large number of web application have a server-side to them. JAVAScript is used to generate content and handle HTTP requests. JAVAScript can also run on server through Node.JS.

6) MOBILE APPLICATION :- JAVAScript, we can build an application for non-web context. The features and uses of JAVAScript make it a powerful tool for creating mobile applications. The React Native is widely used JAVAScript framework for creating mobile application.

Q4 write a difference between client side scripting and server side scripting.

	Client side scripting	Server side scripting
<u>Primary funⁿ</u>	The primary function of client-side scripting is to provide the requested output to the end-user.	The primary function of server-side scripting is to manipulate and give access to the required database as per request.
<u>Uses</u>	The client-side is used as the front end, where the user gets to see what we have browsed.	The server-side is used as a back-end where data is processed and is not visible to the client user.
<u>languages</u>	HTML, Javascript, CSS are used to display the request.	PHP, Python, Ruby, Node JS are some of the programming lang. used at server-side.
<u>Running</u>	It runs on the end-user system.	It runs on the ^{web} server.
<u>connectivity</u>	The client-side does not connect to the database at the web server.	The server-side helps connect with the database, which is already stored in the server database.
<u>security</u>	Less secure.	Secure.
<u>depend</u>	Client-side scripting depends upon the user's browser version.	Server-side does not depend upon the client.

Q.5) Describe a advantage and disadvantages of Javascript

Advantages :-

- ① Speed :- Client-side Javascript is very fast because it can run immediately within the client-side browser.
- ② Simplicity :- Javascript is relatively simple to learn and implement.
- ③ Popularity :- Javascript is used everywhere on the web.
- ④ Rich interfaces :- Javascript provides various interface to developers for creating memorable webpage.
- ⑤ Server Load :- Being client-side reduces the demand on the website server.

Disadvantages

- ① Client-side Security :- The code executes on the user's computer, in some cases it can be used for malicious purposes.
- ② Browser support :- Javascript is sometimes interpreted differently by different browsers, this makes it somewhat difficult to write cross-browser code.
- ③ Single Inheritance :- Javascript only supports single inheritance and not multiple inheritance. Some programs may require this OOP characteristic.
- ④ Rendering stopped :- A single code error can stop the rendering of the entire Javascript code on the website.

Q.5) Explain programming fundamant of java scripting

- ① Variable
- ② Data type (primitive & non-primitive)
- ③ Operator (All type of operators)

• Javascript variable

A Javascript variable is simply a name or storage location.

• There are two type of variable in Javascript following :-

- local variable
- global variable

• There are some rule while declaring a javascript variable

- Name must start with a letter (a to z or A to Z), Underscore (_) or dollar (\$) sign.

- After first letter we can use digit (0 to 9) for ex. value 1

- Javascript variable are case sensitive, for example x and X are different variable.

EX <html>

<body>

<script>

Var x = 10;

Var y = 20;

Var z = x + y;

document.write (z);

</script>

</body>

</html>

Output = 30

2) Data type :-

Javascript provided different data types to hold different type of value. There are two type of data type in javascript

- 1) primitive data type
- 2) Non-primitive data type.

• Javascript primitive data type :-

There are five types of primitive data type in javascript as follows:

Data type	Description
String	represent sequence of character Eg. "Hello"
Number	represent numeric value e.g. 100
Boolean	represent boolean value either true or false
undefined	represent undefined value
NULL	represent null. i.e. No value at all

• Javascript Non-primitive data type

The Non-primitive data type are as follow:

Data type	Description
Object	represent instance through which can access member
Array	represent group of similar values
RegExp	represent Regular Expression.

>>

Bitwise Right shift with
zero with zero

$(10 >> 2) = 2$

JavaScript Logical operators :-

The following operators are known as JavaScript logical operators

Operator

Description

Example

$\&\&$

Logical AND

$(10 == 20) \&\& 20 == 33$
= false

$\|\|$

Logical OR

$(10 == 20) \|\| 20 == 33$
= true

!

Logical Not

$!(10 == 20)$ true

JavaScript Assignment operators :-

The following operators are known as JavaScript assignment operators.

Operator

Description

Example

=

Assign

$10 + 10 = 20$

+=

Add and assign

Var a = 10;

Var a += 20;

Now a = 30

Operator	Description	Example
<code>- =</code>	Add and Subtract and assign	Var a = 20; a - = 10 Now a = 10
<code>* =</code>	Multiply and assign	Var a = 10; a * 20; Now a = 200.
<code>/ =</code>	Divide and assign	Var a = 10; a / 2 = 2; Now a = 5

• Javascript Special Operators

The following operators are known as Javascript special operators

Operator	Description
<code>(? :)</code>	Conditional Operator return value based on the condition. it is like if else
<code>,</code>	Comma Operator allows multiple expression to be evaluated as single statement
<code>delete</code>	Delete operator delete a property from the object
<code>in</code>	In Operator check if object has the given property
<code>new</code>	Create an instance (object)
<code>void</code>	it discards the expression's return value.

3. • Javascript Operators :-

Operators are used to perform operation on variables and values.

• There are following type of operators in Javascript.

- Arithmetic operator
- Comparison (Rel) operator
- Bitwise operator
- Logical operator
- Assignment operator
- Special operator

• Javascript Arithmetic operators :-

"Arithmetic Operators are used to perform arithmetic operations on the operands."

• The following operators are known as Javascript arithmetic operators.

Operator	Description	Example
+	Addition	$10 + 20 = 30$
-	Subtraction	$20 - 10 = 10$
*	Multiplication	$10 * 20 = 200$
/	Division	$20 / 10 = 2$
%	Modulus	$20 \% 10 = 0$
++	Increment	var a = 10; a++; Now a = 11
--	Decrement	var a = 10; a--; Now a = 9

• Javascript comparison operators :

Javascript comparison operators take two operands.

Operator	Description	Example
<code>==</code>	is equal to	<code>10 == 20 = false</code>
<code>===</code>	identical	<code>10 === 20 = false</code>
<code>!=</code>	Not equal to	<code>10 != 20 = true</code>
<code>!==</code>	Not identical	<code>20 !== 20 = false</code>
<code>></code>	Greater than	<code>20 > 10 = true</code>
<code>>=</code>	Greater than or equal to	<code>20 >= 10 = true</code>
<code><</code>	Less than	<code>20 < 10 = false</code>
<code><=</code>	Less than or equal to	<code>20 <= 10 = false</code>

• Javascript Bitwise Operators :-

The Bitwise operators perform bitwise operations on operands. The Bitwise operators are as follows:

Operator	Description	Example
<code>&</code>	Bitwise AND	<code>(10 == 20) & (20 == 22) = false</code>
<code> </code>	Bitwise OR	<code>(10 == 20) (20 == 33) = false</code>
<code>^</code>	Bitwise XOR	<code>(10 == 20) ^ (20 == 33) = false</code>
<code>~</code>	Bitwise NOT	<code>(~10) = -11</code>
<code><<</code>	Bitwise left shift	<code>(10 << 2) = 40</code>

Q.7) Explain control Structure in javascript

• Javascript provide 3 type of selection structures.

1) Javascript if statement :- It evaluates to content only if expression is true.

```
if (expression) {
    // content to be evaluated
}
```

2) if... else :- It evaluates to content whether condition true or false.

```
if (expression) {
    // content
} else {
    // content
}
```

3) if... else if :- It evaluates to content only if expression is true

from several expression

```
if (expression 1) {
    // content
}
else if (expression 2) {
    // content
}
else if (expression 3) {
    // content
}
else {
    // content
}
```

~~21/08/2022~~