Javascript Introduction

Module 8) JavaScript

Theory assignment

.Qustion1What is JavaScript? Explain the role of JavaScript in web development.

Ans javaScript is a programming language that adds interactivity and dynamic content to web pages programming

Language that allow you to implement complex feaucher on web page

• Question 2: How is JavaScript different from other programming languages like Python orJava?

Ans is used for web development, Python is versatile for general-purpose programming and data science, and Java is ideal for enterprise applications and large-scale systems.

Q3 • Question 3: What is the difference between undefined and null in JavaScript?

Ans In JavaScript, **undefiend** means a variable has been declared but not assigned a value, while **null** represents an intentional absence of any object value.

Q4Question 1: What are the different types of operators in JavaScript? Explain with examples.

Arithmetic operators

ANS of arithmetic

+ (Addition): 5 + 3 = 8

Assignment operators

X +=3; (x=x+3)

Comparison operator

Equal to (5 == 5 => true )

Logical operators

Logical AND ( true && flase => false)

Q5 • : What is the difference between == and === in JavaScript?

Ther are difference between (loose Equality)

Compare value after conversion

Example 10==10 is true this is converting the string

10 to a number

===(sttric equality ) compare both value and type without type conservation

Example 6=== “6” is false because one is a number and the other is a string

Q6 Question 1: What is control flow in JavaScript? Explain how if-else statements work withan example.

Anin JavaScript refers to the order in which the statements or instructions are executed in a program. It determines how the program moves from one statement to another based on certain conditions or loops. Control flow structures in JavaScript include conditional

Example

let age = 18;

if (age >= 18) {

console.log("You are an adult.");

} else {

console.log("You are a minor.");

}

Question 7: Describe how switch statements work in JavaScript. When should you use a switch statement instead of if-else?

Answer 7: A switch statement is used to perform different action based on different action condition

Example

if (day === 1) { dayName = "Monday"; } else if (day === 2) { dayName = "Tuesday"; } else if (day === 3) { dayName = "Wednesday"; } else { dayName = "Invalid day"; }

Q8• Question 1: Explain the different types of loops in JavaScript (for, while, do-while). Provide abasic example of each

Ans = loop Used when the number of iterations is known, with initialization, condition, and increment in one line.

Example of loop

for (let i = 0; i < 5; i++) { console.log(i);

2 while loop

While loop Runs as long as the condition is true, checking the condition before each iteration

==================

Example

let i = 0; while (i < 5) { console.log(i);

do while loop

Runs at least once, checking the condition after each iteration.

Example

let i = 0;

do {

console.log(i);

i++;

} while (i < 5);

• Question 9: What are functions in JavaScript? Explain the syntax for declaring and calling a function.

Ans defunction claring functionName(parameters) { ... }

Calling function functionName(arguments);

Example

function add(a, b) { return a + b; } let result = add(3, 4); console.log(result);

Question 10: What is an array in JavaScript? How do you declare and initialize an array?

Ans

An **array**  in JavaScript is a collection of multiple values stored in a single variable. You can declare and initialize an array in two ways:

Example

let fruits = ["lenovo", "I phone", "dell"];

Question 11: Explain the methods push(), pop(), shift(), and unshift() used in arrays.

Ans

Push () adds elements to the end and array

Pop()remove and return the last element from an array

Shift() remove and return the fist element from the array

Unshift ()add element to the beginning of an array

Example

add.push("name ");

pop

let last = .pop();

shift

let first = fruits.shift();

unshift()

fruits.unshift("cargo");

12: What is an object in JavaScript? How are objects different from arrays?

Ans

Object a collection of key value paris used reprent to complex entities

Array is a collection of order element index by number

Example

Of object let person = { name: "John", age: 30, city: "New York" };

Of array

let fruits = ["hp", "dell", "mack book"];

Question 13: Explain how to access and update object properties using dot notation and bracket notation.

Ans

ACCESSC USE OF object name followed by a dot (.)and the property name

Example

let person = { name: "John", age: 30 };

Accessing

console.log(person.name);

// Updating

person.age = 31;

console.log(person.age);

Question 14: What are JavaScript events? Explain the role of event listeners. •

Ans **Event Listeners** are functions that "listen" for specific events on an element. When that event occurs, the event listener triggers the associated code. They allow dynamic interaction with elements, like showing alerts or changing content.

Example

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

alert("Button clicked!");

});

Question 14: How does the addEventListener() method work in JavaScript? Provide an

Ans

The addEventListener() method in JavaScript is used to attach an event listener to a specified element, allowing you to execute a function when a particular event occurs.

Example

const button = document.getElementById("myButton");

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

alert("Button clicked!");

});

Question 15: What is the DOM (Document Object Model) in JavaScript? How does JavaScript interact with the DOM?

ANS avaScript interacts with the DOM by using methods and properties to access HTML elements, change their content, modify attributes, and respond to user interactions. Common DOM methods include:

* getElementById() - Selects an element by its ID.
* querySelector() - Selects an element using CSS selectors.
* innerHTML - Gets or sets the content of an element.
* addEventListener() - Attaches event handlers to elements.

Example

const heading = document.getElementById("myHeading");

heading.innerHTML = "New Heading Text

Question 16: Explain the methods getElementById(), getElementsByClassName(),and querySelector() used to select elements from the DOM

Ans Selects an element by its unique id.

Returns a single element.

Selects an element by its unique id.

Returns a single element.

Selects the first element that matches a CSS selector.

Returns a single element.

• Question 17: Provide an example of how to use setTimeout() to delay an action by 2

Ans

You can use setTimeout() to delay an action by specifying a function and the delay in milliseconds (1000 ms = 1 second).

Exmpale

setTimeout(function() {

alert("This message appears after 2 seconds!");

}, 2000);

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