

JAVA SCRIPT

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Introduction to JavaScript

JavaScript is a versatile **scripting** language that enables dynamic content on websites. It is primarily used for client-side scripting, enhancing the interactivity of web pages



Question 1

Write a simple JavaScript script that displays an alert with the message "Hello, JavaScript!" when the webpage loads
(Hint: use alert)



Solution 1

```
<!DOCTYPE html>
<html>
  <head>
    <title>JavaScript Introduction</title>
    <script>
      alert("Hello, JavaScript!");
    </script>
  </head>
  <body>
    <!-- Content goes here -->
  </body>
</html>
```



Variables, Data Types, Conditional Statements, Loops

JavaScript allows the declaration of variables, supports various data types (string, number, boolean), and includes conditional statements (if, else) and loops (for, while) for control flow



Question 2

Write a script that declares a variable, assigns it a number, and uses a conditional statement to check if it's greater than 10. If true, display an alert with a positive message; otherwise, display a negative message



```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript Variables and Conditionals</title>
  <script>
    var myNumber = 15;

    if (myNumber > 10) {
      alert("Number is greater than 10!");
    } else {
      alert("Number is not greater than 10.");
    }
  </script>
</head>
<body>
  <!-- Content goes here -->
</body>
</html>
```

Solution 2



Function: User Defined, Library

- Functions are **reusable** blocks of code.
- JavaScript supports user-defined functions and includes built-in functions from libraries, such as those for manipulating strings or performing mathematical operations.

Question 3

Write a user-defined function that takes two parameters (numbers) and returns their sum. Call the function with sample values and display the result

Solution 3

```
<!DOCTYPE html>
<html>
  <head>
    <title>JavaScript Functions</title>
    <script>
      function addNumbers(a, b) {
        return a + b;
      }

      var result = addNumbers(5, 8);
      alert("Sum: " + result);
    </script>
  </head>
  <body>
    <!-- Content goes here -->
  </body>
</html>
```

Events

JavaScript enables the handling of events (user interactions) on a webpage, such as clicks, keypresses, or form submissions



Question 4

Create a button, and use
JavaScript to alert a message
when the button is clicked



```
<!DOCTYPE html>
<html>
<head>
<title>JavaScript Events</title>
<script>
function showMessage() {
    alert("Button clicked!");
}
</script>
</head>
<body>
<button onclick="showMessage()">Click me</button>
</body>
</html>
```

Solution 4



Arrays and Objects

JavaScript supports arrays (ordered lists) and objects (unordered collections with key-value pairs) for storing and manipulating data

Question 5

Create an array of three colors and an object representing a person with properties for name and age.
Display the second color and the person's name.

Solution 5

```
<!DOCTYPE html>
<html>
  <head>
    <title>JavaScript Arrays and Objects</title>
    <script>
      var colors = ["red", "green", "blue"];
      var person = { name: "John", age: 25 };

      alert("Second color: " + colors[1]);
      alert("Person's name: " + person.name);
    </script>
  </head>
  <body>
    <!-- Content goes here -->
  </body>
</html>
```

DOM and DOM Manipulation

The Document Object Model (DOM) represents the structure of an HTML document, and JavaScript can be used to manipulate it dynamically

Question 6

Create a button that, when clicked, changes the text content of a paragraph on the webpage

```
<!DOCTYPE html>
<html>
<head>
<title>JavaScript DOM Manipulation</title>
<script>
function changeText() {
  document.getElementById("demo").innerHTML = "Text changed!";
}
</script>
</head>
<body>
<p id="demo">Original text</p>
<button onclick="changeText()">Change Text</button>
</body>
</html>
```

Solution 6

BOM

The Browser Object Model (BOM) provides objects and methods for interacting with the browser, such as managing the browser window or handling navigation.

Question 7

Write a script that opens a new browser window with a specific URL when the webpage loads

Solution 7

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript BOM</title>
  <script>
    window.onload = function () {
      window.open("https://www.example.com", "_blank");
    };
  </script>
</head>
<body>
  <!-- Content goes here -->
</body>
</html>
```



JSON

JSON (JavaScript Object Notation) is a lightweight data interchange format. JavaScript can parse JSON data for easy storage and exchange of information.



Question 8

Create a JSON object representing a person with properties for name and age. Parse the JSON and display the person's name.



Solution 8

```
<!DOCTYPE html>
<html>
<head>
<title>JavaScript JSON</title>
<script>
var jsonText = '{"name": "Alice", "age": 30}';
var person = JSON.parse(jsonText);

alert("Person's name: " + person.name);
</script>
</head>
<body>
<!-- Content goes here -->
</body>
</html>
```