

1. JavaScript Introduction

Q1. What is JavaScript? Explain the role of JavaScript in web development.

JavaScript is a high-level, interpreted programming language used to make web pages interactive and dynamic. It runs directly in the browser and allows developers to add features like animations, pop-ups, and form validation.

In web development, JavaScript plays a key role in enhancing user experience by enabling real-time updates, controlling multimedia, and connecting the front-end with back-end services. It works together with HTML (structure) and CSS (style) to build complete web applications.

Q2. How is JavaScript different from other programming languages like Python or Java?

JavaScript is mainly used for client-side web development, while Python and Java are often used for server-side or application-level programming.

- **Execution:** JavaScript runs in web browsers, while Python and Java need separate environments.
- **Syntax:** JavaScript syntax is simpler and loosely typed, while Java and Python are more structured.
- **Usage:** JavaScript handles front-end tasks like user interaction, while Java and Python are used for backend processing and complex computation.

Q3. Discuss the use of <script> tag in HTML. How can you link an external JavaScript file to an HTML document?

The <script> tag in HTML is used to insert or link JavaScript code into a webpage.

To write JavaScript directly inside HTML, you can use:

Example :

```
<script>  
alert("Hello from JavaScript!");  
</script>
```

To link an external JavaScript file, you can use the **src** attribute:

Example:

```
<script src="script.js"></script>
```

This method keeps the code organized and reusable.