

## Theory Assignment.

### ***Question 1: What is JavaScript? Explain the role of JavaScript in web development.***

**Answer: What is JavaScript?** JavaScript is a programming language used to make websites interactive. It runs in the web browser and can change content, style, and behavior without reloading the page.

#### **Role of JavaScript in Web Development:**

1. **Interactivity:** JavaScript adds interactive features like buttons, sliders, and pop-ups to websites.
2. **DOM Manipulation:** It allows changing webpage content (HTML) and style (CSS) dynamically without refreshing.
3. **Asynchronous Requests:** JavaScript loads data in the background, updating content without a page reload.
4. **Single Page Applications:** It enables apps to run smoothly by updating only parts of the page, like Gmail or Facebook.

### ***Question 2: How is JavaScript different from other programming languages like python or Java?***

**Answer:** JavaScript is mainly used for web development to make websites interactive and dynamic, running in browsers. It's dynamically typed, meaning variable types can change during execution.

Python is a general-purpose language with simple syntax, used for web development, data science, and automation, and is also dynamically typed.

Java is a statically typed language, requiring explicit type declarations, and is used for large-scale applications, backend systems, and Android development.

### ***Question 3: Discuss the use of <script> tag in HTML. How can you link an external JavaScript file to an HTML document?***

**Answer:** The `<script>` tag in HTML is used to include JavaScript code in a webpage. You can write JavaScript directly inside the `<script>` tag or link to an external JavaScript file.

To link an external JavaScript file, use the `src` attribute like this:

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

This includes the `script.js` file in the HTML document. The `<script>` tag can be placed in the `<head>` or just before the closing `</body>` tag.