What Is Asynchronous?

In JavaScript

Why Asynchronous ?

Asynchronous code improves program **responsiveness** and **efficiency** by **preventing blocking**.

It enables JavaScript programs to **handle complex operations** without halting the execution, resulting in more efficient **utilization** of system resources.

JS Asynchronous

In JS, asynchronous refers to the ability to **perform tasks independently** from the main program flow.

It allows code to initiate operations and continue running other tasks **without waiting** for them to finish.

Asynchronous **operations** include

- Fetching data from servers,
- Reading/writing files, and
- making API calls.

JS Async Mechanisms

To handle asynchronous operations effectively JavaScript provides **mechanisms** like

✅ **Callbacks :** are functions executed after an asynchronous operation completes.

✅ **Promises :** represent future values and allow chaining multiple asynchronous operations.

✅ **Async/await :** provides a more concise and synchronous-like way to write asynchronous code.

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