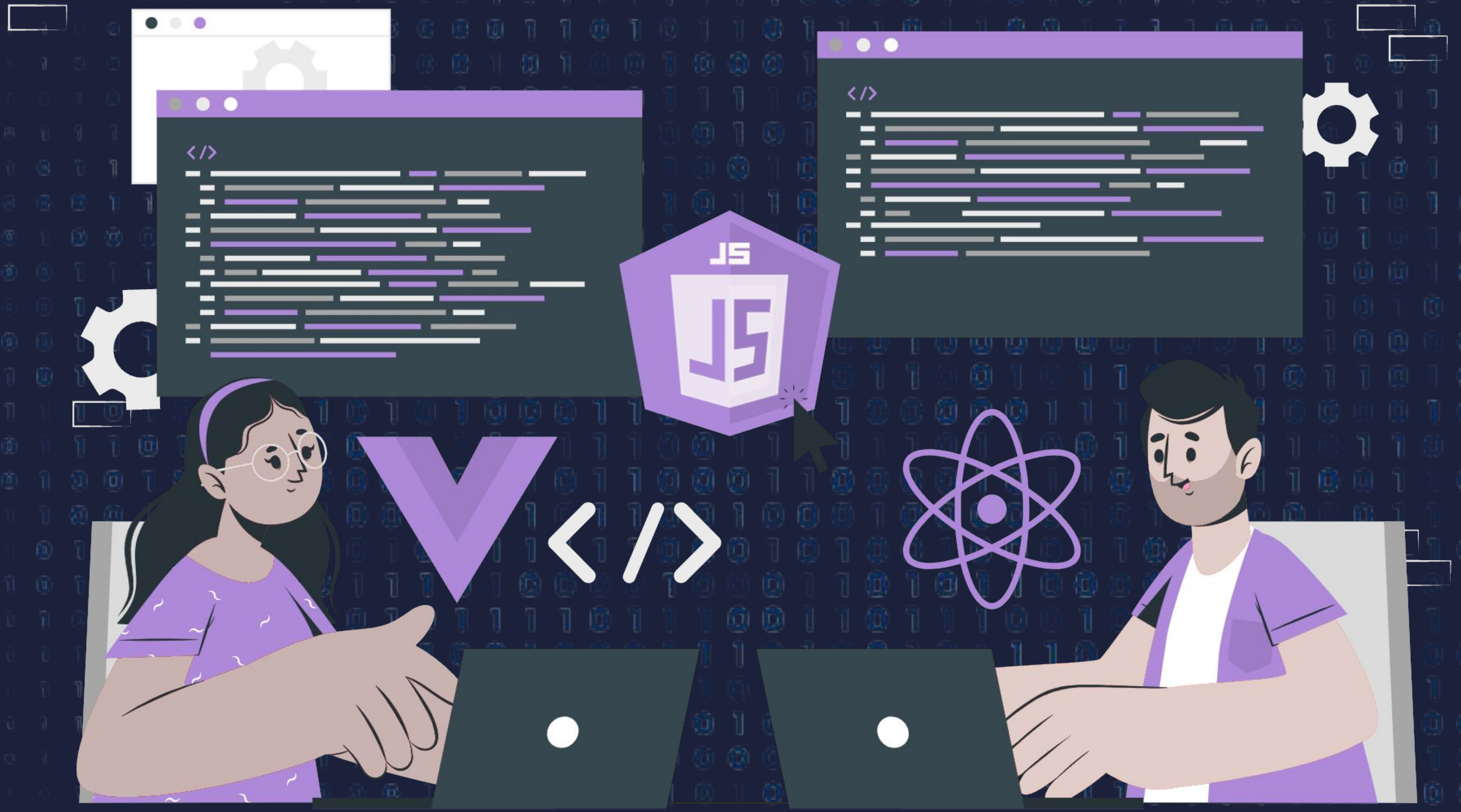
PW SKILLS

Async and Await



Lecture CheckList

1. Introduction.
2. What is the need for async-await?
3. Async keyword.
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5. Implementation.

Introduction

We all know that handling asynchronous tasks without blocking the main thread is very important. However, writing and understanding asynchronous code can be difficult. Async and await is a syntax provided to make asynchronous code more readable and in a way that looks and behaves more like synchronous code.

With async/await, we can mark a function as asynchronous using the "async" keyword, and use the "await" keyword to wait for the completion of asynchronous tasks. This makes it easier to read and write asynchronous code, as well as handle errors more effectively.

Let’s look at the async/await in depth in this lecture.

What is the need for async-await?

From the previous lecture, we know that writing asynchronous code using callbacks or promises can be complex, hard to read, and error-prone, particularly when dealing with complex tasks that involve multiple asynchronous operations. Additionally, nested callbacks or chained promises can lead to what's known as "callback hell" which can be difficult to debug and maintain.

Async/await simplifies asynchronous programming by allowing us to write asynchronous code that looks and behaves more like synchronous code. It makes asynchronous code easier to read, write, and maintain, while also reducing the potential for errors and making it easier to handle exceptions and errors.

So, it is very important to understand how to use async-await to write more easy asynchronous code.

Async

The Async keyword is used to mark a function as asynchronous. An asynchronous function is a function that returns a promise, which represents the eventual completion of the operation performed by the function.

Understanding the async keyword is easier linking to the day-to-day tasks we do such as laundry. Imagine you need to do laundry. You can start the washing machine and then do other things while the machine is running. The washing machine is performing a task asynchronously in the background, while you are free to do other tasks.

This is exactly how asynchronous tasks are done in javascript as well. The work of async is to make a function work without the need of freezing the complete program.

Await

The "await" keyword is used to wait for the completion of an asynchronous operation inside an asynchronous function. It can only be used inside an asynchronous function that is marked with the "async" keyword.

When we use the "await" keyword, the function execution is paused until the Promise returned by the asynchronous operation is resolved or rejected. The resolved value of the Promise is then returned, allowing us to continue executing the function with the resolved value.

Implementation

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THANK YOU