

=====ShortAnswer=====

What is the disadvantage of Synchronous:

- Load time can be slow. No built in callback methods. When a thread is locked other get blocked as well. Inability to execute multiple operations at a time might reduce user experience.

What is asynchronous

- Asynchronous code allows the program to be executed immediately.
- Use asynchronous callbacks to make our code non-blocking.

What is Single-Threaded How does singlethreaded JavaScript achieve asynchronous

- We can use the Web APIs call that were sent to the Web API container such as event listeners, timer, fetch, etc to achieve asynchronous in java script.

What is event loop do

- Monitor the Call Stack and the Callback Queue. If the Call Stack is empty, the Event Loop will take the first event from the queue and will push it to the Call Stack, which effectively runs it.

What is callback queue

- A queue callback is a flow option presented to a caller waiting in a queue.

What is callback hell:

- Each and every callback takes an argument that is a result of the previous callbacks. In this manner, The code structure looks like a pyramid, making it difficult to read and maintain. Also, if there is an error in one function, then all other functions get affected

What is event loop

- Every synchronouse operation will be push to the call stack.
- Every asyn operation will be push to the callback queue.
- Event loop will wait for all sync function to be pop of be fore pusing the asyn operation to the call stack.

Web API container

- Web APIs call that were sent to the Web API container like event listerner, timer, fetch will sit there until an action triggered.
- Once an action is triggred, the callback function is sent to the callback queue.

What is AJAX

- A set of web development techniques that uses various web technologies on the client-side to create asynchronous web applications.

What is promise

- Represents the eventual completion of an asynchronous operation and its resulting value.

What are 3 states of Promise

- Promise has three states, first it will be unfulfilled, then the state will change based on if the promise will be resolved or rejected.

What is the difference between fetch and xhr

- Fetch API uses Promises, which enables a simpler and cleaner API, avoiding callback hell and having to remember the complex API of XMLHttpRequest.

What is async and await

- async return a promise
- await wait for a promise to be resolved.

What is microtask queue

- Similar to the Callback Queue, a separate queue for storing asynchronous promise, but microtask queue has higher priority to the Callback Queue

What is the advantage of Promise

- easy to manage with multiple asynchronous operations, improve code readability, better flow of control definition, better error handling.