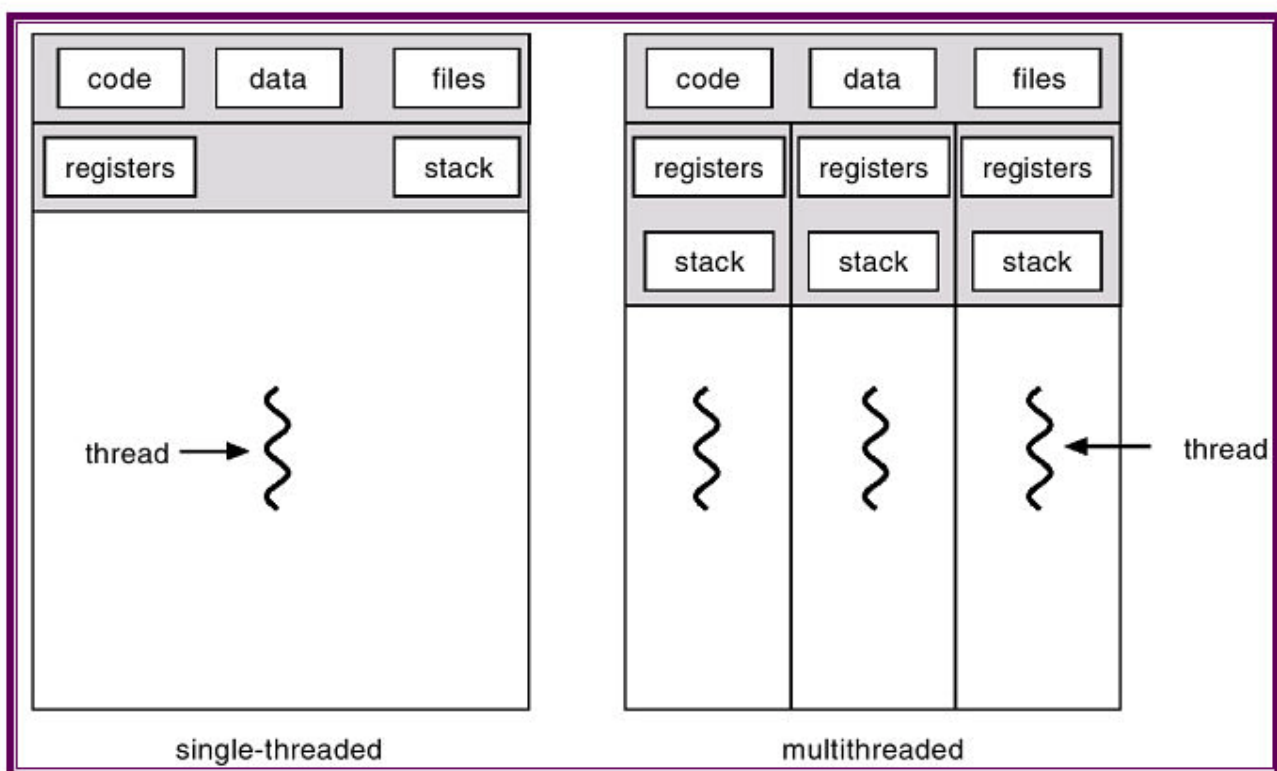# Tổng quan về lập trình bất đồng bộ

1. Giới thiệu về lập trình bất đồng bộ
2. setTimeout
3. debounce
4. setTimeout with `this`
5. setInterval
6. throttle
7. Event Loop
8. AJAX - Using XMLHttpRequest
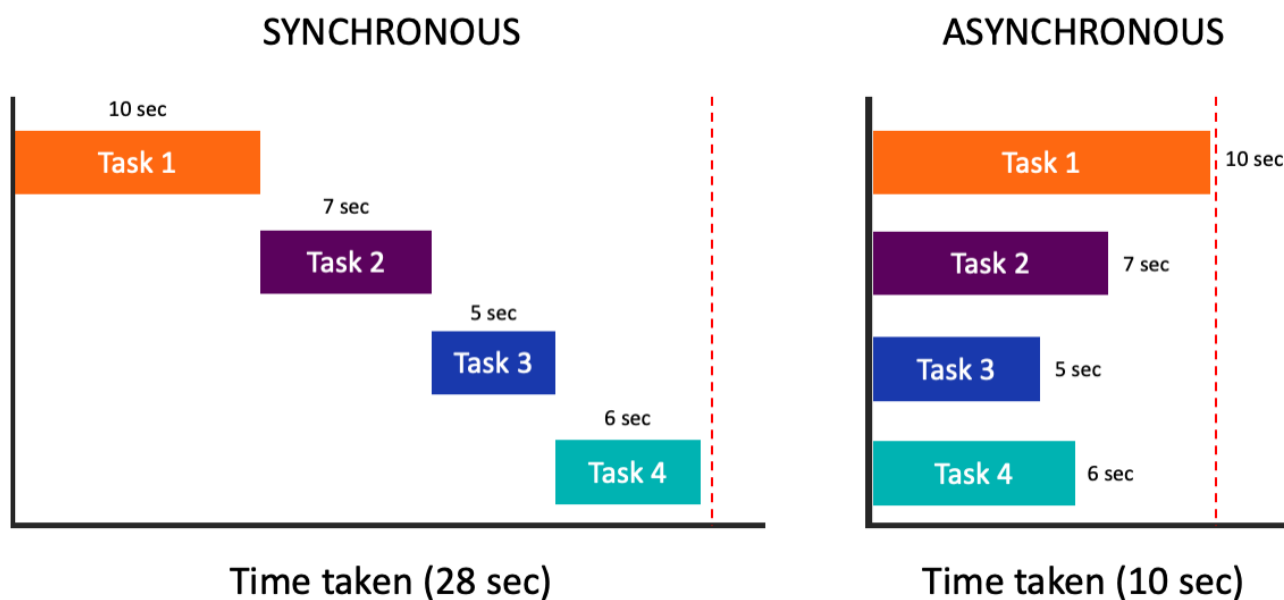9. Promise, Async/await
10. And more

Single thread vs multi thread

Source: https://dev.to/hrishi2710/threading-in-operating-system-3gjb

	Single Thread	Multi Thread
How many task performed at a time	One	Many
Resource sharing	No	Yes

Javascript is a **single thread** programming language.

Sync and Async

- Sync = synchronous = đồng bộ
- Async = asynchronous = bất đồng bộ
- Why async? --> avoid blocking main thread while processing

SYNCHRONOUS

Time taken (28 sec)

ASYNCHRONOUS

Time taken (10 sec)

Source: https://scoutapm.com/blog/async-javascript

Source: https://david-gilbertson.medium.com/should-you-should-be-using-web-workers-hint-probably-not-9b6d26dc8c6a

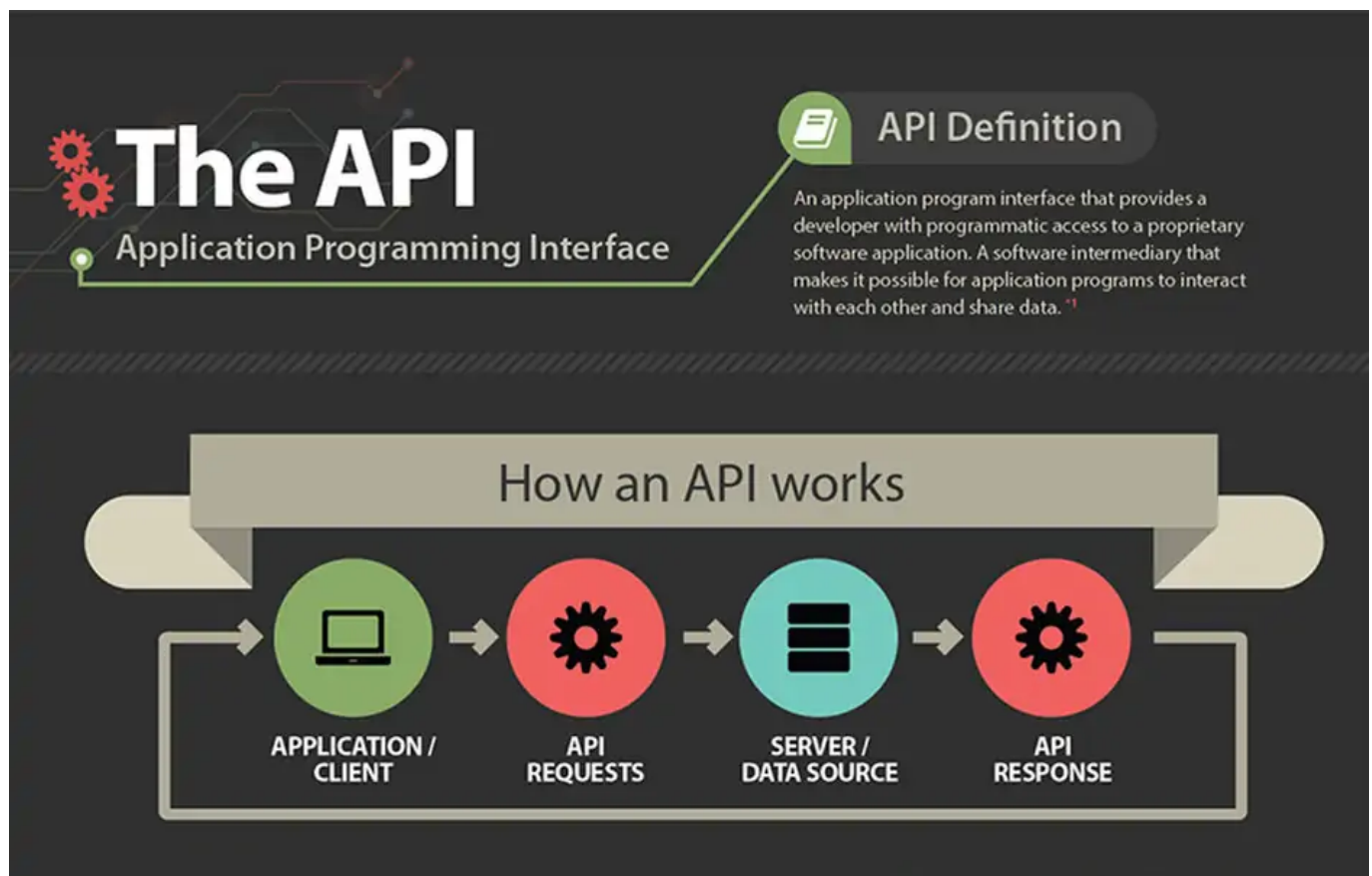|	sync	async
Executed in sequence	YES	NO
How many tasks are running at a time	One	Many (concurrency model)
Blocking	YES	NO
Which functions?	Math.trunc(), [].slice(), console.log(), ...	setTimeout, setInterval, Promise, async/await

```
const sum = 1 + 2;
console.log(sum);
```

Blocking on browser

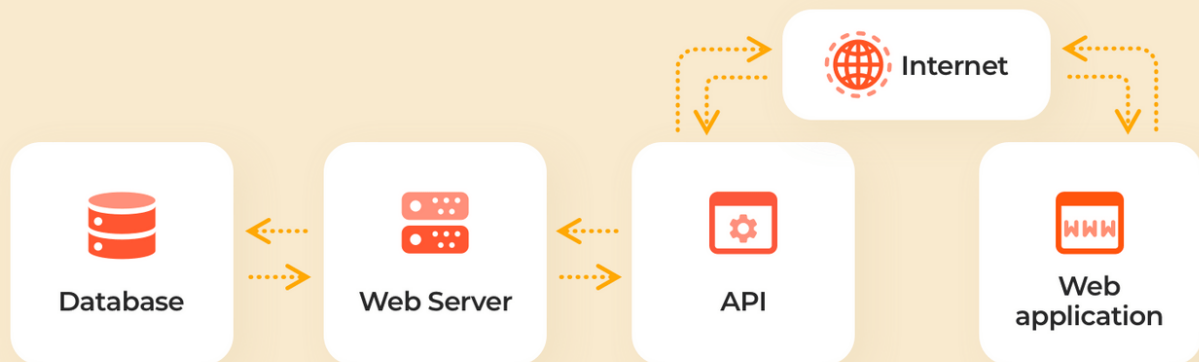| #	Name	Desc
1	window.**alert**(message)	Show an alert with message
2	window.**confirm**(message)	Return true/false based on user click OK/Cancel
3	window.**prompt**(message, default)	Return value that user enter into the box

```
window.alert('Easy Frontend');
console.log('Tada!!!'); // won't exec until user click OK on alert dialog
```

API

Source: https://www.smartfile.com/blog/the-api-infographic/

Source: https://www.cleveroad.com/blog/what-is-an-api

Tham khảo

- https://developer.mozilla.org/en-US/docs/Glossary/Thread
- https://thecodest.co/blog/asynchronous-and-single-threaded-javascript-meet-the-event-loop/
- https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Asynchronous/Concepts
- https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Asynchronous/Introducing
- https://rowanmanning.com/posts/javascript-for-beginners-async/

Khoá học Javascript cho người mới bắt đầu 2021🎉

- Tác giả: **Hậu Nguyễn** - Founder Easy Frontend
- Khoá học chỉ được published trên Udemy, không thông qua trung gian.
- Khoá học không bán dạng videos upload trên Google Drive hay bất cứ hình thức nào tương tự.
- Khoá học có nhóm discord để hỗ trợ trong quá trình học tập.

☎ Liên hệ tác giả để được hỗ trợ:

- ✅ Facebook: https://www.facebook.com/nvhauesmn/
- ✅ Fanpage: https://www.facebook.com/learn.easyfrontend
- ✅ Youtube Channel: https://www.youtube.com/easyfrontend