



The javascript Event Loop











Heap



Stack

Synchronous API

Asynchronous API

set  $\text{TimeOut}(f, t)$

Arady.Soft(f)

Array a



f

f



```
a=new Array()
```

```
a.sort()
```

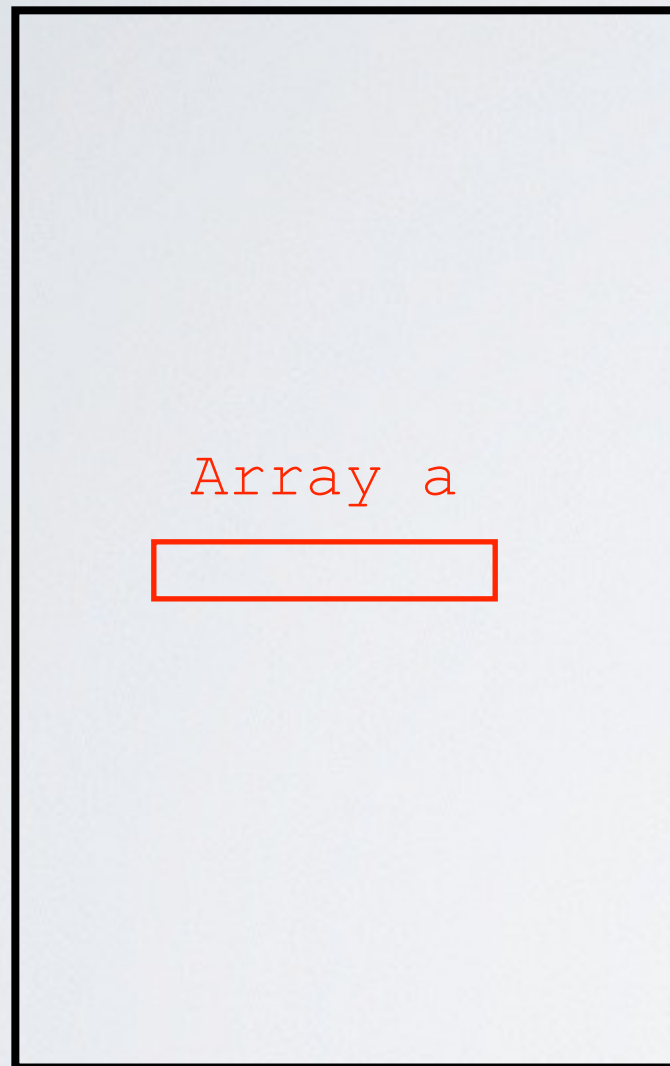


setTimeout(f, t)



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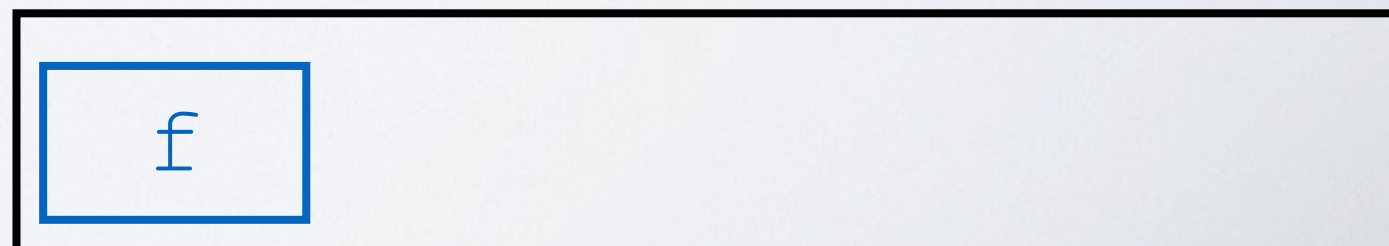
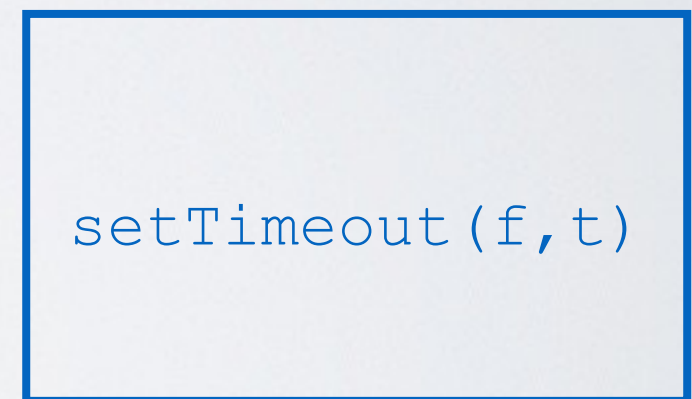
Stack



Synchronous API



Asynchronous API



# Multi-threaded vs Single-threaded

Multi-threading does necessarily means things are executed in parallel

➡ We only have one CPU !

So, why do we need multithreading ?

➡ Because programming languages have blocking I/O, and by default, programs wait for the I/O to be completed

But multithreading is expensive

- in terms of software design (synchronization)
- in terms of performances (context switch)

What is the alternative to multi-threading?

➡ Single-threaded with non-blocking I/O