

# Async Callbacks & The Call Stack?

```
console.log('hi');  
  
setTimeout(function () {  
    console.log('there');  
}, 5000);  
  
console.log('JSConfEU');
```

stack



# Async Callbacks & The Call Stack?

```
console.log('hi');
```

```
setTimeout(function () {  
    console.log('there');  
}, 5000);
```

```
console.log('JSConfEU');
```

stack

```
console.log('hi')
```

```
main()
```

# Async Callbacks & The Call Stack?

```
console.log('hi');  
  
setTimeout(function () {  
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}, 5000);
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```
console.log('JSConfEU');
```

stack

```
console.log('JSConfEU')
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```
main()
```

# Async Callbacks & The Call Stack?

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stack



# Async Callbacks & The Call Stack?

```
console.log('hi');  
  
setTimeout(function () {  
    console.log('there');  
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console.log('JSConfEU');
```

stack

```
console.log('there')
```

# Concurrency & the Event Loop

One thing at a time,  
except not really.

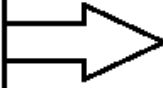


**JS**

*heap*



*stack*



*WebAPIs*

*DOM (document)*

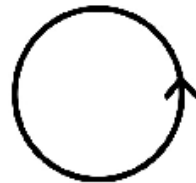
*AJAX ( XMLHttpRequest )*

*setTimeout*

*Extra things that the browser provides*



*event loop*



*callback queue*

*onClick*

*onLoad*

*onDone*

JS

```
console.log('Hi');
```

```
setTimeout(function cb() {  
  console.log('there');  
}, 5000);
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```
console.log('JSConfEU');
```

Console

stack

webapis

main()

event loop



task  
queue



JS

```
console.log('Hi');
```

```
setTimeout(function cb() {  
  console.log('there');  
}, 5000);
```

```
console.log('JSConfEU');
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## Console

Hi

stack

log('Hi')

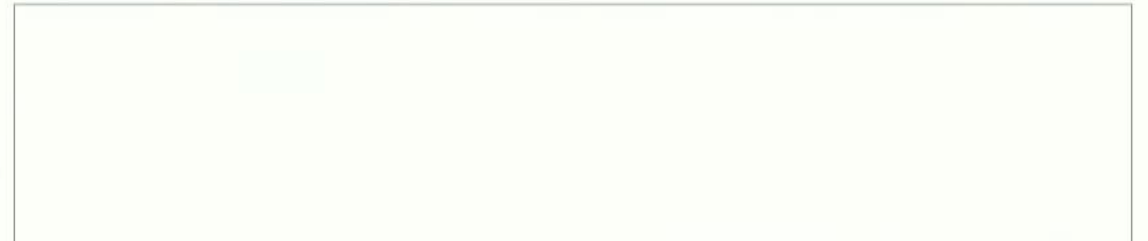
main()

webapis

event loop



task  
queue



JS

```
console.log('Hi');
```

```
setTimeout(function cb() {  
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console.log('JSConfEU');
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## Console

Hi

stack

setTimeout cb

main()

webapis

event loop



task  
queue

JS

```
console.log('Hi');
```

```
setTimeout(function cb() {  
  console.log('there');  
}, 5000);
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```
console.log('JSConfEU');
```

## Console

Hi

stack

setTimeout(cb)

main()

webapis

timer(

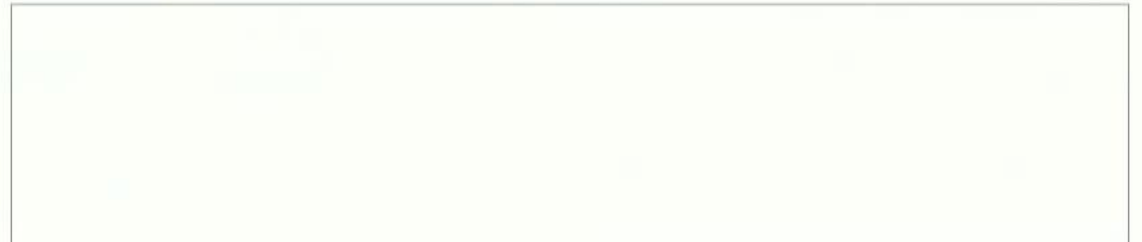


cb

event loop



task  
queue



JS

```
console.log('Hi');
```

```
setTimeout(function cb() {  
  console.log('there');  
}, 5000);
```

```
console.log('JSConfEU');
```

## Console

Hi


JSConfEU

stack

```
log('JSC')
```

```
main()
```

webapis

timer()

cb

event loop



task  
queue





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Console

Hi

JSConfEU

stack

webapis

event loop 

task  
queue

cb



```
console.log('Hi');
```

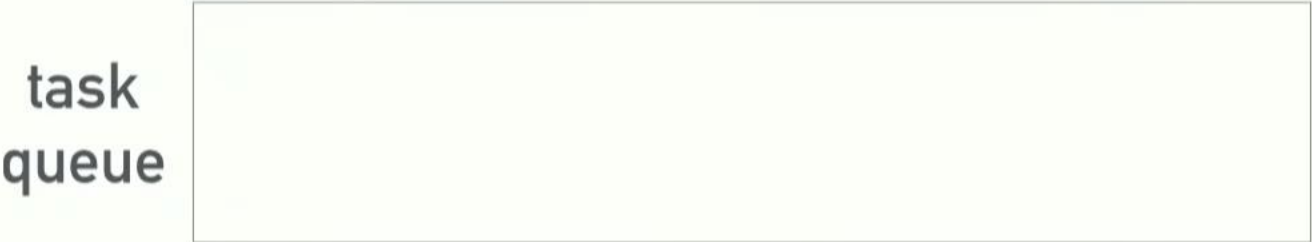
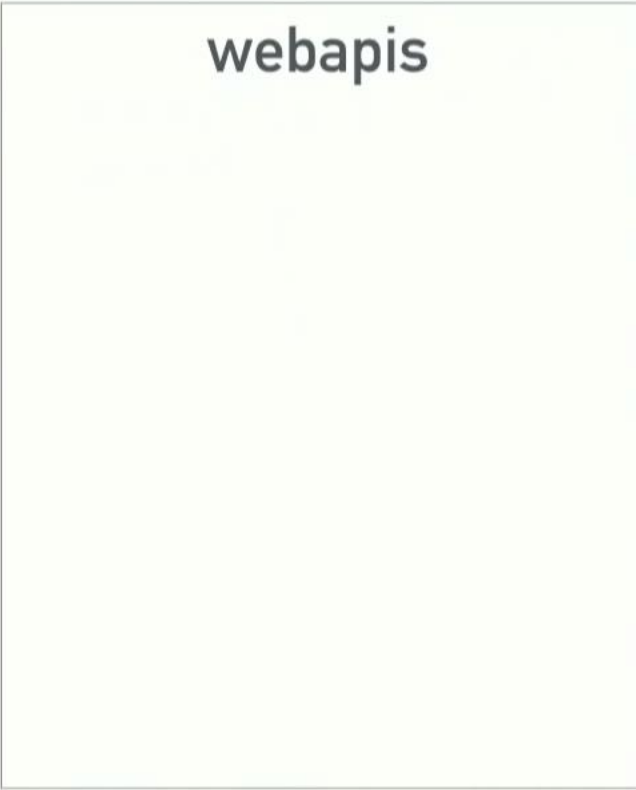
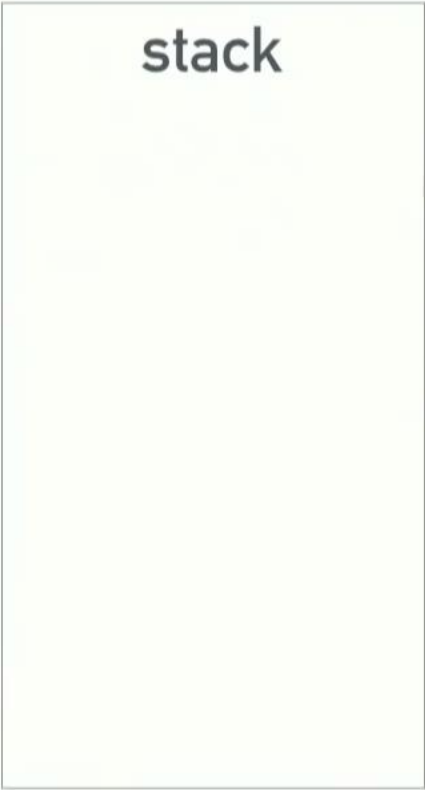
```
setTimeout(function cb() {  
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Console

Hi

JSConfEU





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}, 5000);
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Console

Hi

JSConfEU

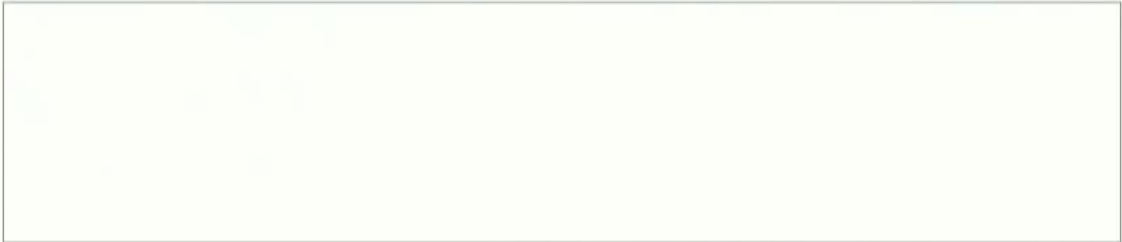
stack

webapis

cb

event loop 

task  
queue



JS

```
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```

## Console

Hi

JSConfEU

there

stack

log('there')

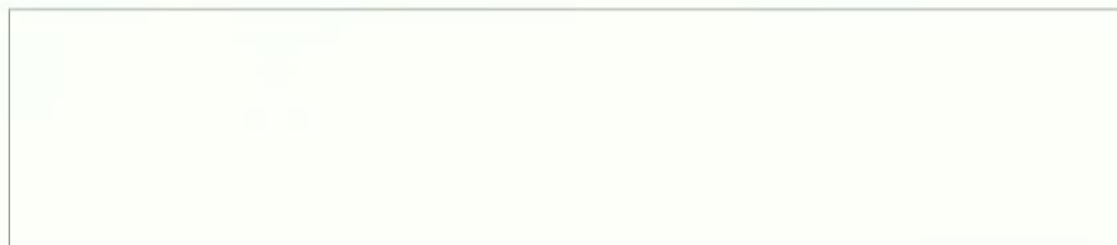
cb

webapis

event loop



task  
queue





JS

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console.log('Hi');
```

```
setTimeout(function cb() {  
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console.log('JSConfEU');
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## Console

Hi

JSConfEU

there

stack

webapis

event loop



task  
queue

- <http://latentflip.com/loupe>

JS

```
console.log('Hi');
```

```
$.get('url', function cb(data) {  
    console.log(data);  
});
```

```
console.log('JSConfEU');
```

Console

stack

webapis

event loop



task  
queue

JS

```
console.log('Hi');
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```
$.get('url', function cb(data) {  
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console.log('JSConfEU');
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Console

stack

webapis

main()

event loop



task  
queue

JS

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## Console

Hi

stack

log('Hi')

main()

webapis

event loop



task  
queue

JS

```
console.log('Hi');
```

```
$.get('url', function cb(data) {  
  console.log(data);  
});
```

```
console.log('JSConfEU');
```

## Console

Hi

stack

```
$.get('u', cb
```

```
main()
```

webapis

event loop



task  
queue

JS

```
console.log('Hi');
```

```
$.get('url', function cb(data) {  
    console.log(data);  
});
```

```
console.log('JSConfEU');
```

## Console

Hi

stack

```
$.get('u', cb)
```

```
main()
```

webapis

XHR (



cb

event loop



task  
queue

JS

```
console.log('Hi');
```

```
$.get('url', function cb(data) {  
    console.log(data);  
});
```

```
console.log('JSConfEU');
```

## Console

Hi

stack

main()

webapis

XHR(



cb

event loop



task  
queue





JS

```
console.log('Hi');
```

```
$.get('url', function cb(data) {  
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```

```
console.log('JSConfEU');
```

## Console

Hi

JSConfEU

stack

log('JSC')

main()

webapis

XHR(



cb

event loop



task  
queue



JS

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console.log('Hi');
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## Console

Hi

JSConfEU

stack

webapis

XHR (



cb

event loop



task  
queue

JS

```
console.log('Hi');
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console.log('JSConfEU');
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## Console

Hi

JSConfEU

stack

webapis

XHR( ✓ )

event loop



task  
queue

cb

JS

```
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## Console

Hi

JSConfEU

stack

webapis

event loop



cb

task  
queue

JS

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console.log('Hi');
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});
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```

## Console

Hi

JSConfEU

stack

log(data)

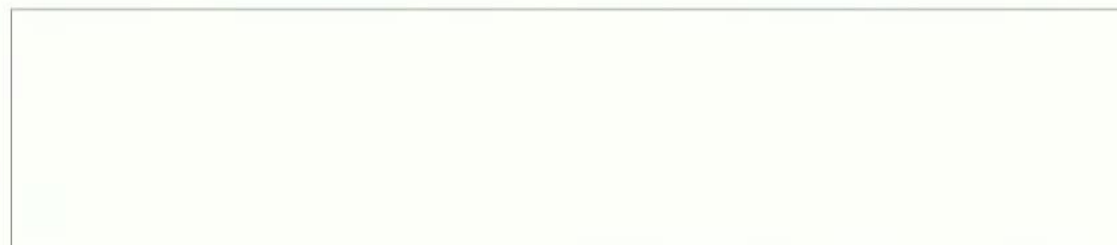
cb

webapis

event loop



task  
queue



JS

```
console.log('Hi');
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$.get('url', function cb(data) {  
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});
```

```
console.log('JSConfEU');
```

## Console

Hi

JSConfEU

```
{ "some": "json" }
```

stack

webapis

cb

event loop



task  
queue