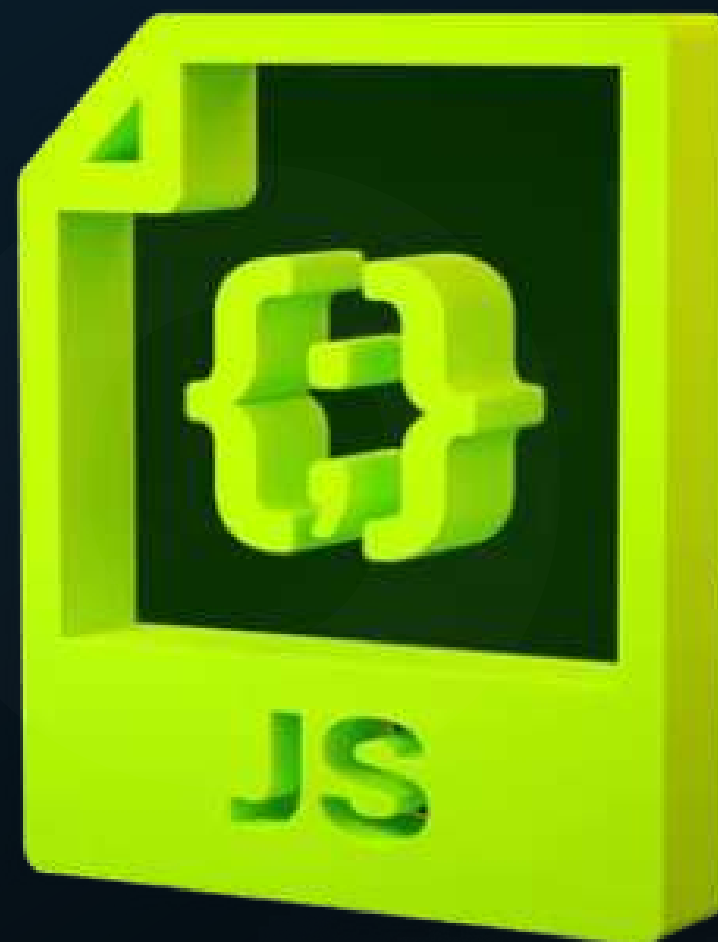




HTML 101

async vs defer in `<script>` tags ✨





What is it ?

We'll understand the difference in using the **async** and **defer** attributes in <script> tags in your HTML page

ways to load JS files



```
<script src="..."></script>
```



```
<script async src="..."></script>
```



```
<script defer src="..."></script>
```





<script> tag in the <head>



```
<html lang="en">
  <head>
    <script src="./index.js"></script>
  </head>
  <body>
    Hey lo World!
  </body>
</html>
```

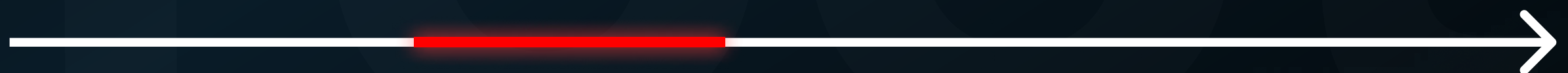
without async or defer

parse

load

execute

parse



Blocks HTML parsing. User would see a blank page while it fetches the .js file



Manish Poduval



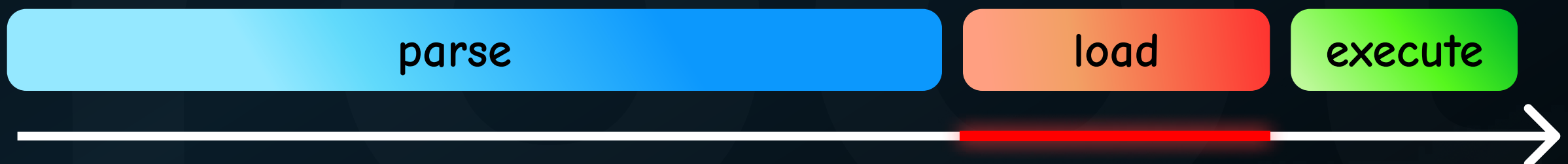


<script> at the end of <body>



```
<html lang="en">
  <head>
  </head>
  <body>
    Hey lo World!
    <script src="./index.js"></script>
  </body>
</html>
```

without async or defer



Waits for HTML DOM to be created. User might have to wait longer





using async



```
<html lang="en">  
  <head>  
    <script async src="./index.js"></script>  
  </head>  
  <body>  
    Hey lo World!  
  </body>  
</html>
```

load

parse

execute

parse

Loads it as it is parsing the HTML and executes it as soon as the script is fetched. Good for 3rd party libraries.



Manish Poduval





Caveat using async



```
<html lang="en">
  <head>
    <!-- takes 20 seconds to load -->
    <script async src="./index1.js"></script>
    <!-- takes 5 seconds to load -->
    <script async src="./index2.js"></script>
  </head>
  <body>
    Hey lo World!
  </body>
</html>
```

load 2

load 1

parse

execute 2

execute 1

parse

Scripts are not executed in order



Manish Poduval





using defer



```
<html lang="en">  
  <head>  
    <script defer src="./index.js"></script>  
  </head>  
  <body>  
    Hey lo World!  
  </body>  
</html>
```

load

parse

execute

Waits for DOM to be created. Executes script tags in the order you've defined them.



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multiple scripts using defer

```
<html lang="en">
  <head>
    <!-- takes 20 seconds to load -->
    <script defer src="./index1.js"></script>
    <!-- takes 5 seconds to load -->
    <script defer src="./index2.js"></script>
  </head>
  <body>
    Hey lo World!
  </body>
</html>
```

load 2

load 1

parse

execute 1

execute 2

Scripts are executed in order that you define them



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