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Variables & Constants

Variables

"True" variables where the stored value actually changes

```
let name = 'Anna';
name = 'Max';
```

Constants

"Variables" where the value actually never changes

```
const enteredValue = 'Hi';
```

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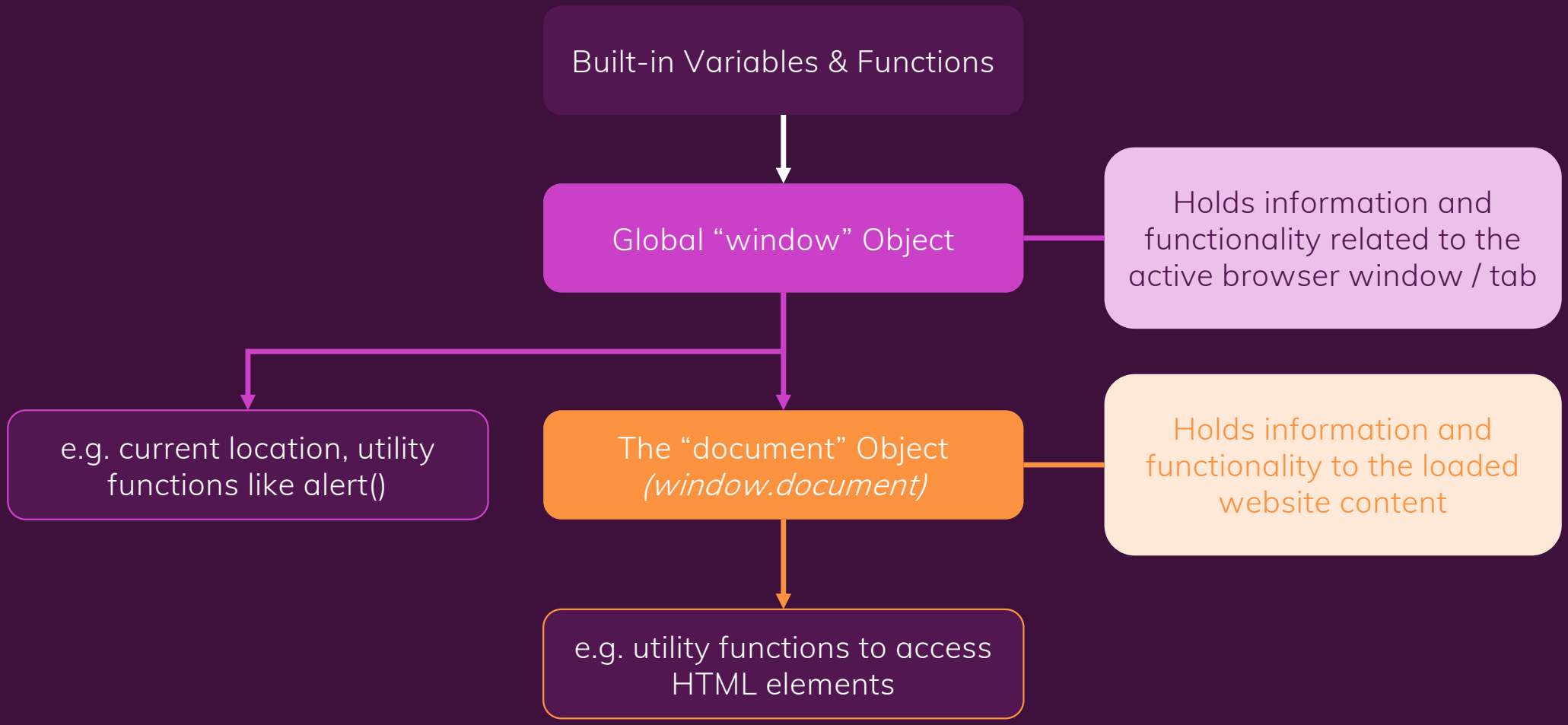
“window” & “document”



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"The DOM"

Document **O**bject **M**odel

The data representation ("internal representation") of the parsed HTML code

The browser parses our HTML code and saves all elements as JavaScript objects

→ Our JavaScript code is able to interact with the DOM and extract data from it or manipulate it

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From HTML To DOM

Our HTML Code
(sent from server to browser)

```
<!DOCTYPE html>
<html lang="en">
  <head>
    …
  </head>
  <body>
    <h1>Hi there!</h1>
    <p>
      This is a
      <a href="…">link</a>
    </p>
  </body>
</html>
```

The DOM ("document" object)
(translated data representation)

```
{
  …,
  body: {
    …,
    children: [
      …,
      {
        nodeName: 'P',
        children: [
          { nodeName: 'A' }
        ]
      },
    ]
  }
```

This is vastly simplified – the "document" object contains way more data!

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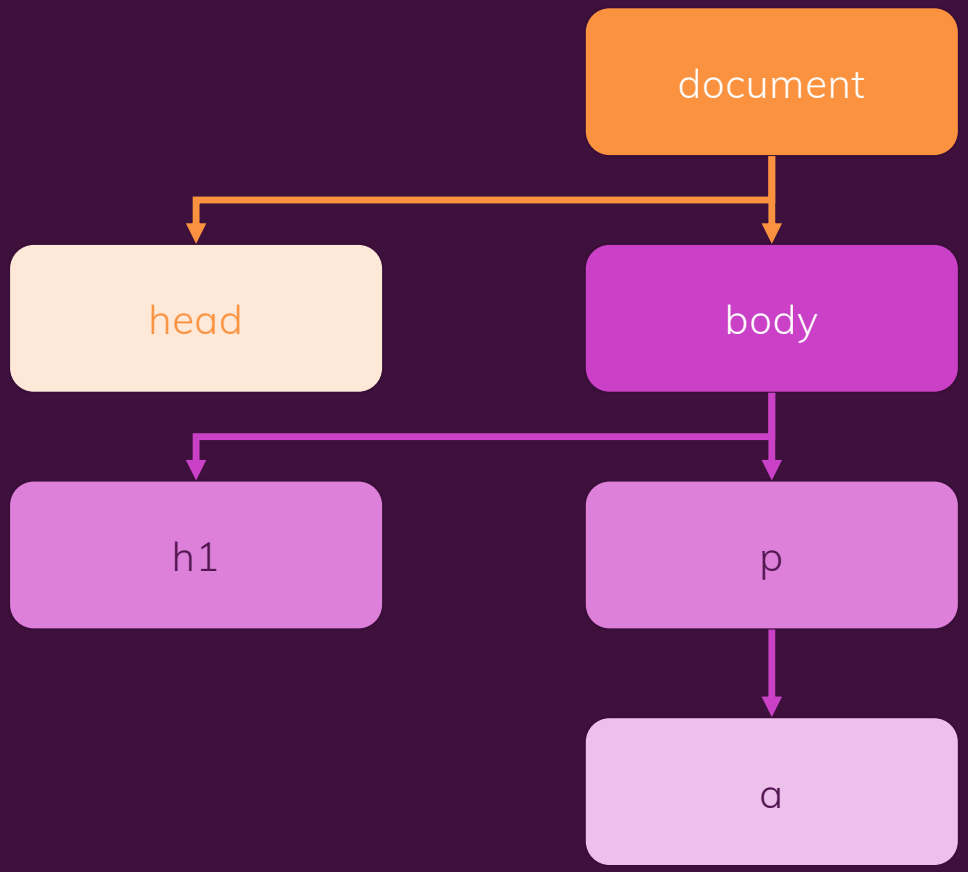
The DOM Tree



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Selecting DOM Elements

“Drill Into Elements”

```
document.body.children[0].firstChild
```

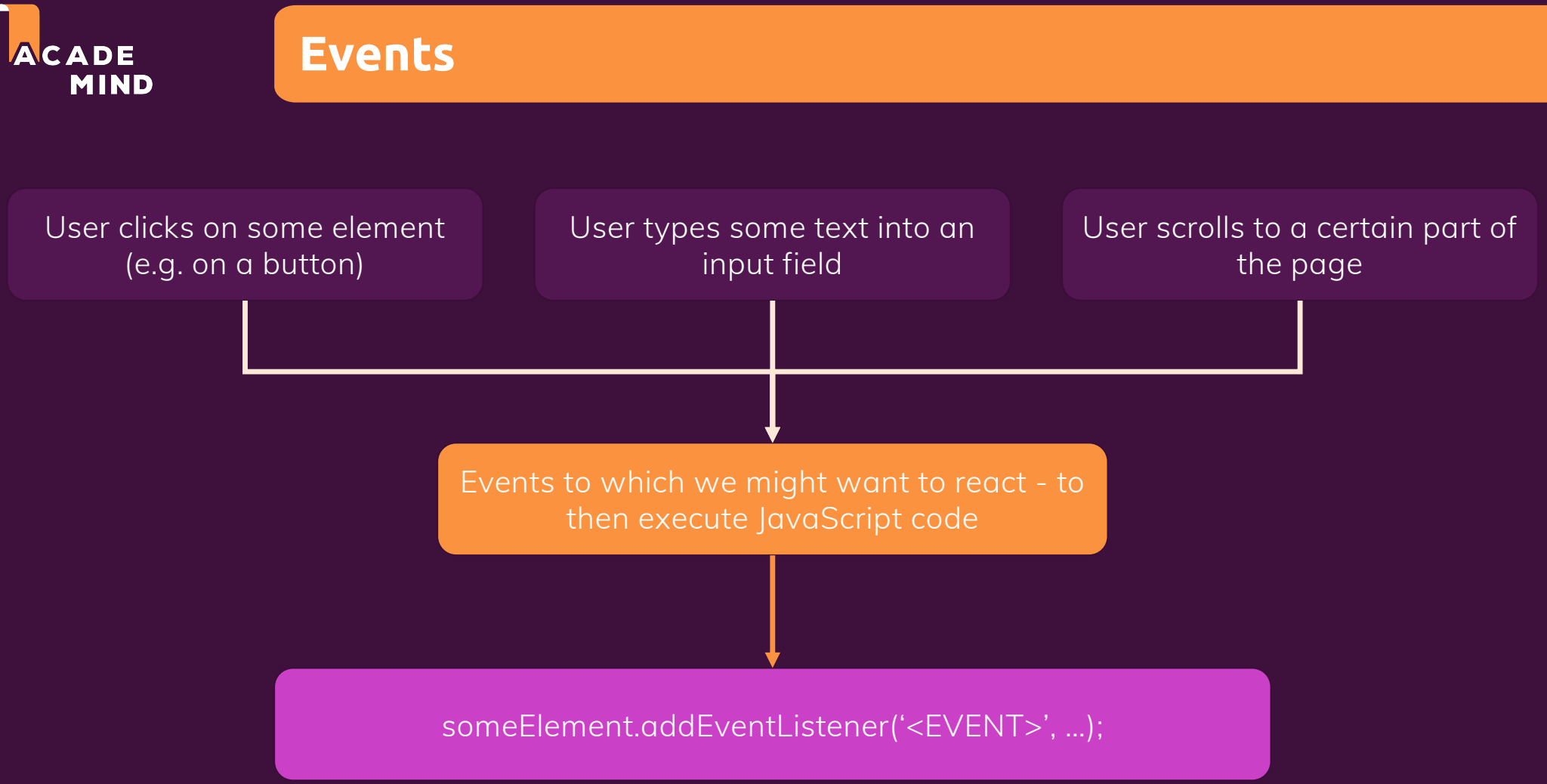
You have to know the DOM structure and if it changes, your code needs to change as well

Query Elements

```
document.getElementById('some-id');
document.querySelector('.some-class');
```

Selecting elements works like in CSS and hence no exact DOM structure knowledge is required

Events


User clicks on some element (e.g. on a button)
User types some text into an input field
User scrolls to a certain part of the page
Events to which we might want to react - to then execute JavaScript code
someElement.addEventListener('<EVENT>', ...);