

Events

- Interactions w/ our web page that we can respond to programmatically

types of events

onclick
onmouseover
onchange
onblur
onfocus

3 ways to tie functionality to these events

① in html

```
<button id="my-btn" onclick="someFunc()" ... >Click Me! </button>
```

②

```
document.getElementById("my-btn").onclick = function() { ... }
```

③ using event listeners

```
document.getElementById("my-btn").addEventListener()
```

params:

1) type of event ("click")

2) callback function

(optional) 3) useCapture → describes event propagation for nested events

The Event Object

- a javascript object which represents the event which just occurred
- accessible in the callback function
- allows us to access information about the time the event occurred, the coordinates of the mouse, etc



HTTP - Hypertext Transfer Protocol

HTTP Request

→ version
→ url
→ headers
→ method
→ body

HTTP Response

→ version
→ status code
→ headers
→ body

HTTP Methods:

GET - requesting data
POST - adding data
PUT - updating data
DELETE - removing data
OPTIONS } metadata
HEAD }
TRACE }

HTTP Status Codes

100's informational
200's success, e.g. 200 ok, 201 created
300's redirect
400's client side error, e.g. 400 bad request, 404 not found
500's server side errors

Making HTTP Requests with JavaScript

AJAX → Asynchronous JavaScript and XML
 ↳ request happens asynchronously
 ↳ we don't have to refresh the page
 ↳ this happens in the background
 ↳ JS doesn't have to wait on response
 ↳ to execute other code
 ↳ we'll be using JSON!

XMLHttpRequest

```
let xhr = new XMLHttpRequest();
```

properties:

- readyState
- status
- onreadystatechange
- response

methods:

- open(method, url, ..., async, auth...)
 ↳ getting/setting headers
 - send()
 ↳ optionally include request body

Ready State

0 UNSENT → instantiated xhr, haven't invoked open
1 OPENED → invoked open, not yet send
2 HEADERS_RECEIVED → invoked send, have headers from response
3 LOADING → partial content
4 DONE → full content

AJAX workflow

```
let xhr = new XMLHttpRequest();
xhr.open("GET", "http://myurl.com/planes");
xhr.onreadystatechange = function() {
  if (xhr.readyState === XMLHttpRequest.DONE && xhr.status === 200) {
    let planesJSON = xhr.response;
    let planesArr = JSON.parse(planesJSON);
    // ...
  }
}
xhr.send();
```