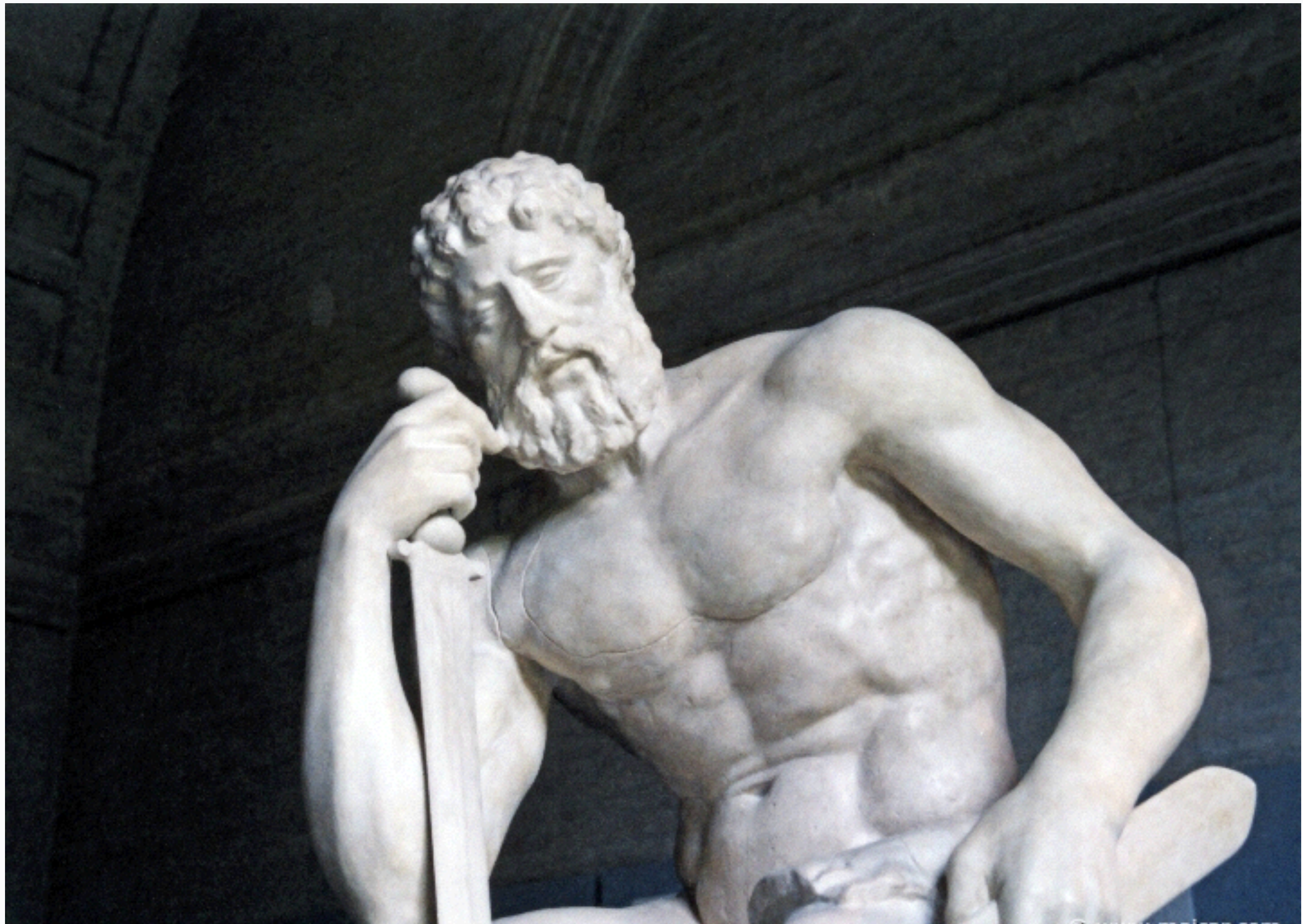


AJAX

Making the web seamless







http requests in the browser

- Browser navigation
 - URL bar
 - Links
 - `window.location.href = "http://www.google.com";`

http requests in the browser

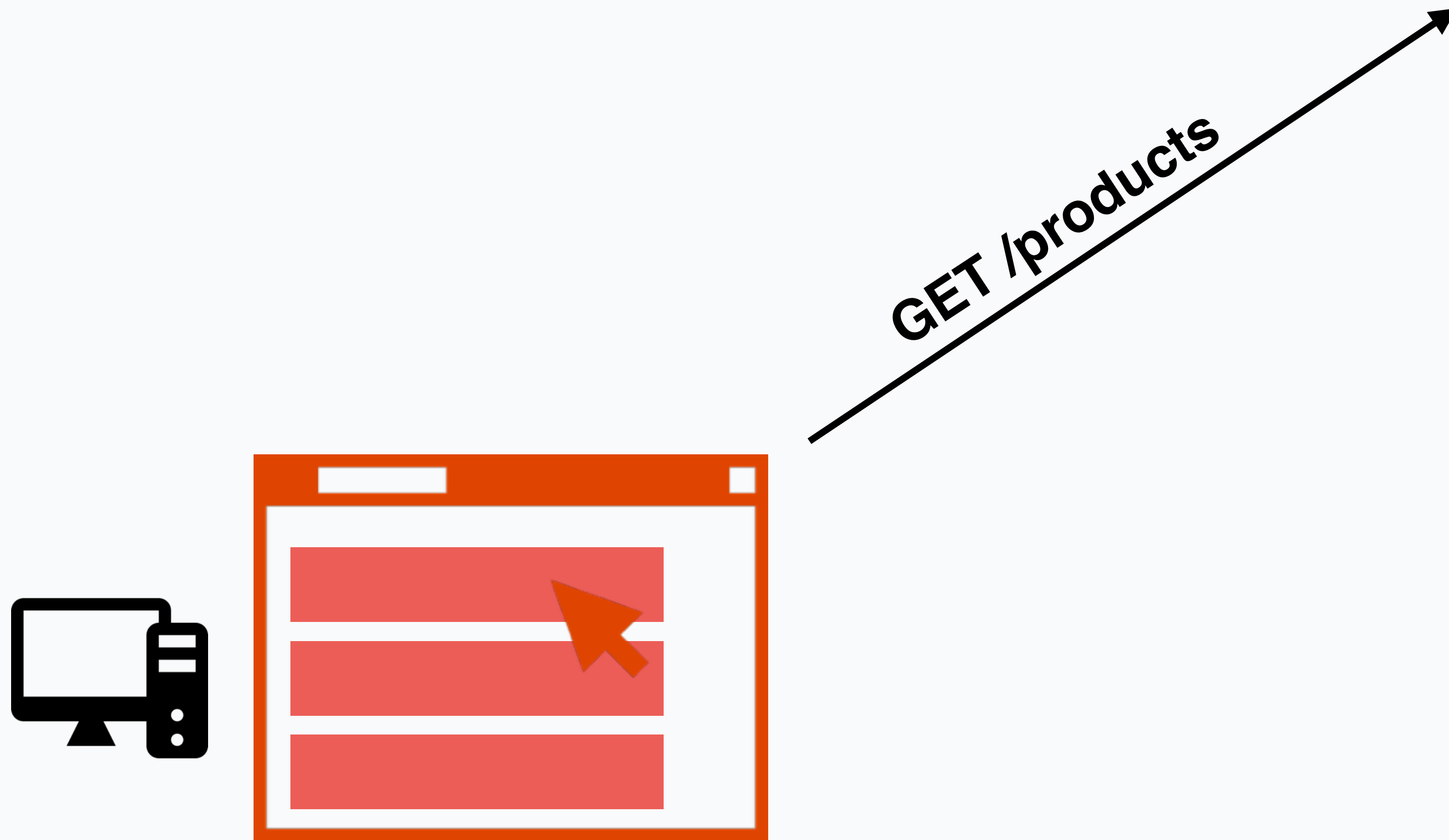
- Browser navigation
 - URL bar
 - Links
 - `window.location.href = "http://www.google.com";`
- Submitting forms (POST/PUT)

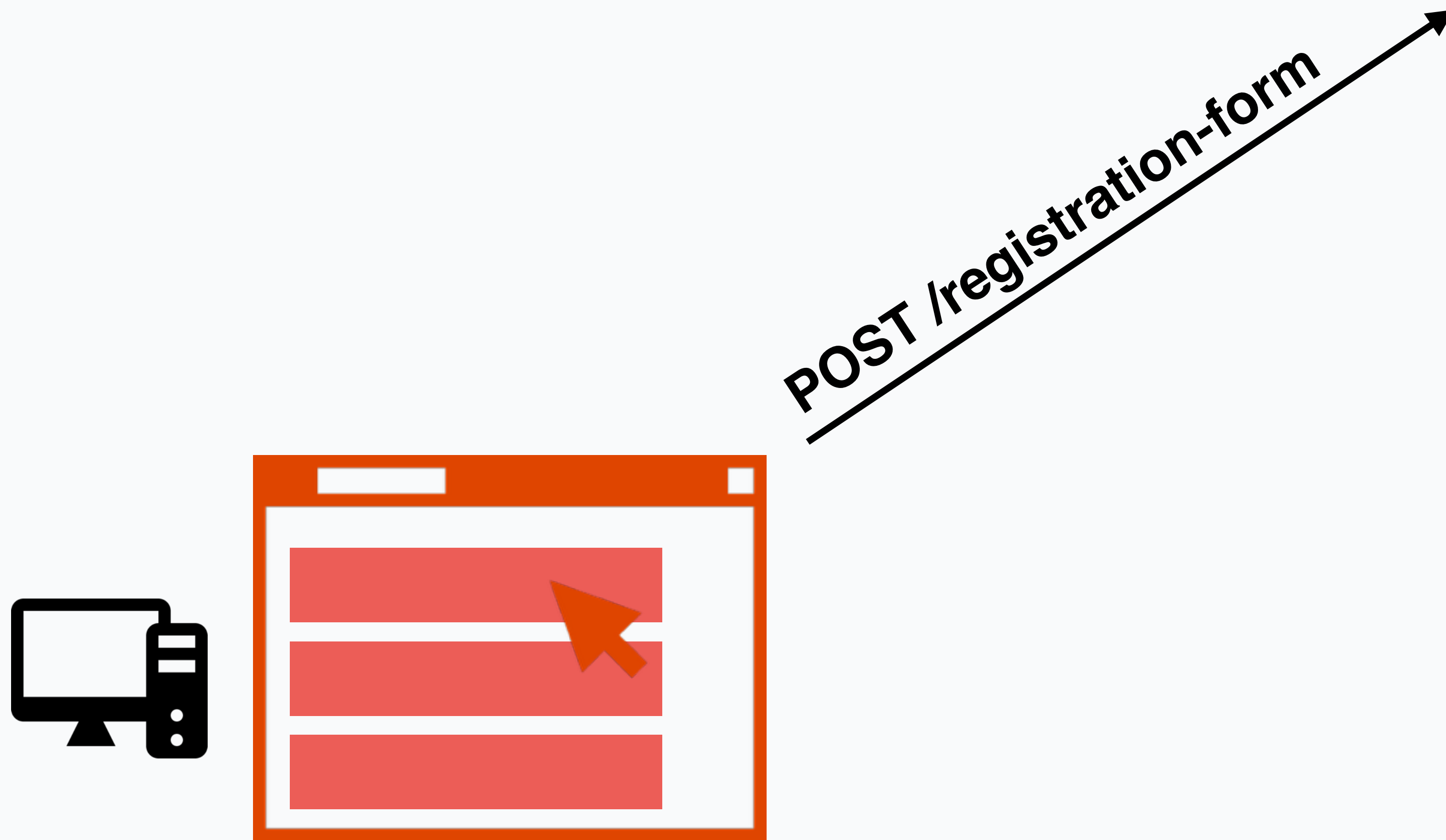
http requests in the browser

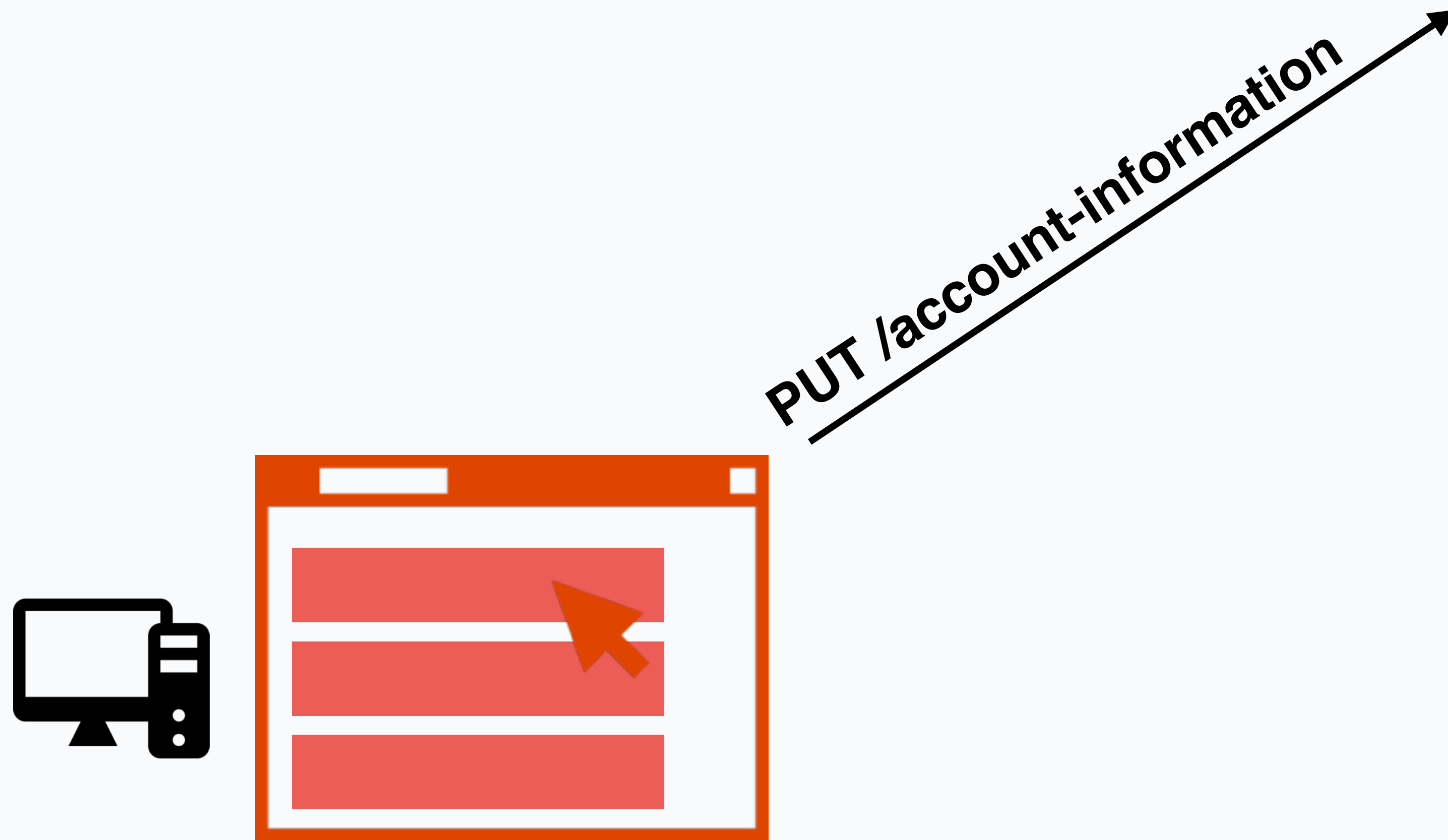
- Browser navigation
 - URL bar
 - Links
 - `window.location.href = "http://www.google.com";`
- Submitting forms (POST/PUT)
- All the above makes the browser navigate and retrieve new documents.

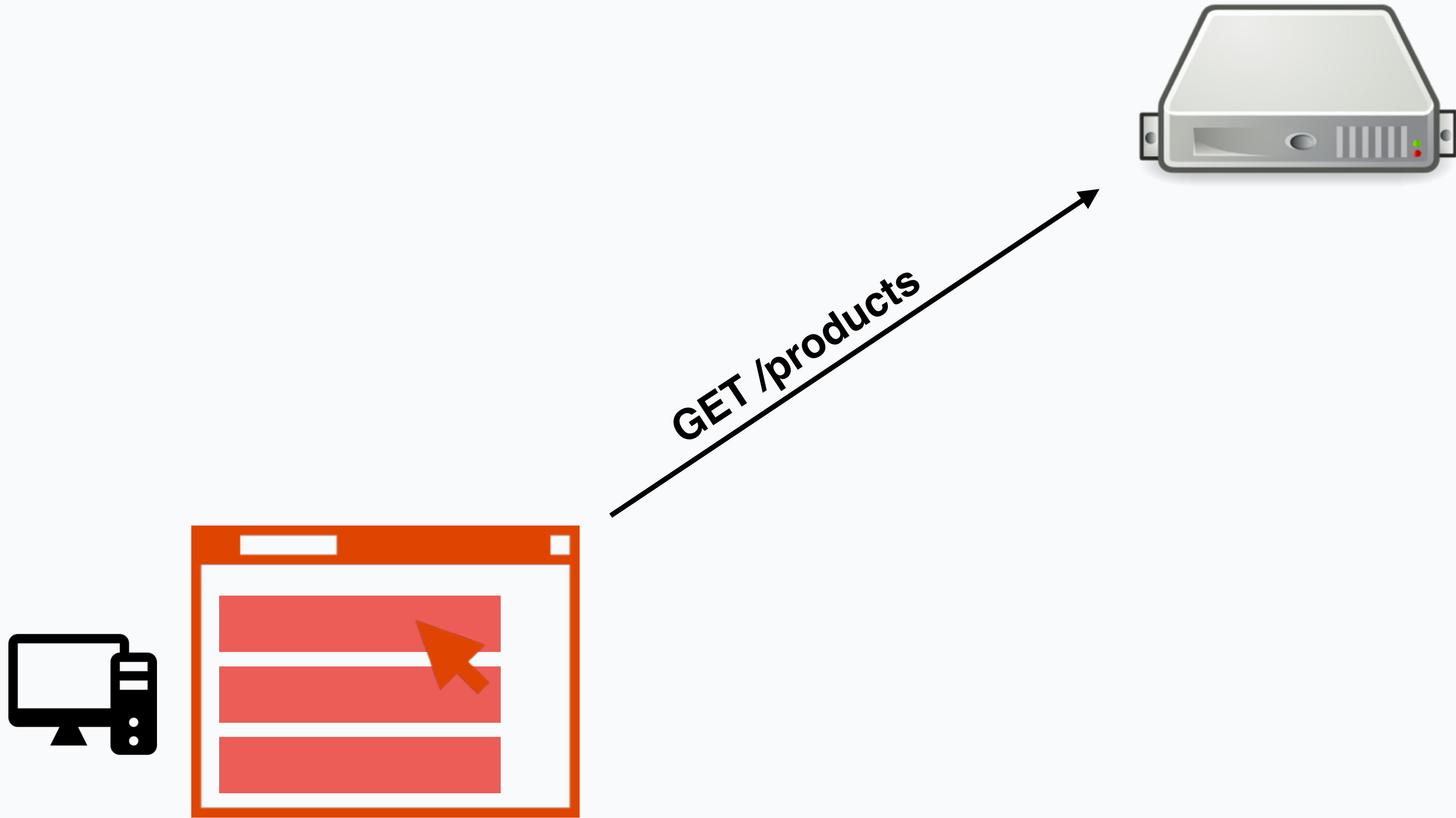


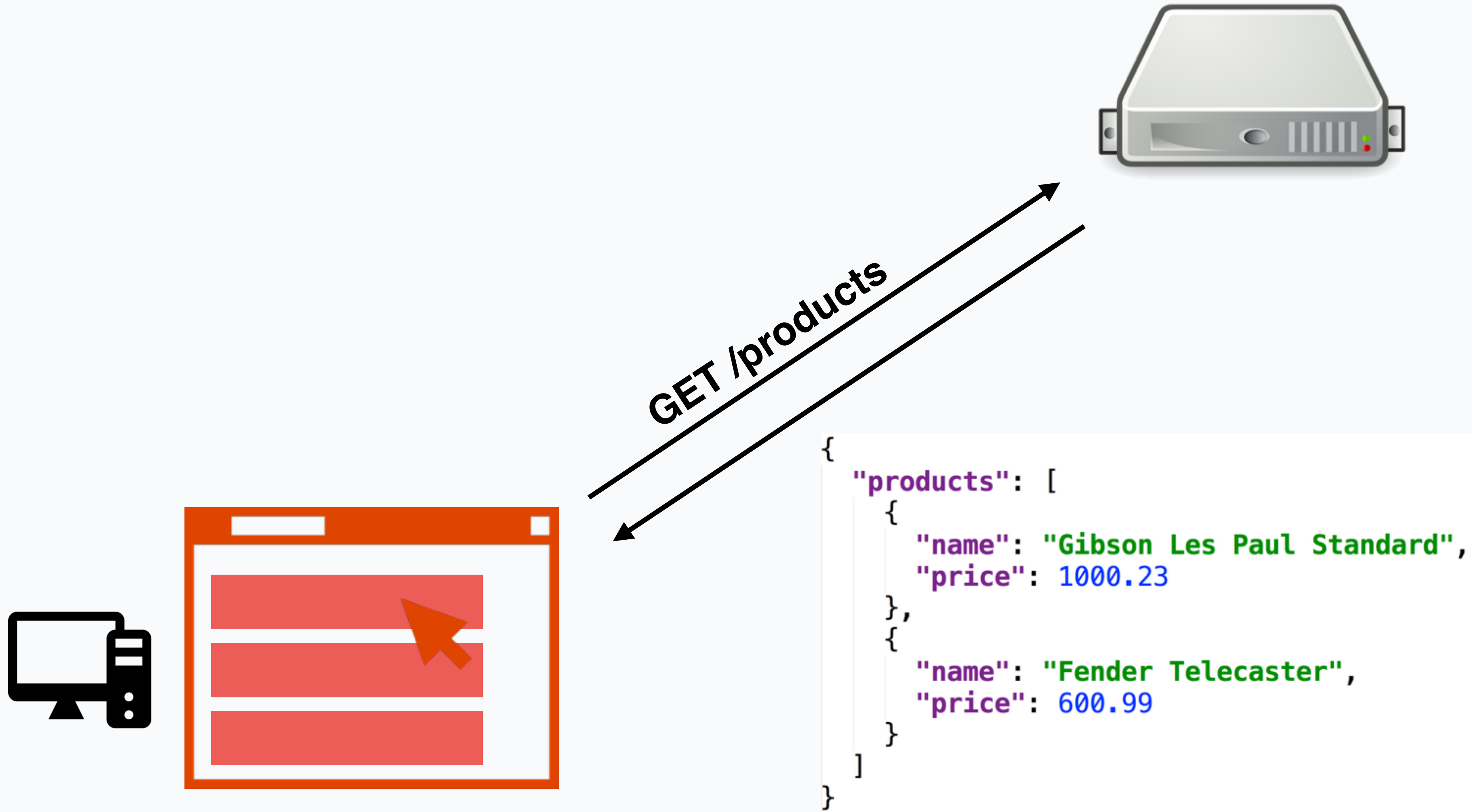


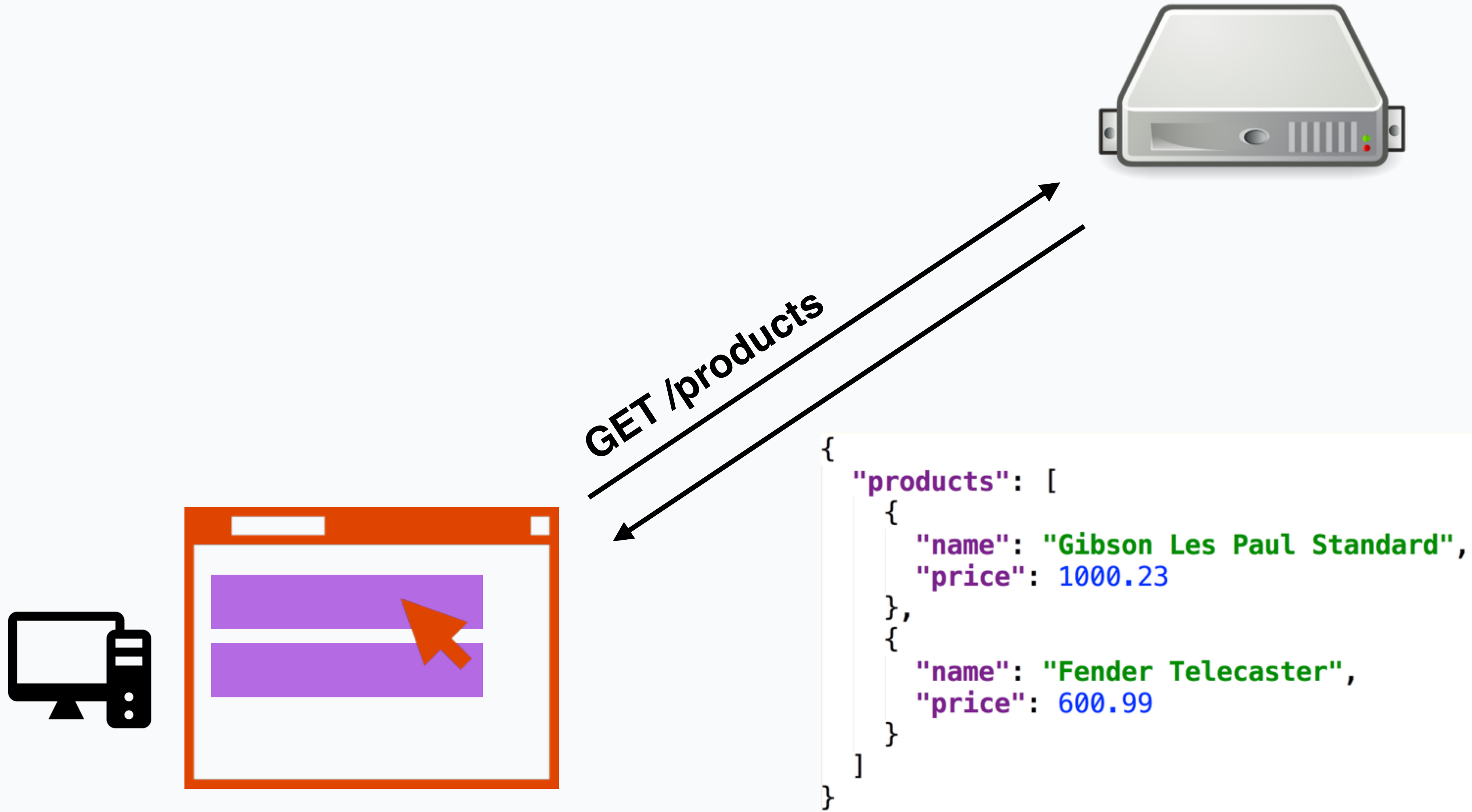












basics of ajax

- Making background HTTP requests using Javascript

basics of ajax

- Making background HTTP requests using Javascript
- Handling the response of those HTTP requests with Javascript

basics of ajax

- Making background HTTP requests using Javascript
- Handling the response of those HTTP requests with Javascript
- No page refresh necessary

1996

Microsoft invents `<iframe>`

1996-2002

Microsoft awkwardly implements background HTTP with ActiveX. Mozilla/Safari/Opera begin to implement standard XMLHttpRequest.

Largely unimplemented except for some Microsoft Outlook applications.

2002-2005

Google makes a huge step forward by implementing standard XMLHttpRequest in their new products: Gmail and Google Maps.

Kayak.com also implements what the developers coined at the time as “the xml http thing”.

2005

Popular technologist Jesse James Garrent coins the term *AJAX*, an acronym for Asynchronous Javascript and XML.

```
function makeRequest(url) {  
    httpRequest = new XMLHttpRequest();  
    httpRequest.onreadystatechange = alertContents;  
    httpRequest.open('GET', url);  
    httpRequest.send();  
}
```

```
function makeRequest(url) {  
    if (window.XMLHttpRequest) { // Mozilla, Safari, ...  
        httpRequest = new XMLHttpRequest();  
    } else if (window.ActiveXObject) { // IE  
        try {  
            httpRequest = new ActiveXObject("Msxml2.XMLHTTP");  
        }  
        catch (e) {  
            try {  
                httpRequest = new ActiveXObject("Microsoft.XMLHTTP");  
            }  
            catch (e) {}  
        }  
    }  
  
    if (!httpRequest) {  
        alert('Giving up :( Cannot create an XMLHttpRequest instance')  
    }  
    httpRequest.onreadystatechange = alertContents;  
    httpRequest.open('GET', url);  
    httpRequest.send();  
}
```


2006

jQuery 1.0 released, providing abstraction for cross-browser implementations of AJAX, igniting its mass popularity across the internet.

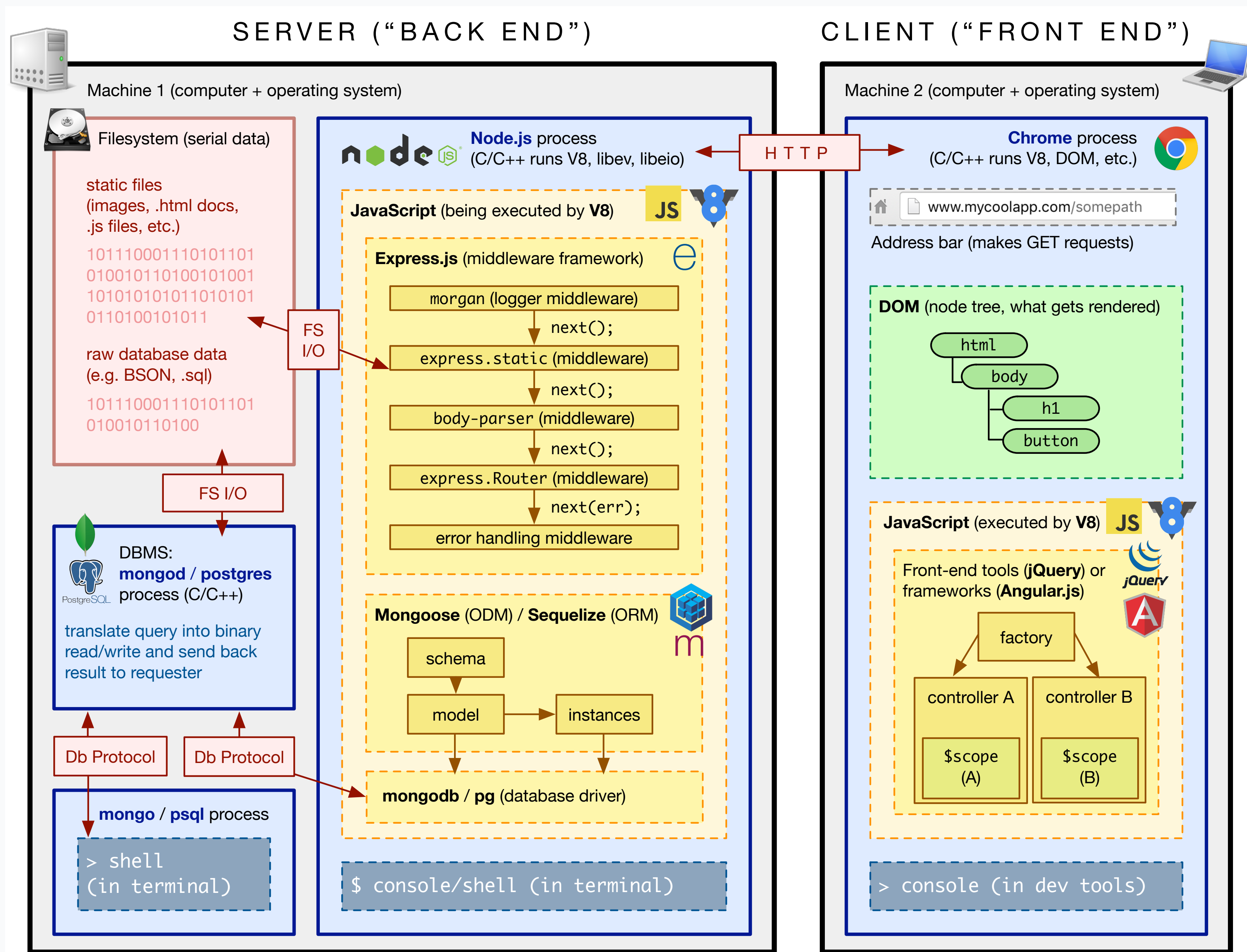
```
$.ajax({  
    method: 'GET',  
    url: '/product'  
})  
    .then(function (response) {  
        // use response data  
    })  
    .catch(function (error) {  
        // handle the error  
    })
```

TODAY

We live in an era of single-page applications that rarely refresh and leverage AJAX heavily to provide a quick user experience.

ASYNCHRONOUS JAVASCRIPT AND ***XML*** (?)

DATA serialization



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data serialization formats

- How real data is conveyed using text in a human readable format.

data serialization formats

- How real data is conveyed using text in a human readable format.
- Used for delivery of data over limited transports, like HTTP.

data serialization formats

- How real data is conveyed using text in a human readable format – or when losing access to memory
- Used for delivery of data over limited transports, like HTTP.
- Examples: JSON, XML, YAML

ASYNCHRONOUS JAVASCRIPT AND ~~XML~~

ASYNCHRONOUS JAVASCRIPT AND **JSON**

recap

- AJAX is the method of sending background HTTP requests with Javascript
- jQuery is not necessary for AJAX, but it is a helpful abstraction for easy use
- The Network tab in Developer Tools is your friend

Workshop