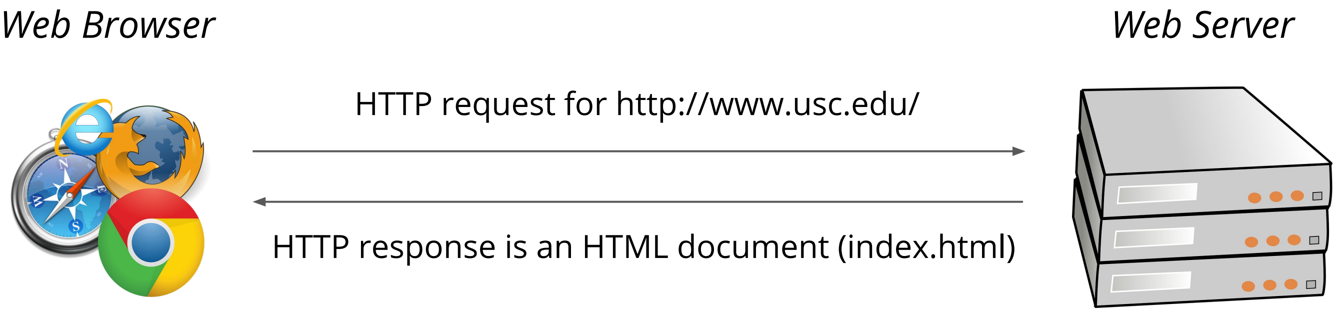
DOM Storage

ITP 301
Spring 2021

Saving Information



Web Browser

Web Server

HTTP request for http://www.usc.edu/

HTTP response is an HTML document (index.html)

HTTP requests are **stateless**.

- Servers do not automatically save information about requests.

Two ways to retain information:

1. Client-side: in the browser using DOM storage.
2. Server-side: on the server using databases (covered in ITP 304).

DOM Storage

Also called Web Storage

Data stored in client browsers.

Can only store **strings**.

Has two implementations:

1. Local Storage,
2. Session Storage.

Lifetime: until manually deleted (local) or until browser is closed (session).

Local Storage vs. Session Storage

Data saved per domain for each browser.	Data saved per domain for each window / tab.
Must be deleted manually.	Deleted when window / tab is closed.

DOM Storage Syntax

Saving new data:

`Storage.`*`key`*` = `*`value`*

Accessing data:

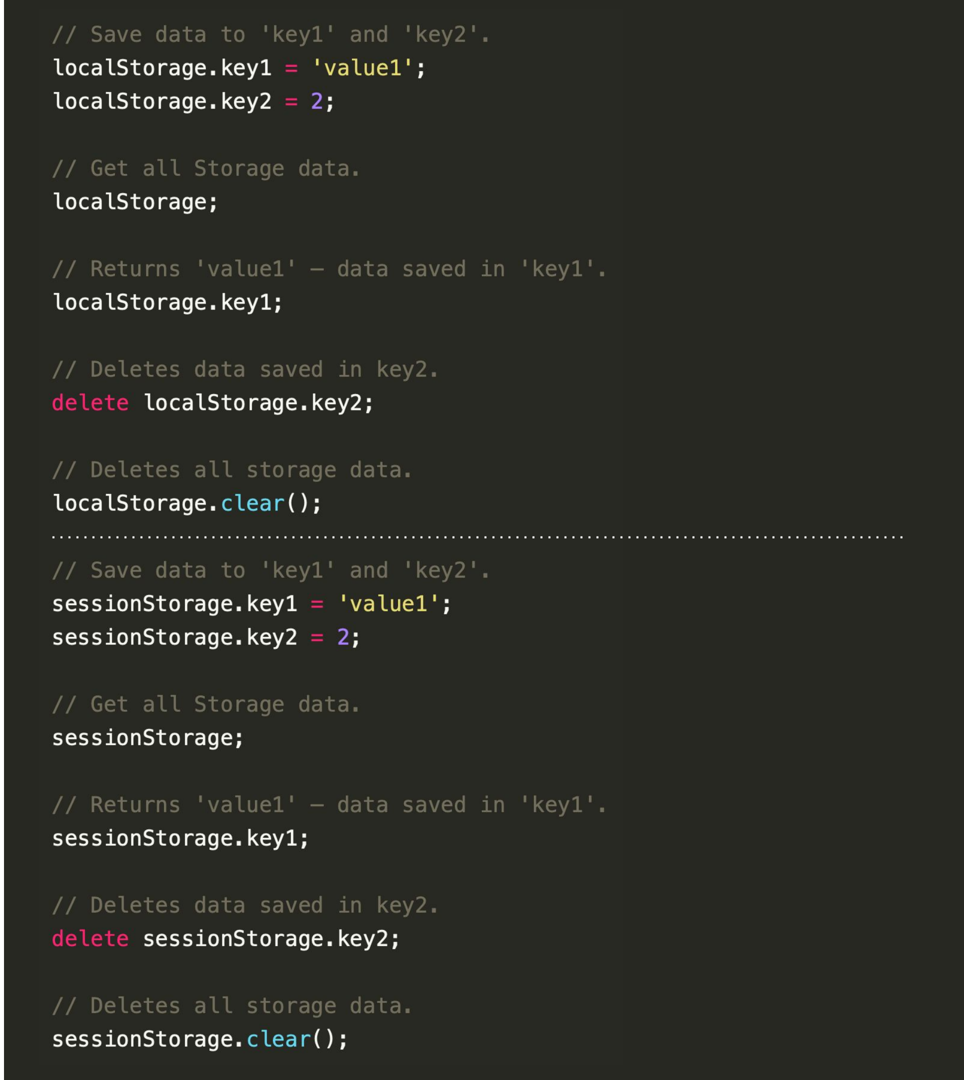
`Storage.`*`key`*

Removing data:

`delete Storage.`*`key`*

Removing all data:

`Storage.clear()`

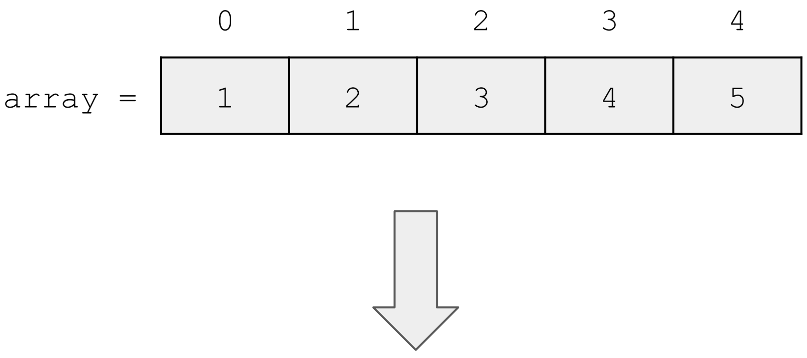


```
// Save data to 'key1' and 'key2'.
localStorage.key1 = 'value1';
localStorage.key2 = 2;

// Get all Storage data.
localStorage;

// Returns 'value1' – data saved in 'key1'.
localStorage.key1;

// Deletes data saved in key2.
delete localStorage.key2;

// Deletes all storage data.
localStorage.clear();
```

```
// Save data to 'key1' and 'key2'.
sessionStorage.key1 = 'value1';
sessionStorage.key2 = 2;

// Get all Storage data.
sessionStorage;

// Returns 'value1' – data saved in 'key1'.
sessionStorage.key1;

// Deletes data saved in key2.
delete sessionStorage.key2;

// Deletes all storage data.
sessionStorage.clear();
```

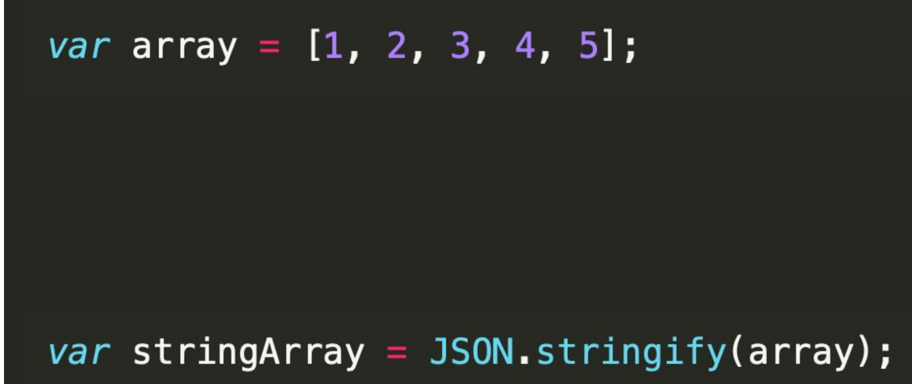
JSON.stringify()

Converts arrays and objects to strings.



	0	1	2	3	4
array =	1	2	3	4	5

```
stringArray = "[1,2,3,4,5]"
```

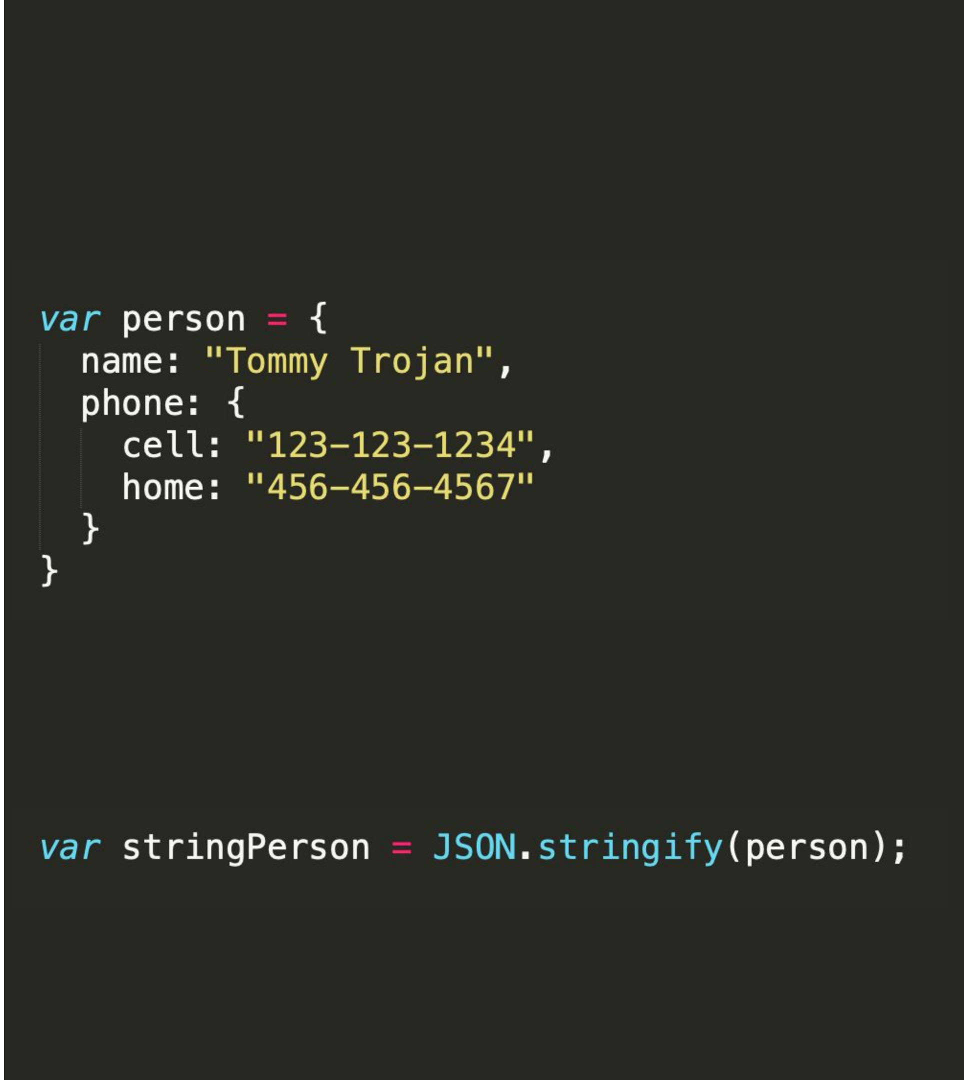


```
var array = [1, 2, 3, 4, 5];


var stringArray = JSON.stringify(array);
```

JSON.stringify()

<table>
<tr><th>Key</th><th>Value</th></tr>
<tr><td>name</td><td>Tommy</td></tr>
<tr><td>phone</td><td><table><tr><th>Key</th><th>Value</th></tr><tr><td>cell</td><td>123-456-7890</td></tr><tr><td>home</td><td>321-654-0987</td></tr></table></td></tr>
</table>

'{"name":"Tommy Trojan","phone":{"cell":"123-123-1234","home":"456-456-4567"}}'



```
var person = {
  name: "Tommy Trojan",
  phone: {
    cell: "123-123-1234",
    home: "456-456-4567"
  }
}
```

```
var stringPerson = JSON.stringify(person);
```

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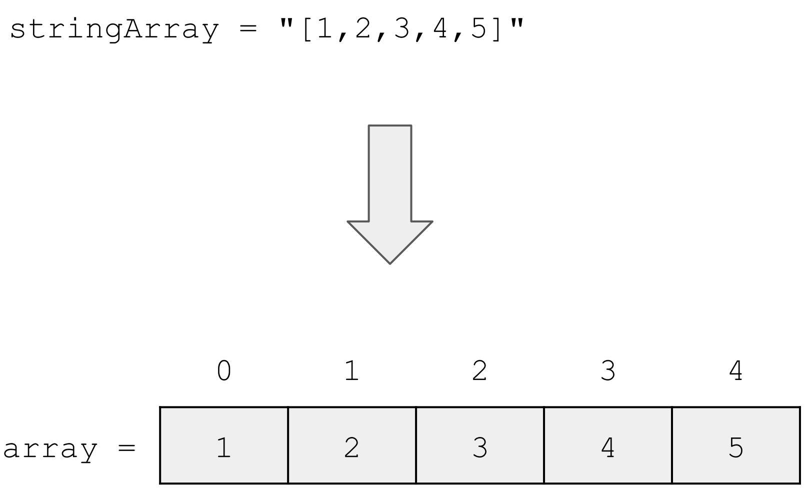
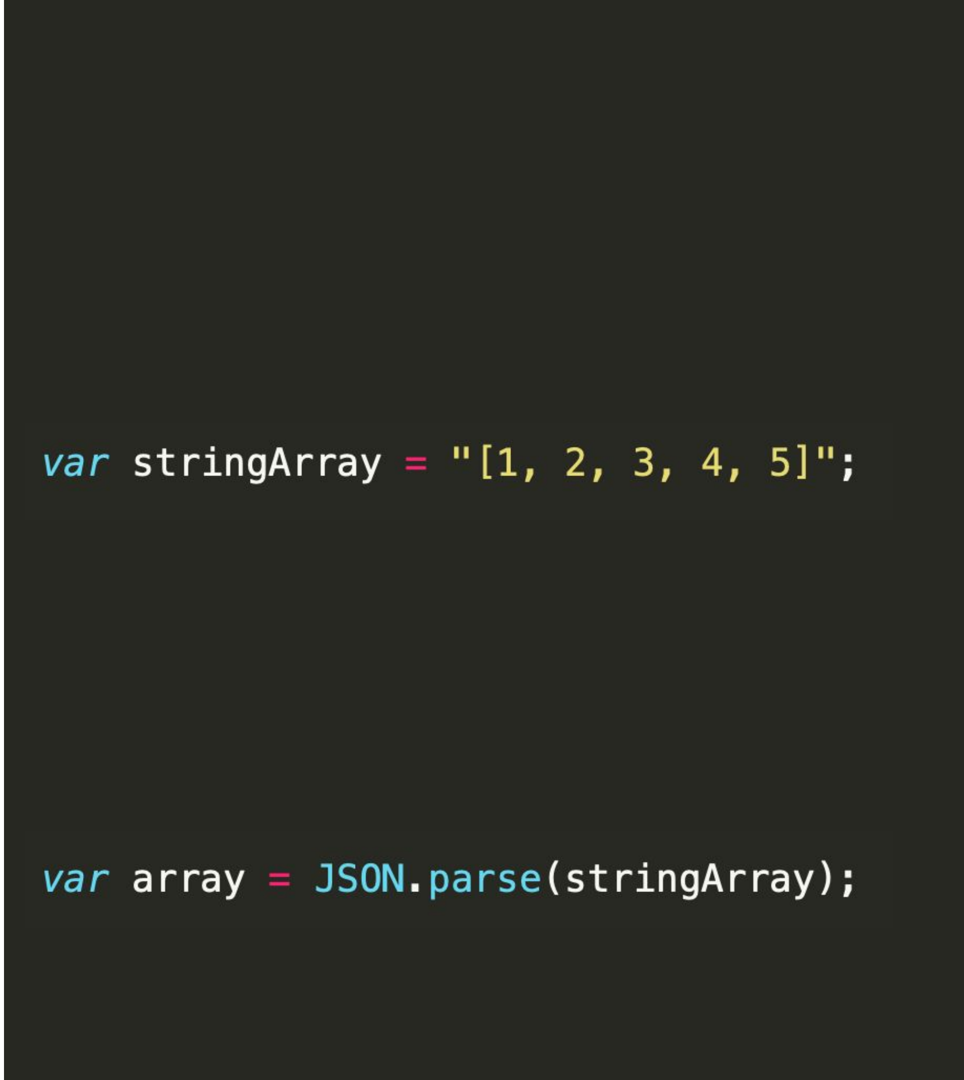
JSON.parse()

Converts string-formatted arrays or objects to actual arrays or objects.



```
stringArray = "[1,2,3,4,5]"
```

	0	1	2	3	4
array =	1	2	3	4	5



```
var stringArray = "[1, 2, 3, 4, 5]";



var array = JSON.parse(stringArray);
```

JSON.parse()

'{"name":"Tommy Trojan","phone":{"cell":"123-123-1234","home":"456-456-4567"}}'

<table>
<tr><th>Key</th><th>Value</th></tr>
<tr><td>name</td><td>Tommy</td></tr>
<tr><td>phone</td><td><table><tr><th>Key</th><th>Value</th></tr><tr><td>cell</td><td>123-456-7890</td></tr><tr><td>home</td><td>321-654-0987</td></tr></table></td></tr>
</table>

```
var stringPerson = '{"name":"Tommy Trojan","phone":
{"cell":"123-123-1234","home":"456-456-4567"}}';
```

```
var person = JSON.parse(stringPerson);
```