Cheerio tutorial

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Cheerio tutorial shows how to do web scraping in JavaScript with Cheerio module. Cheerio implements the core of jQuery designed for the server.

Cheerio

Cheerio is a fast, flexible, and lean implementation of core jQuery designed specifically for the server.

It parses markup and provides an API for traversing/manipulating the resulting data structure. I

Cheerio selectors

In Cherrion, we use selectors to select tags of an HTML document. The selector syntax was borrowed from jQuery.

The following is a partial list of available selectors:

- $("*") — selects all elements

- $("h2, div, p") — selects all `<h2>, <div>, <p>` elements
- $("li:first") — selects the first `<li>` element
- $("li:last") — selects the last `<li>` element
- $("li:even") — selects all even `<li>` elements
- $("li:odd") — selects all odd `<li>` elements
- $(":empty") — selects all elements that are empty
- $(":focus") — selects the element that currently has focus

Installing Cheerio and Node fetch

We install cheerio and node-fetch modules. Node Fetch is a package to create requests in JavaScript.

```
$ nodejs -v
v18.2.0
```

We use Node version 18.2.0.

```
$ npm i cheerio
$ npm i node-fetch
```

We install `cheerio` and `node-fetch` packages.

Cheerio title

In the first example, we get the title of the document.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://webcode.me';

const response = await fetch(url);
const body = await response.text();

let $ = load(body);

let title = $('title');
console.log(title.text());
```

The example retrieves the title of an HTML document.

We include `cheerio` and `node-fetch` modules.

```
const url = 'http://webcode.me';

const response = await fetch(url);
const body = await response.text();
```

We create a GET request to the web page. We get the response object and from the response object, we get its body.

```
let $ = cheerio.load(body);
```

First, we load the HTML document. To mimic jQuery, we use the `$` variable.

```
let title = $('title');
```

The selector returns the `title` tag.

```
console.log(title.text());
```

With the `text` method, we get the text of the `title` tag.

```
$ node main.js
My html page
```

The example prints the title of the document.

Cheerio get parent element

The parent element is retrieved with `parent`.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://webcode.me';

const response = await fetch(url);
const body = await response.text();

let $ = load(body);

let title = $('title');
let parentEl = title.parent();
```

```
$ node main.js
head
```

Cheerio first & last element

The first element of a cheerio object can be found with `first`, the last element with `last`.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://webcode.me';

const response = await fetch(url);
const body = await response.text();

let $ = load(body);

let head = $('head');

let fel = head.children().first();
let lel = head.children().last();

console.log(fel.get(0).tagName);
console.log(lel.get(0).tagName);
```

The example prints the first and last element of the `main` tag.

```
let head = $('head');
```

We select the `head` tag.

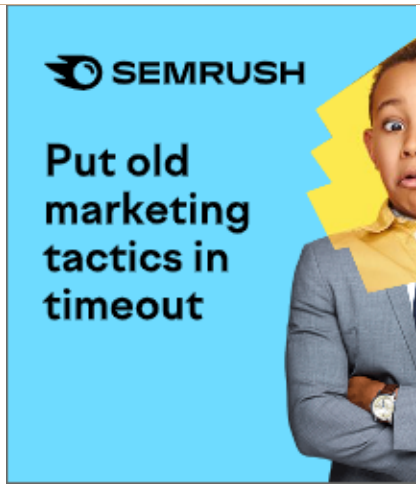
```
let fel = head.children().first();
let lel = head.children().last();
```

We get the first and the last element from the `main` children.

```
console.log(fel.get(0).tagName);
console.log(lel.get(0).tagName);
```

We find out the tag names.

```
$ node main.js
meta
title
```



Cheerio add element

The append method adds a new element at the end of the specified tag.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://webcode.me';

const response = await fetch(url);
const body = await response.text();

let $ = load(body);

let bodyEl = $('body');

bodyEl.append('<p>An old falcon</p>');

let content = $('body').html();
let items = content.split('\n');

items.forEach((e) => {
    console.log(e.trim());
});
```

In the example, we add a paragraph to the body tag and print it to the console.

```
bodyEl.append('<p>An old falcon</p>');
```

We append a new paragraph.

```
let content = $('body').html();
```

```
let items = content.split('\n');

items.forEach((e) => {
    console.log(e.trim());
});
```

We print the contents and strip some whitespace.

Cheerio insert after element

With `after`, we can insert an element after a tag.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://example.com'

const response = await fetch(url);
const body = await response.text();

let $ = load(body);

$('div').after('<footer>This is a footer</footer>')

console.log($.html());
```

In the example, we insert a `footer` element after the `div` element.

Cheerio loop over elements

With `each`, we can loop over elements.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://webcode.me/countries.html'

const response = await fetch(url);
const body = await response.text();

let $ = load(body);

$('tr').each((_, e) => {
```

The example loops over `tr` tags and prints the text of the elements.

```
$ node main.js
Id Name Population
1 China 1382050000
2 India 1313210000
3 USA 324666000
4 Indonesia 260581000
5 Brazil 207221000
6 Pakistan 196626000
...
```

Cherio get nth element

With the `nth-child` pseudo-class, we can select the nth element of a certain tag.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://webcode.me/countries.html'

const response = await fetch(url);
const body = await response.text();

let $ = load(body);

let el9 = $('tr:nth-child(9)');
let res = el9.text().trim();

console.log(res.replace(/(\s+)/g, ' '));
```

In the example, we select the ninth element of the list of most populated countries in the world.

```
$ node main.js
9 Russia 146838000
```

Cheerio get element attributes

Attributes can be retrieved with `attr` function.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://webcode.me';
```

```
let $ = load(body);

let lnEl = $('link');
let attrs = lnEl.attr();

console.log(attrs.rel);
console.log(attrs.href);
```

In the example, we get the `rel` and `href` attributes of the `link` tag.

```
$ node main.js
stylesheet
format.css
```

Cheerio filter elements

We can use `filter` to apply a filter on the elements.

main.js

```
import fetch from 'node-fetch';
import { load } from 'cheerio';

const url = 'http://webcode.me';

const response = await fetch(url);
const body = await response.text();

let $ = load(body);
let all = $('*');

let res = all.filter((i, e) => {

    return $(e).children().length === 2;
});

let items = res.get();

items.forEach(e => {
    console.log(e.name);
});
```

In the example, we find out all elements of the document that contain two children.

```
let all = $('*');
```

The * selector selects all elements.

```
let res = all.filter((i, e) => {
```

On the retrieved elements, we apply a filter. An element is included in the filtered list only if it contains exactly two children.

```
let items = res.get();

items.forEach(e => {
    console.log(e.name);
});
```

We go through the filtered list and print the names of the elements.

```
$ node main.js
html
body
```

In this article, we have done web scraping in JavaScript with the Cheerio library.

List all JavaScript tutorials.

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