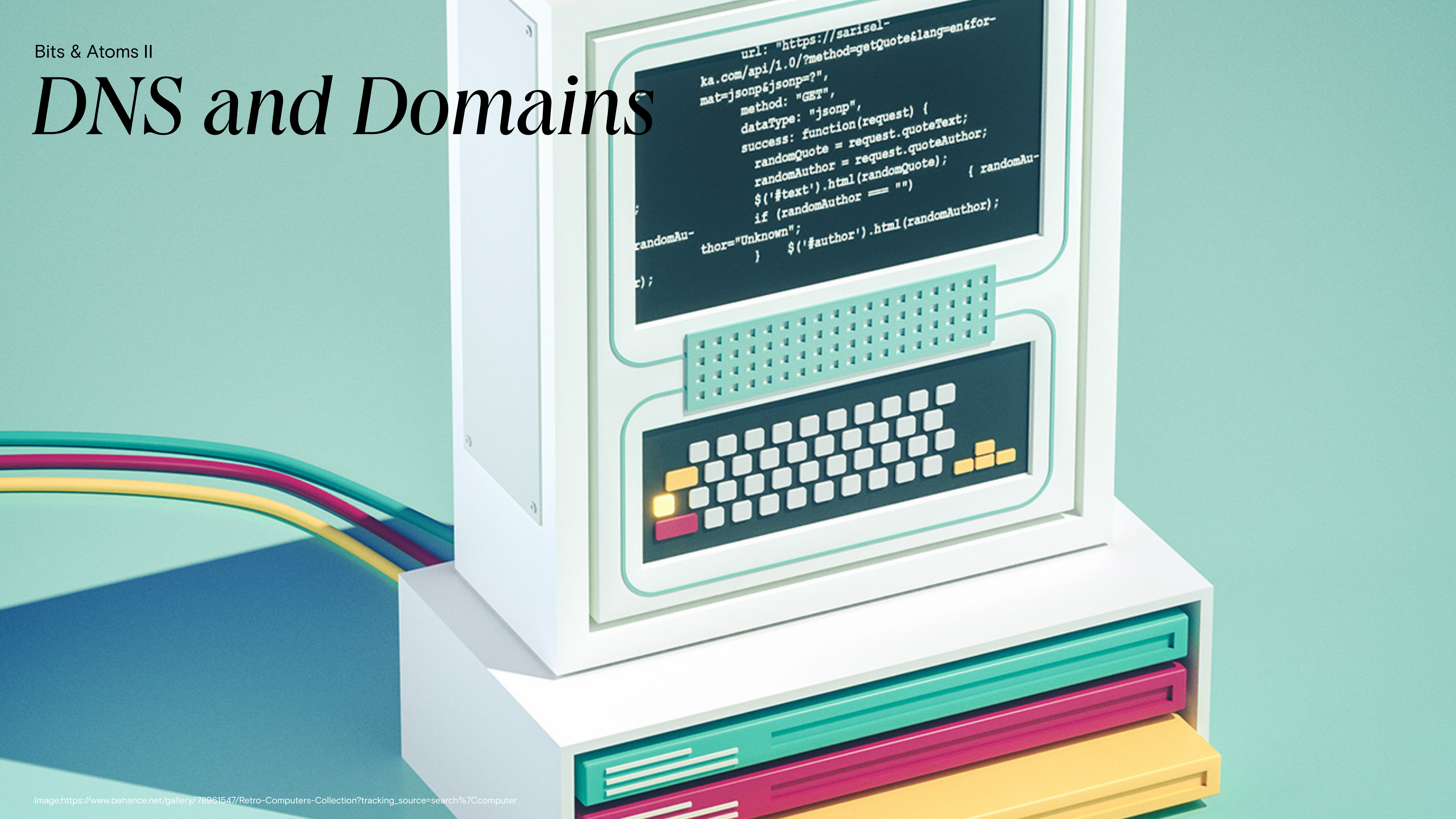


Bits & Atoms II

DNS and Domains



```
url: "https://sarisel-  
ka.com/api/1.0/?method=getQuote&lang=en&for-  
mat=jsonp&jsonp=?",  
method: "GET",  
dataType: "jsonp",  
success: function(request) {  
  randomQuote = request.quoteText;  
  randomAuthor = request.quoteAuthor;  
  $('#text').html(randomQuote);  
  if (randomAuthor == "") { randomAu-  
thor="Unknown";  
  } $('#author').html(randomAuthor);  
}
```

Domains

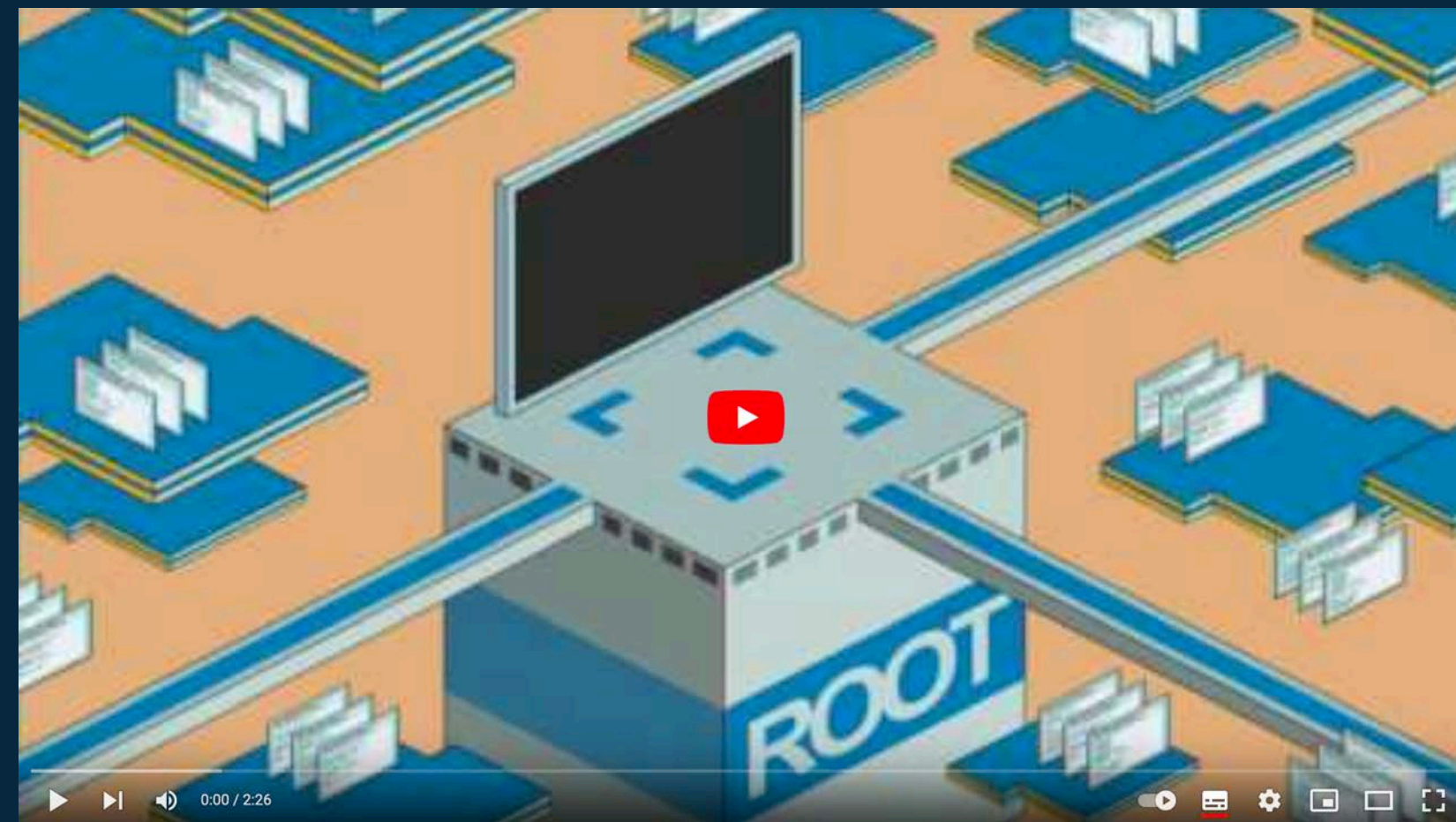
- google.com
- zhdk.ch
- wired.com
- kantonsrat.zh.ch
- ...

Domain Name System (DNS)

- google.com → 173.194.40.40
- localhost → 127.0.0.1
- zhdk.ch → 195.176.247.141

Bits & Atoms II

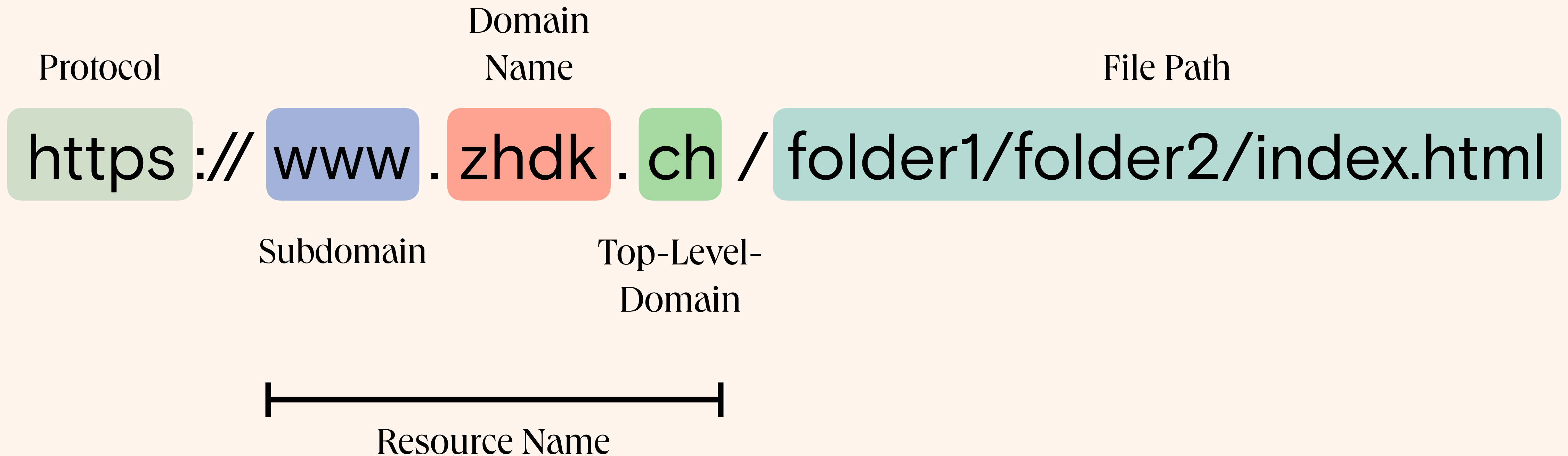
DNS



Top-Level-Domains



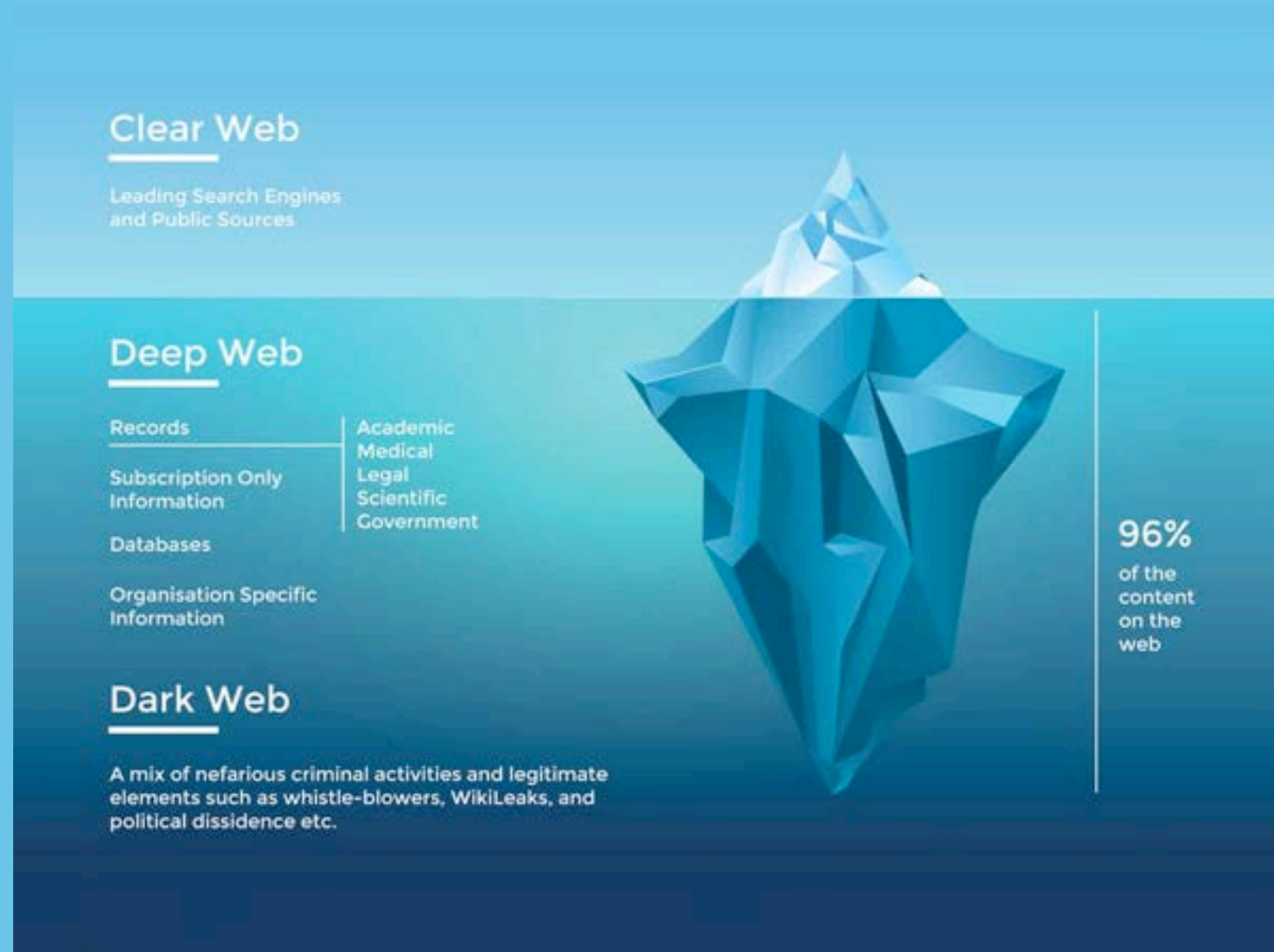
Uniform Resource Locator (URL)



Uniform Resource Locator (URL)

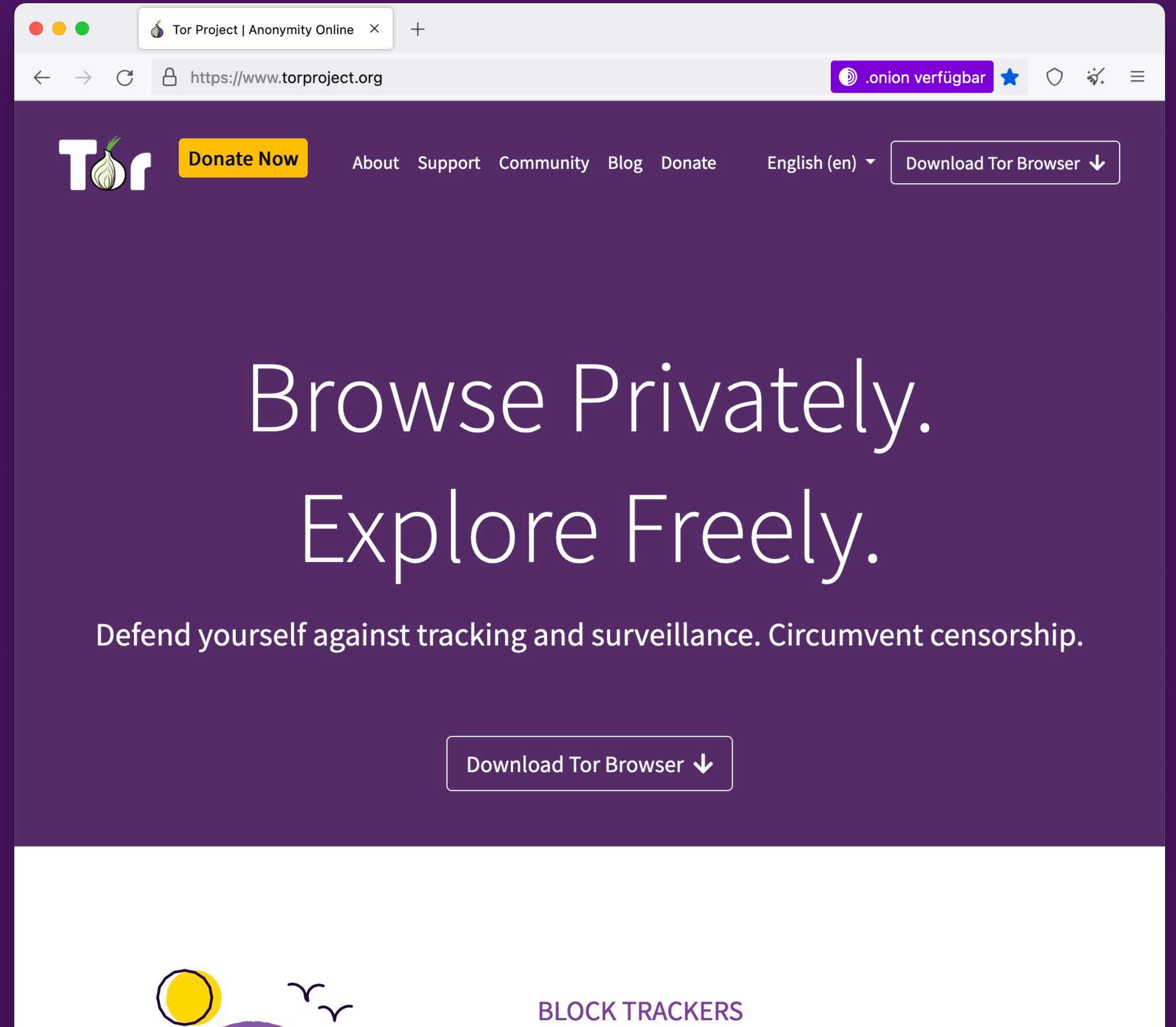
- <http://my-domain.to/path/to/my/file.zip>
- <https://www.chess.com/puzzles/rated>
- <https://www.google.ch/maps/place/Tonhalle-Orch...>
- <https://www.youtube.com/watch?v=2ZUxoi7YNgs>

The Web



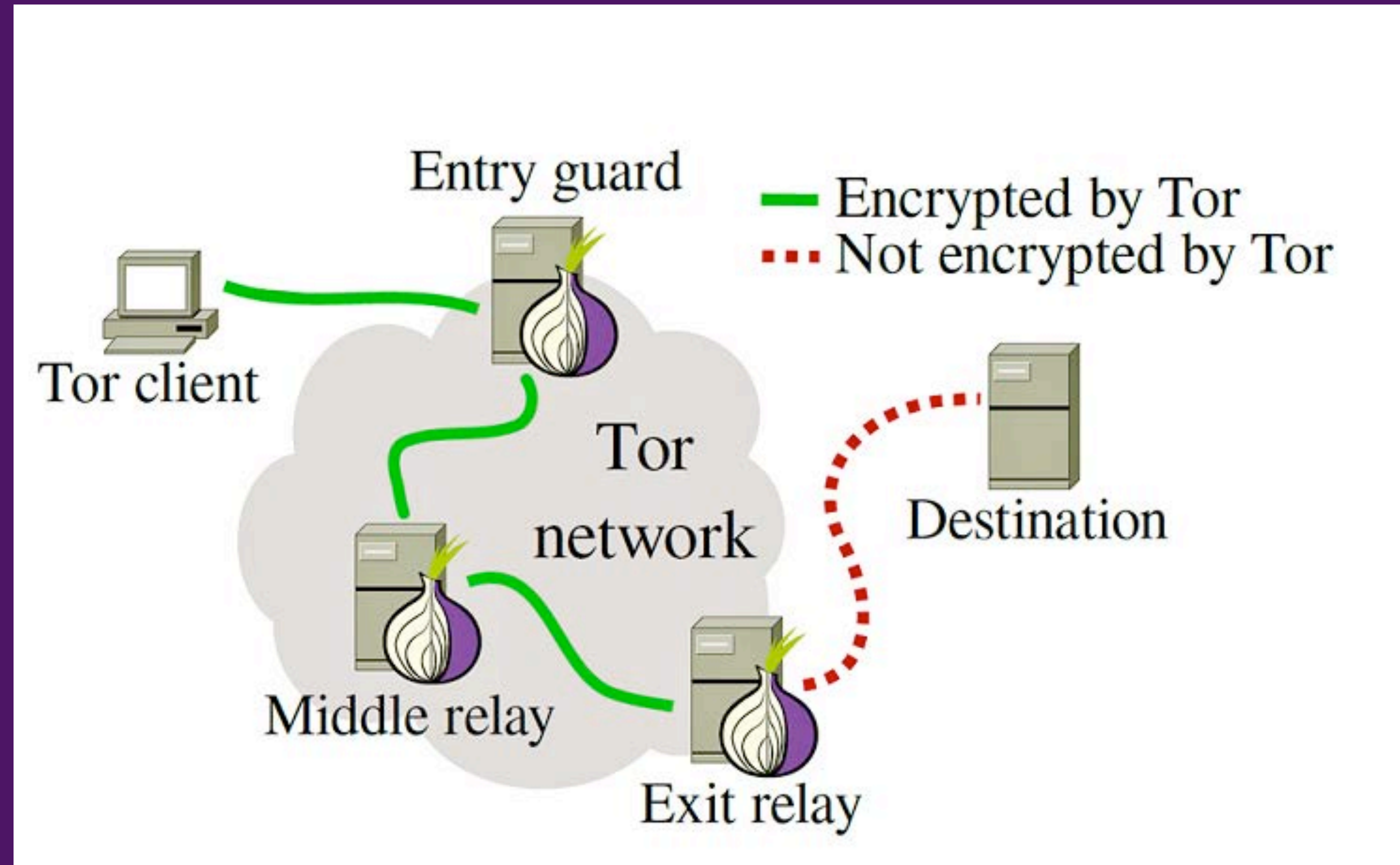
Tor Browser (The Onion Router)

- Routes traffic through anonymous Tor network
- Allows access to *.onion* websites
- Resist *fingerprinting*



Tor Browser (The Onion Router)

- Each relay (= Tor node) decrypts the next “onion layer” to reveal only the next relay
- Some VPN Services offer to reroute traffic through Tor



 CH#18-TOR   **CONNECTED**

.onion

- 56 mostly random letters and numbers characters
- e.g. DuckDuckGo hidden service:
<http://3g2upl4pq6kufc4m.onion/>
- On server in Tor network (only accessible with Tor-browser)
- No spying possible on Tor exit node

Languages

- HTML 5
- CSS
- JavaScript
- PHP
- Go
- Xml
- ...

HTML (Hypertext Markup Language)



```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <meta charset="UTF-8">
5    <meta http-equiv="X-UA-Compatible" content="IE=edge">
6    <meta name="viewport" content="width=device-width, initial-scale=1.0">
7    <title>Document</title>
8  </head>
9  <body>
10   An HTML document.
11 </body>
12 </html>
```

CSS (*Cascading Style Sheet*)



```
1
2  html {
3    font-family: var(--sans-font);
4    scroll-behavior: smooth;
5  }
6
7  body {
8    color: var(--text);
9    background: var(--bg);
10   font-size: 1.15rem;
11   line-height: 1.5;
12   display: grid;
13   grid-template-columns:
14     1fr min(45rem, 90%) 1fr;
15   margin: 0;
16 }
17
18 body > * {
19   grid-column: 2;
20 }
21
22 body > header {
```

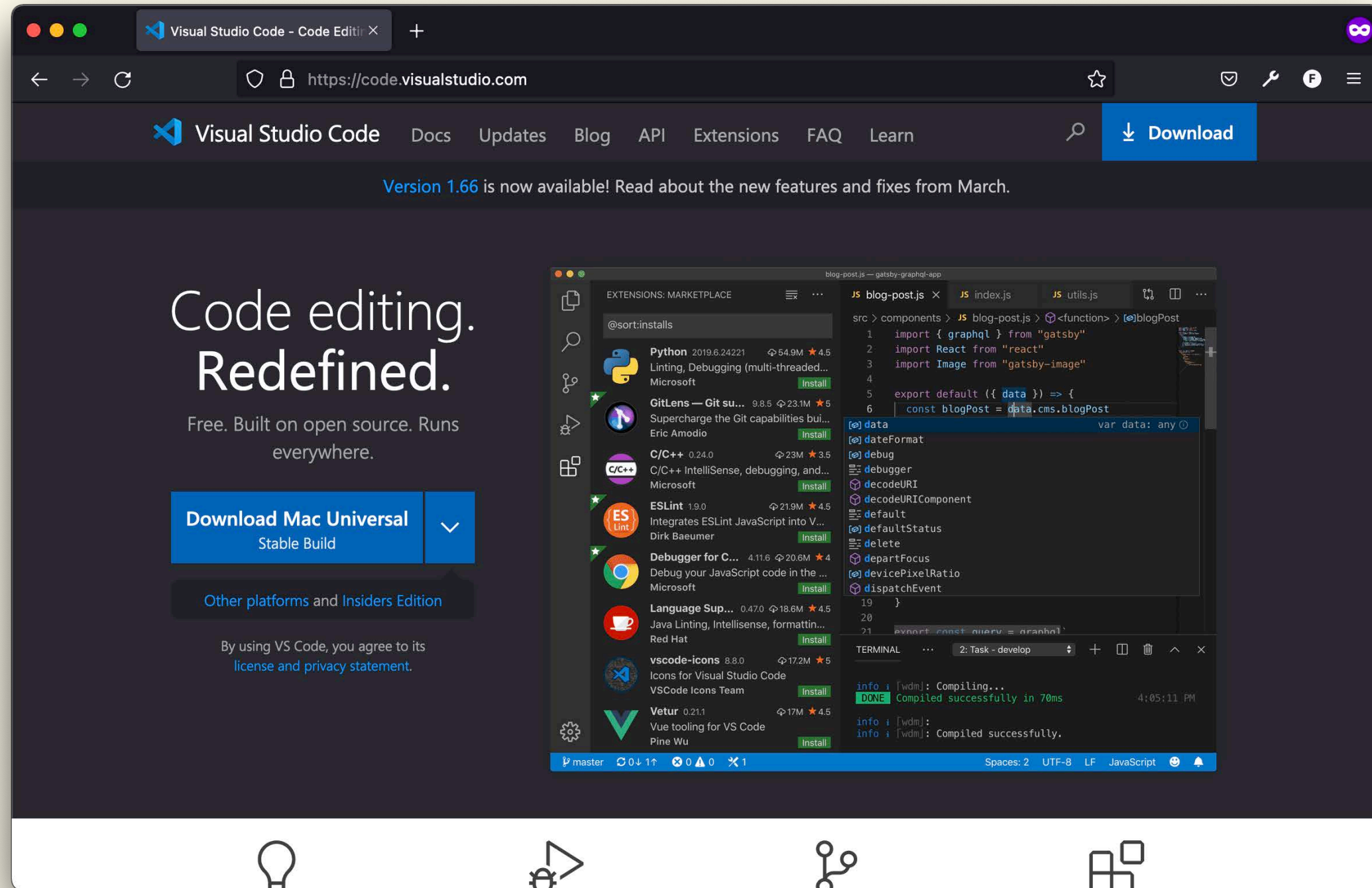
JavaScript

```
1 function registerPartials(directory, type, component) {
2   var files = fs.readdirSync(directory);
3
4   files.forEach(function (file) {
5     var nextComponent = component;
6     if (file == 'atoms' || file == 'molecules' || file == 'organisms') {
7       type = file;
8     } else if (!file.includes('.') && file != 'views') {
9       nextComponent = file;
10    }
11
12    if (fs.statSync(directory + '/' + file).isDirectory()) {
13      registerPartials(directory + '/' + file, type, nextComponent);
14    } else {
15      var matches = /^(^[^.]*)\.hbs$/\.exec(file);
16      if (matches) {
17        var name = `views/${type}/${component}/${matches[1]}`;
18        var template = fs.readFileSync(directory + '/' + file, 'utf8');
19        hbs.registerPartial(name, template);
20      }
21    }
22  });
23 }
```

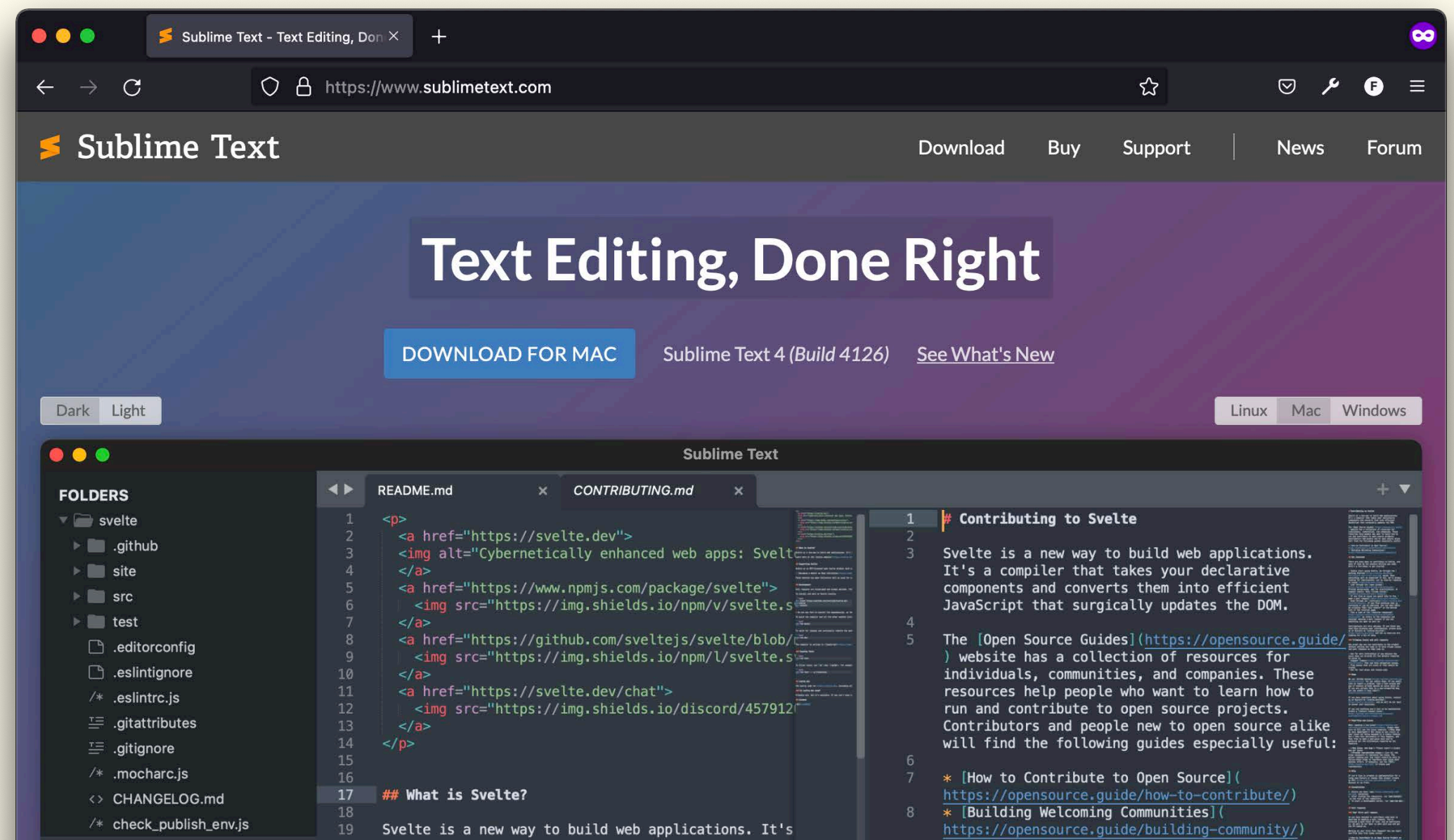
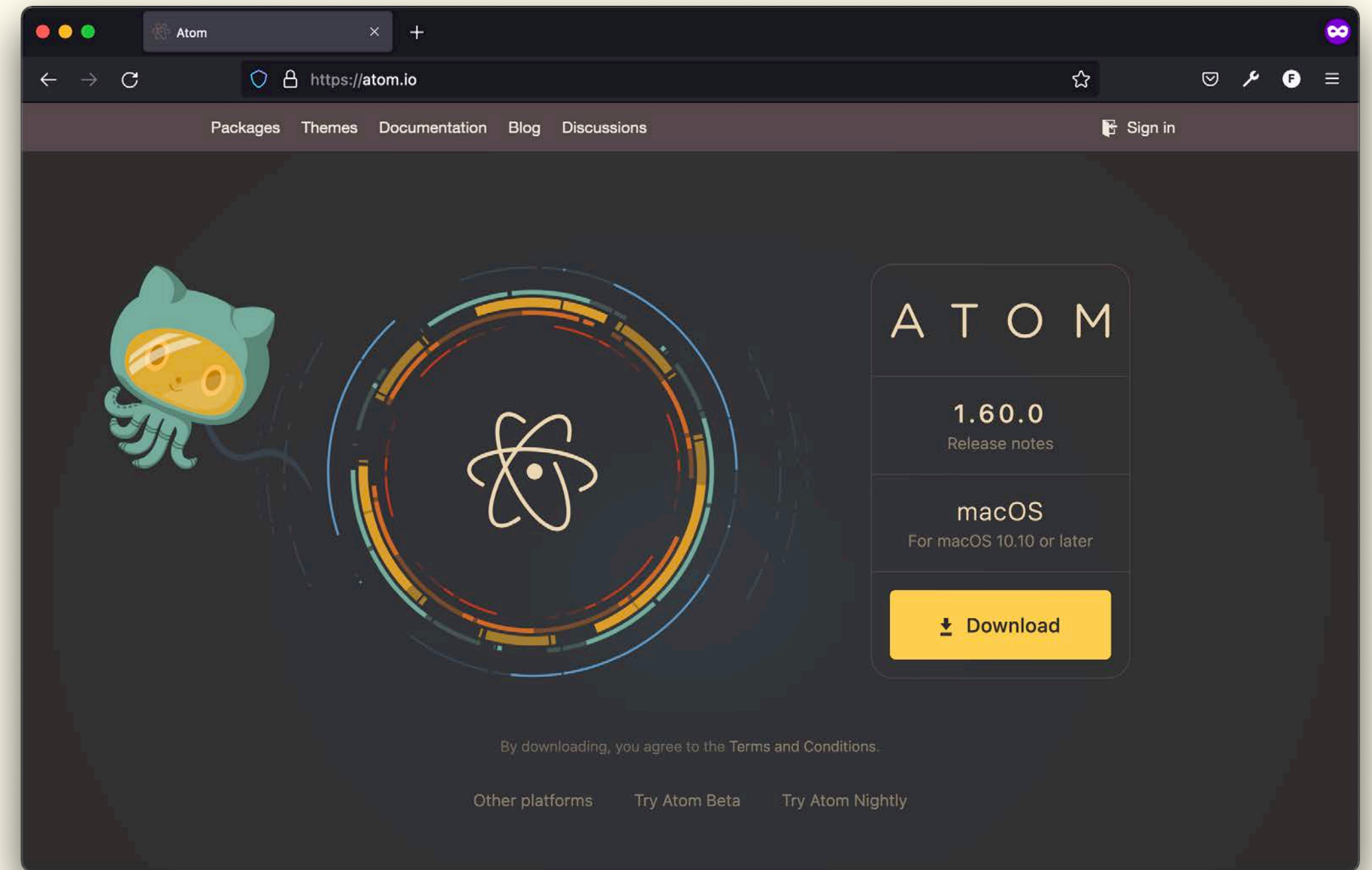
Tools

- Code-Editor (VS Code, Atom etc.)
- Browser (Firefox, Chrome, Safari, etc....)
- Developer Tools
- Git Version Control (Github, Gitlab, Bitbucket...)
- Forums and Web-Resources (Stackoverflow, Mozilla Dev Network, W3C etc.)

Code-Editor



<https://code.visualstudio.com/>



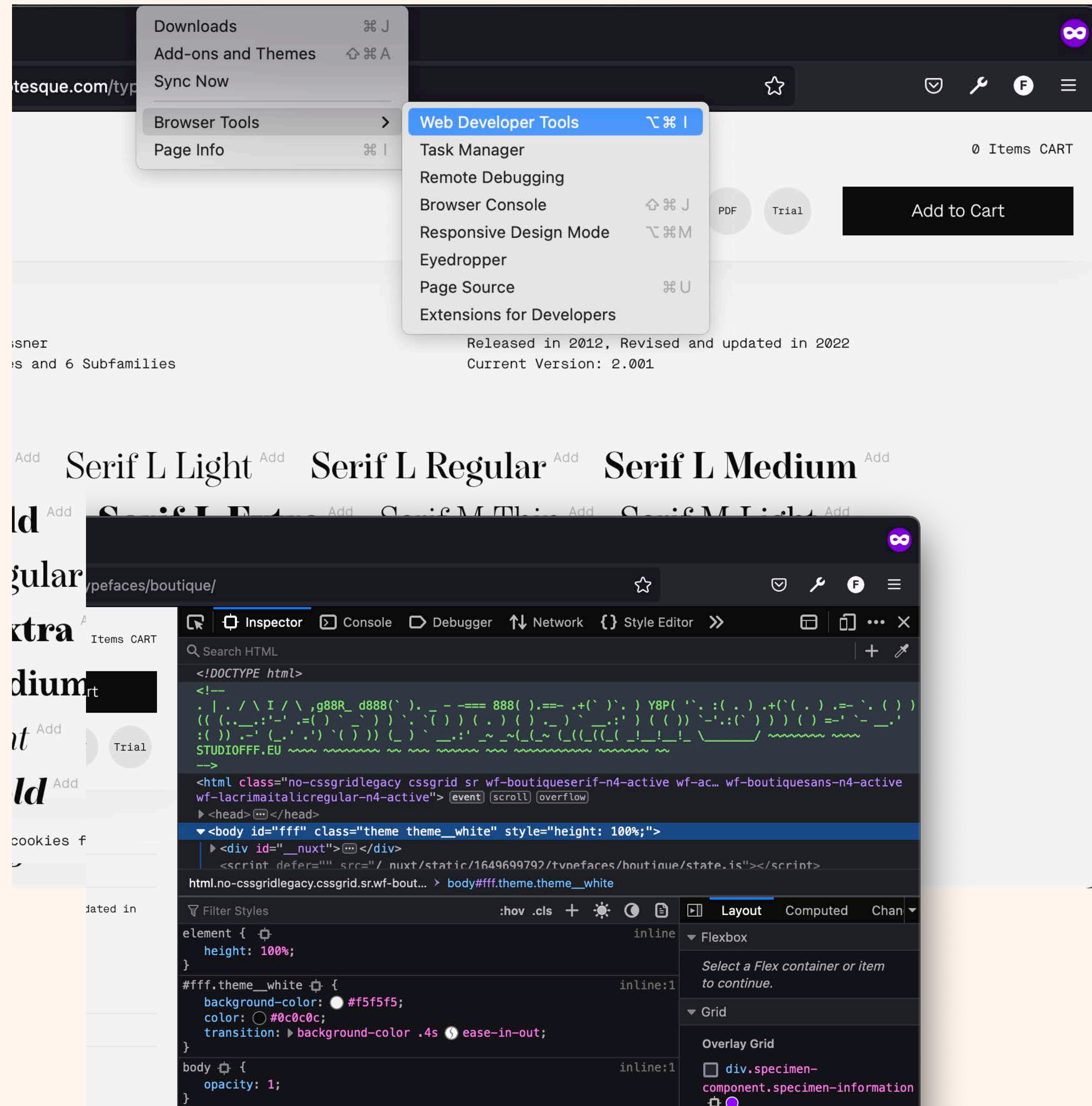
Developer Tools

Every browser is a bit different. Look for terms like «Inspector», «Web Developer Tools» or «Console».

Shortcut:

Mac: *Option + Command + I*

Windows: *F12*





The screenshot shows the GitHub homepage in a browser window. The browser's address bar displays 'https://github.com'. The navigation menu includes 'Product', 'Team', 'Enterprise', 'Explore', 'Marketplace', and 'Pricing'. A search bar and 'Sign in'/'Sign up' buttons are visible. The main content area features the headline 'Where the world builds software' and a sub-headline: 'Millions of developers and companies build, ship, and maintain their software on GitHub—the largest and most advanced development platform in the world.' Below this is a sign-up form with an 'Email address' input field and a green 'Sign up for GitHub' button. A large, stylized globe with glowing data points and a small astronaut character are part of the background illustration. At the bottom, four statistics are listed: '73+ million Developers', '4+ million Organizations', '200+ million Repositories', and '84% Fortune 100'.

Where the world builds software

Millions of developers and companies build, ship, and maintain their software on GitHub—the largest and most advanced development platform in the world.

73+ million
Developers

4+ million
Organizations

200+ million
Repositories

84%
Fortune 100

Help

- stackoverflow.com
- [Mozilla Dev Network](https://developer.mozilla.org/)
- caniuse.com
- GitHub issues
- Search engines
- [Validation W3C](https://validator.w3.org/)
- Framework/Library Documentations
 - e.g.: [nuxt.js](https://nuxt.com/)
 - e.g.: [lodash](https://lodash.com/)

Hands-On

- Download code editor
- Open dev tools in browser of your choice
- Create your first *.html* file.

Tags and Attributes

Tag

```
<html>...</html>
```

Opening tag

Class attribute

Closing tag

```
<p data-attribute="content" class="paragraph">...</p>
```

Attribute

Bits & Atoms II

index.html



```
1 <html>
2   <head>
3     <title>Bits and Atoms II</title>
4   </head>
5
6   <body>
7     Hello
8   </body>
9 </html>
```

index.html

Selection of important tags:

<p>

<h1> - <h6>

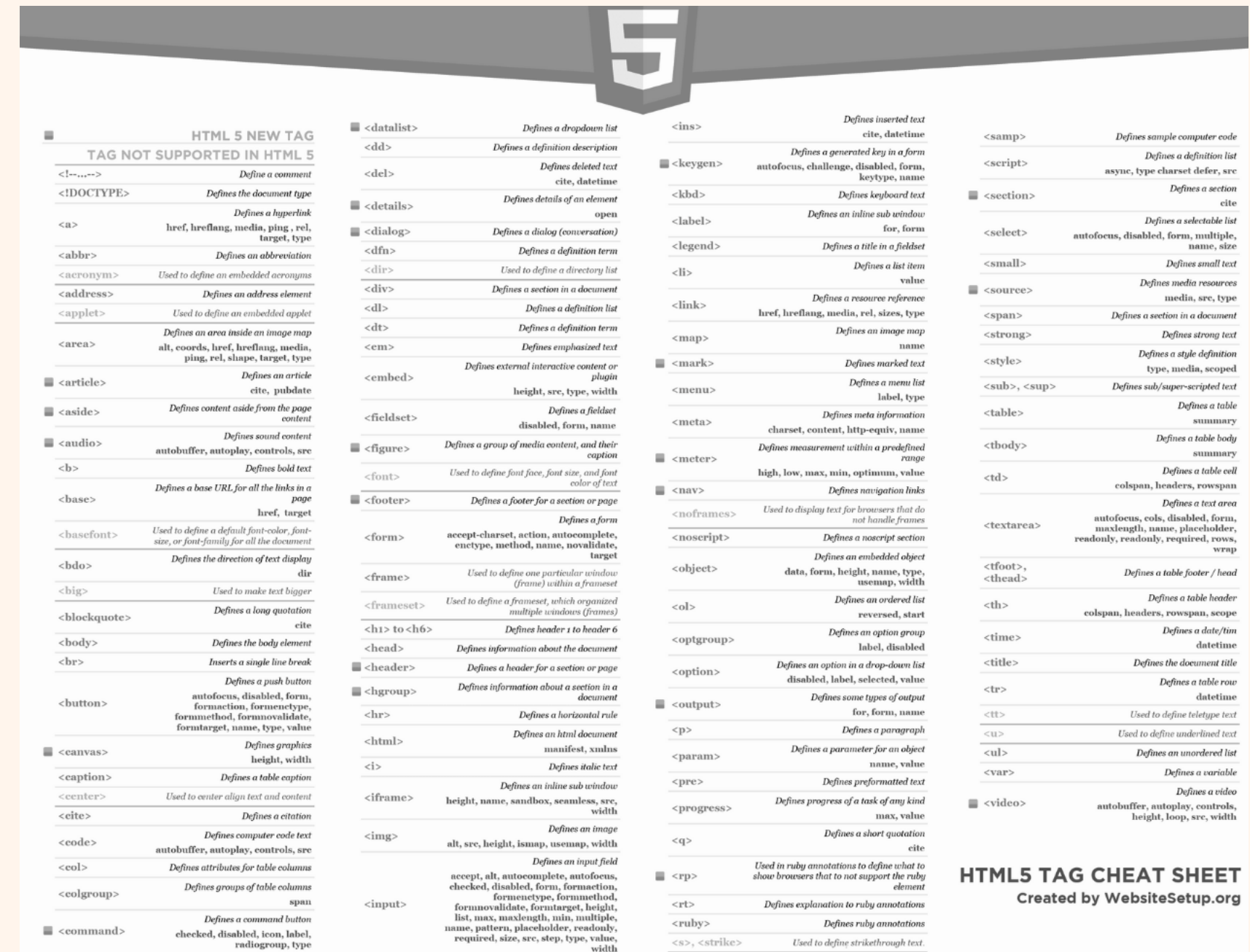
<a>

 /

<input>

<table>

<div>



<https://websitesetup.org/wp-content/uploads/2014/09/html5-cheat-sheet.png>