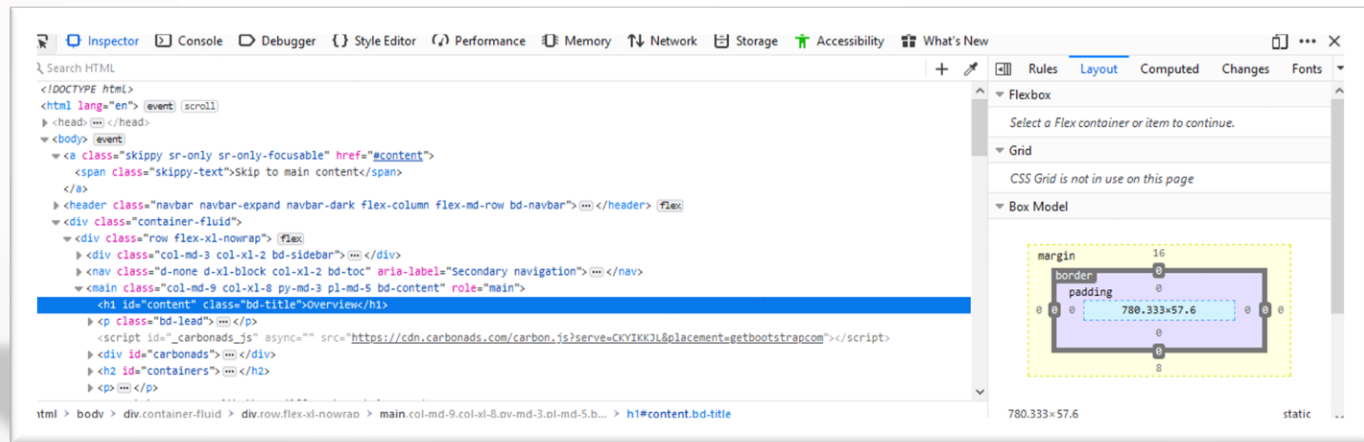




# Web Programming

**Lecturer:** Ung Văn Giàu  
**Email:** [giau.ung@eiu.edu.vn](mailto:giau.ung@eiu.edu.vn)



# Web Developer Tools

Chrome DevTools  
Firefox Developer Tools

# Web Developer Tools

- A set of web developer tools built into browsers
  - Firefox Developer Tools
  - Chrome DevTools
- Can help you edit pages on-the-fly and **diagnose problems quickly**
  - debugging CSS,
  - prototyping CSS,
  - debugging JavaScript,
  - and analyzing load performance
  - ...

# How to open

There are three ways to open:

- Keyboard:
  - Ctrl + Shift + I
  - F12
- Menu bar
- Context menu

**Right-click** an item on a webpage, and choose **Inspect Element** from the context menu

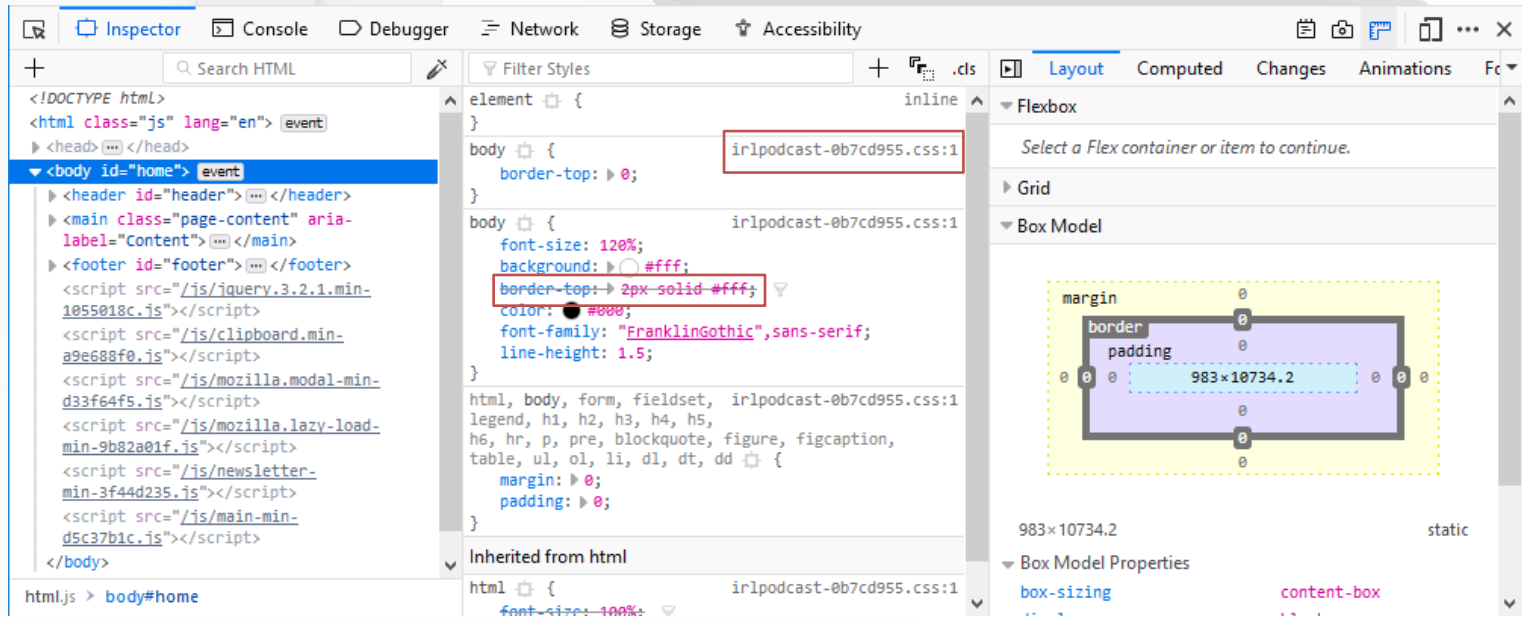
# The Core Tools

- Page Inspector
- Web console
- JavaScript Debugger
- Performance Tools
- Responsive Design Mode
- Accessibility inspector



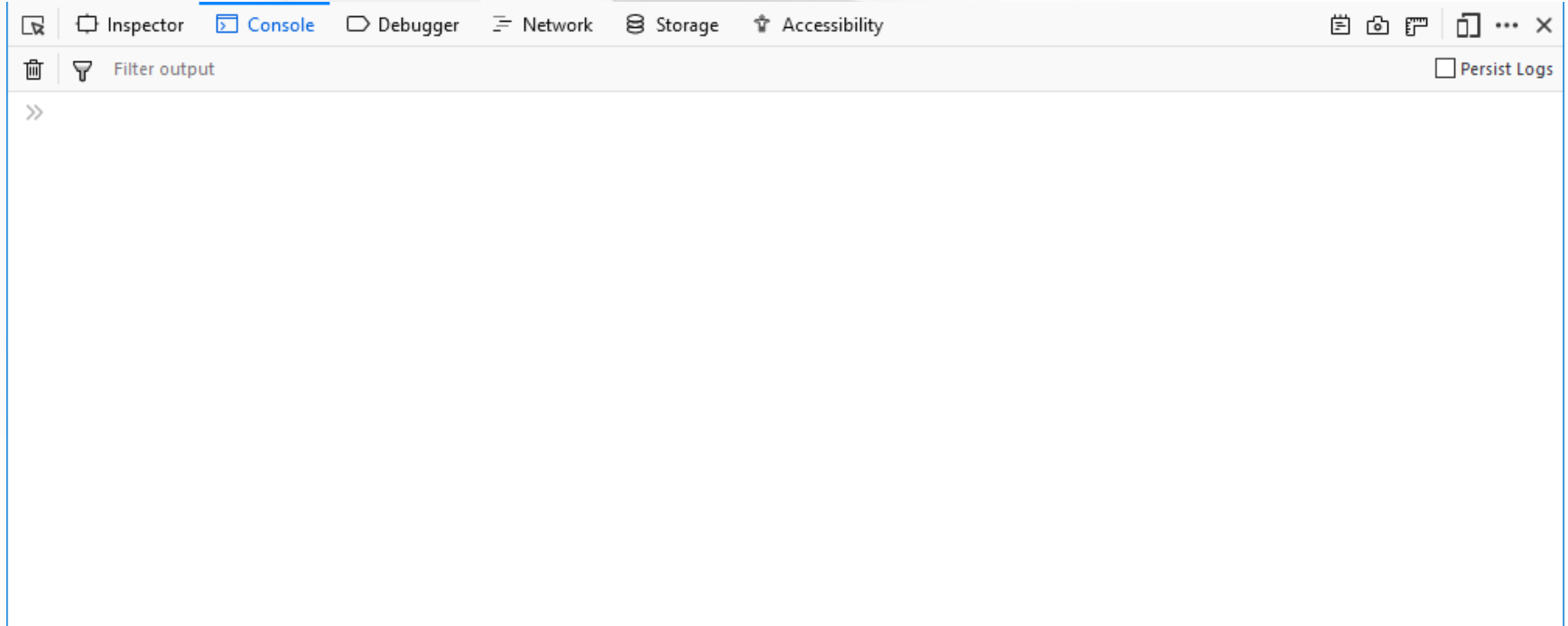
# Page Inspector

- View and edit page content and layout
- Visualize many aspects of the page including the box model, animations, and grid layouts



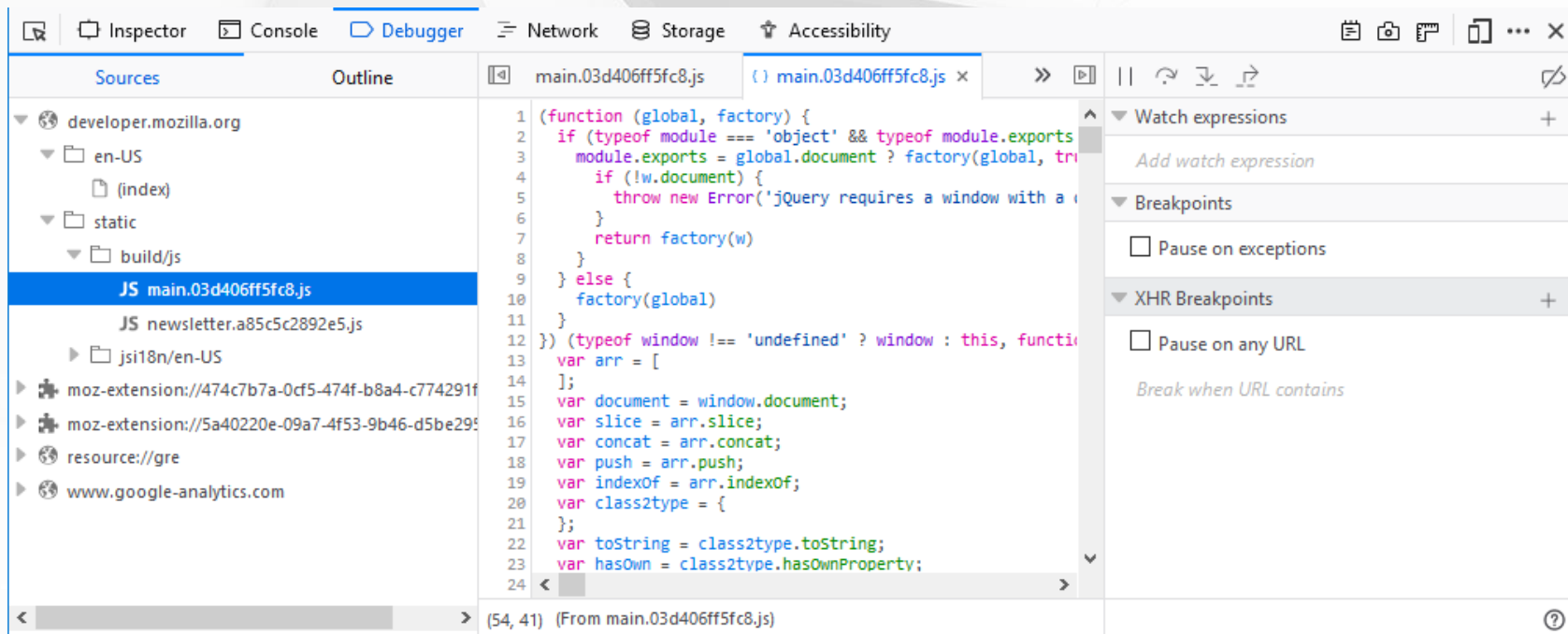
# Web Console

**See messages** logged by a web page and **interact** with the page **using JavaScript**



# JavaScript Debugger

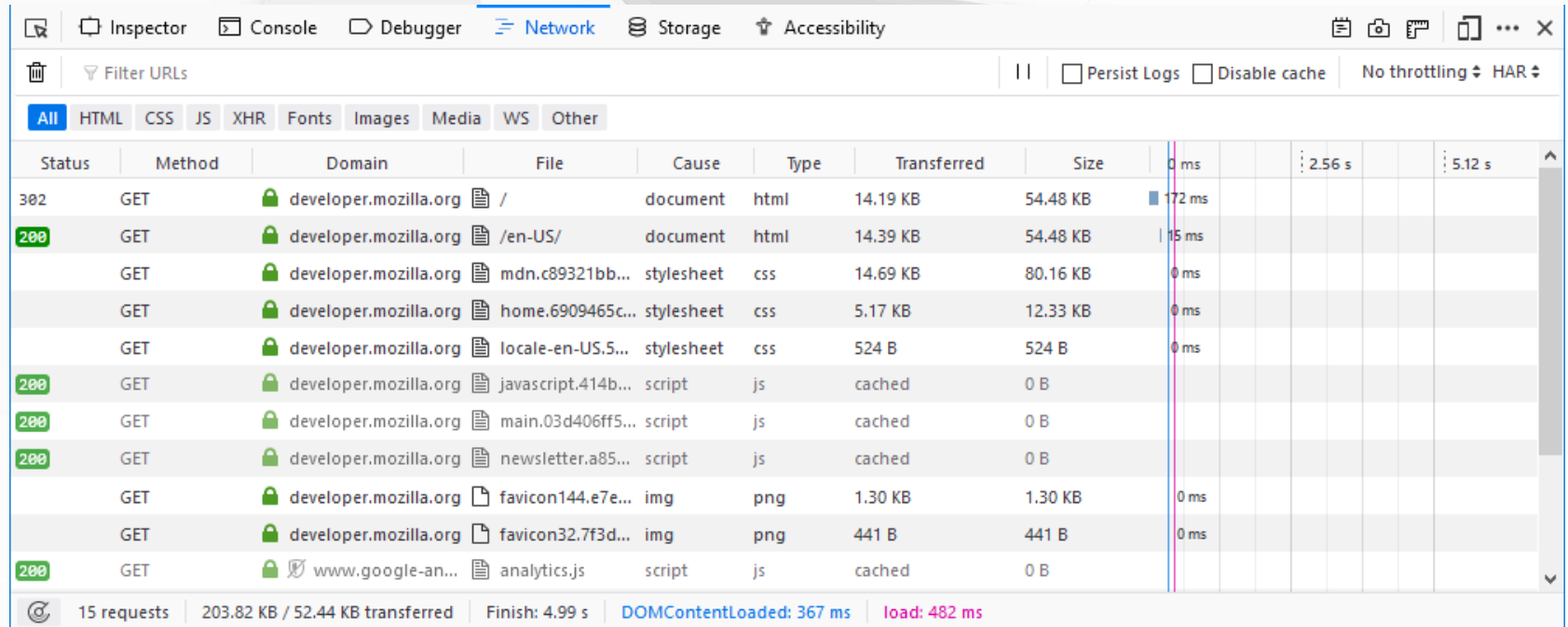
Stop, step through, examine, and modify the JavaScript running in a page





# Network Monitor

See the network requests made when a page is loaded



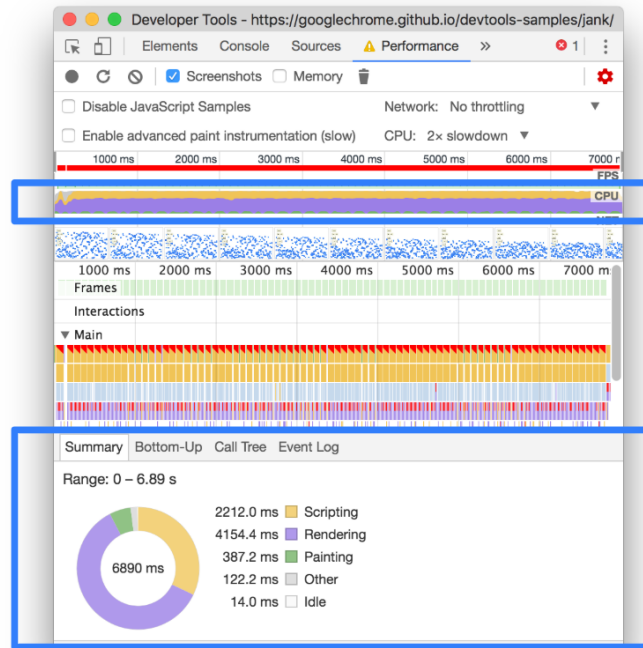
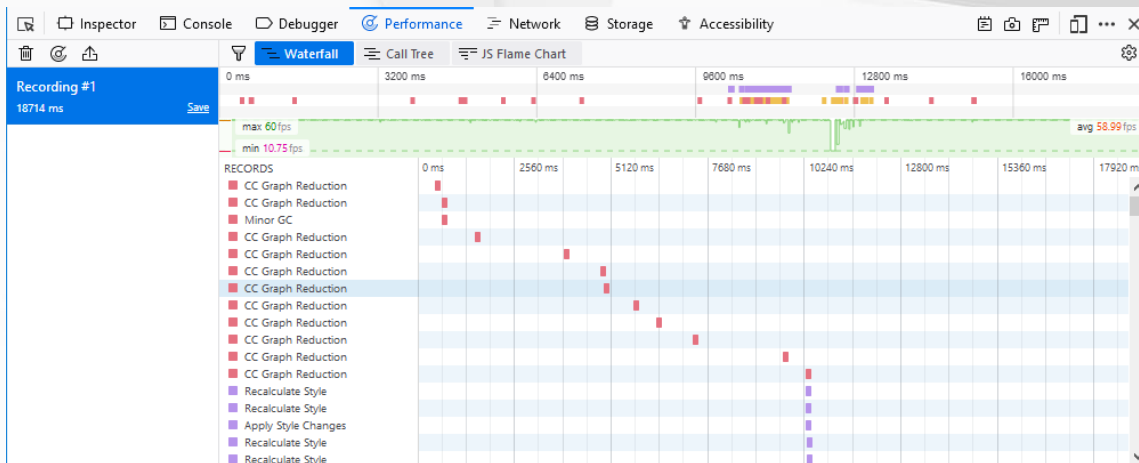
The screenshot shows the Chrome DevTools Network Monitor interface. The top bar includes tabs for Inspector, Console, Debugger, Network (selected), Storage, and Accessibility. Below the tabs is a search bar labeled 'Filter URLs' and a toolbar with buttons for 'Persist Logs', 'Disable cache', 'No throttling', and 'HAR'. A row of filters (All, HTML, CSS, JS, XHR, Fonts, Images, Media, WS, Other) is visible. The main area displays a table of network requests. The table has columns for Status, Method, Domain, File, Cause, Type, Transferred, Size, and Time. The first request is a 302 GET to developer.mozilla.org. The second request is a 200 GET to developer.mozilla.org. The third request is a 200 GET to developer.mozilla.org. The fourth request is a 200 GET to developer.mozilla.org. The fifth request is a 200 GET to developer.mozilla.org. The sixth request is a 200 GET to developer.mozilla.org. The seventh request is a 200 GET to developer.mozilla.org. The eighth request is a 200 GET to developer.mozilla.org. The ninth request is a 200 GET to developer.mozilla.org. The tenth request is a 200 GET to developer.mozilla.org. The eleventh request is a 200 GET to developer.mozilla.org. The twelfth request is a 200 GET to developer.mozilla.org. The thirteenth request is a 200 GET to developer.mozilla.org. The fourteenth request is a 200 GET to developer.mozilla.org. The fifteenth request is a 200 GET to developer.mozilla.org. The sixteenth request is a 200 GET to developer.mozilla.org. The seventeenth request is a 200 GET to developer.mozilla.org. The eighteenth request is a 200 GET to developer.mozilla.org. The nineteenth request is a 200 GET to developer.mozilla.org. The twentieth request is a 200 GET to developer.mozilla.org. The bottom status bar shows '15 requests', '203.82 KB / 52.44 KB transferred', 'Finish: 4.99 s', 'DOMContentLoaded: 367 ms', and 'load: 482 ms'.

Status	Method	Domain	File	Cause	Type	Transferred	Size	Time
302	GET	developer.mozilla.org	/	document	html	14.19 KB	54.48 KB	172 ms
200	GET	developer.mozilla.org	/en-US/	document	html	14.39 KB	54.48 KB	15 ms
	GET	developer.mozilla.org	mdn.c89321bb...	stylesheet	css	14.69 KB	80.16 KB	0 ms
	GET	developer.mozilla.org	home.6909465c...	stylesheet	css	5.17 KB	12.33 KB	0 ms
	GET	developer.mozilla.org	locale-en-US.5...	stylesheet	css	524 B	524 B	0 ms
200	GET	developer.mozilla.org	javascript.414b...	script	js	cached	0 B	
200	GET	developer.mozilla.org	main.03d406ff5...	script	js	cached	0 B	
200	GET	developer.mozilla.org	newsletter.a85...	script	js	cached	0 B	
	GET	developer.mozilla.org	favicon144.e7e...	img	png	1.30 KB	1.30 KB	0 ms
	GET	developer.mozilla.org	favicon32.7f3d...	img	png	441 B	441 B	0 ms
200	GET	www.google-an...	analytics.js	script	js	cached	0 B	

15 requests | 203.82 KB / 52.44 KB transferred | Finish: 4.99 s | DOMContentLoaded: 367 ms | load: 482 ms

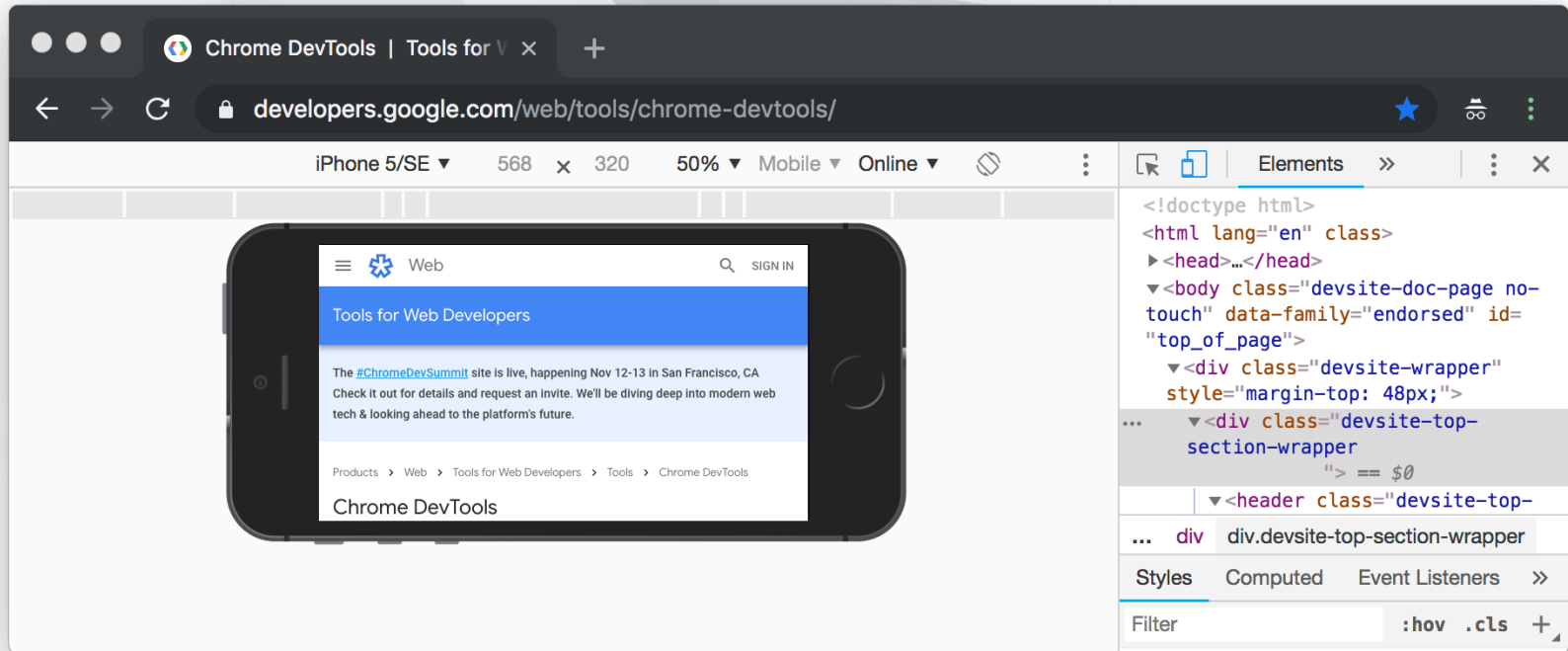
# Performance Tools

Analyze your site's general responsiveness, JavaScript, and layout performance



# Responsive Design Mode

See how your website or app will look and behave on different devices and network types



# Storage Inspector

Enables you to inspect various types of storage that a web page can use:

- **Cache Storage** — any DOM caches created using the Cache API
- **Cookies** — All the cookies created by the page or any iframes inside of the page.  
Cookies created as a part of response of network calls are also listed
- **Session Storage** — All session storage items created by the page or any iframes inside the page
- **IndexedDB**
- **Local Storage**

# Storage Inspector

**For complete beginners to the Web**

**Getting started with the Web**

*Getting started with the Web* is a concise series introducing you to the practicalities of web development. You'll set up the tools you need to construct a simple webpage and publish your own simple code.

**HTML Tutorials**

**Storage Tree**

Name	Domain	Path	Expires on	Last access
._ga	.mozilla.org	/	Tue, 23 Feb 2021 1...	Sun, 23 Ju
csrftoken	.developer...	/	Mon, 08 Jun 2020 ...	Sun, 23 Ju
csrftoken	developer...	/	Thu, 26 Mar 2020 0...	Sun, 23 Ju
dwt_sg_t...	developer...	/	...	Sun, 23 Ju
lux_uid	developer...	/	Sun, 23 Jun 2019 1...	Sun, 23 Ju

**Table Widget**

**Sidebar**

**Data**

.\_ga: "GA1.2.1812154749.1526560462"

CreationTime: "Thu, 17 May 2018 12:34:22 GMT"

Domain: ".mozilla.org"

Expires: "Tue, 17 May 2018 12:34:22 GMT"

HostOnly: false

HttpOnly: false

LastAccessed: "Sun, 23 Jun 2019 18:15:54 GMT"

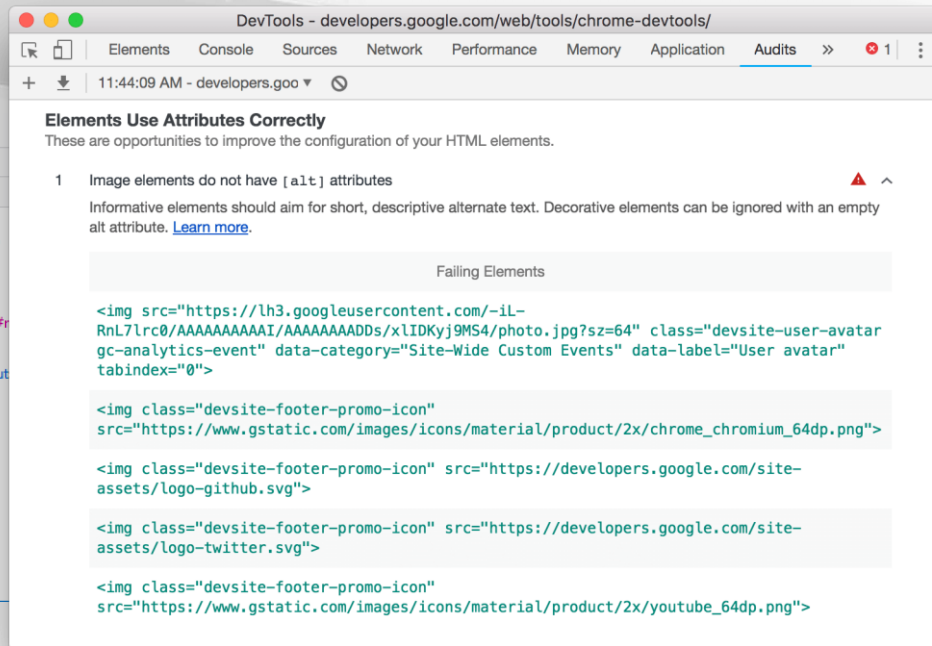
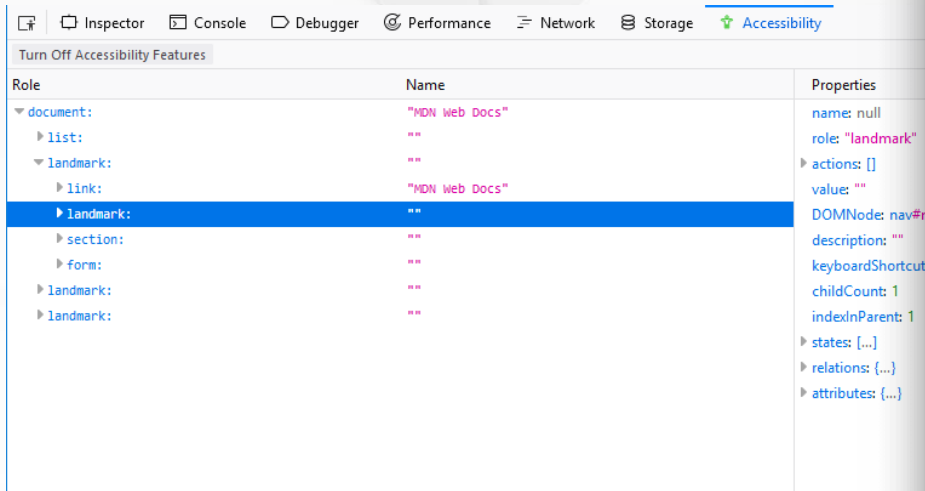
Path: "/"

Secure: false

sameSite: "Unset"

# Accessibility inspector

Provides a means to access the page's accessibility tree, allowing you to check what's missing or otherwise needs attention





# Summary



**Q&A**





# Web Programming

**Lecturer:** Ung Văn Giàu

**Email:** [giau.ung@eiu.edu.vn](mailto:giau.ung@eiu.edu.vn)