Elements of web design

Get into the nitty gritty with Lateral Nord

Lateral Nord.



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Product design consultant











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First things first

What is the web?

The web is an open platform for everyone

Open platform

Everything on the web...

- is open and public (source code and assets)
- can be manipulated by end-users
- can be manipulated by browsers
- can be manipulated by extensions
- can be linked and embedded on other services

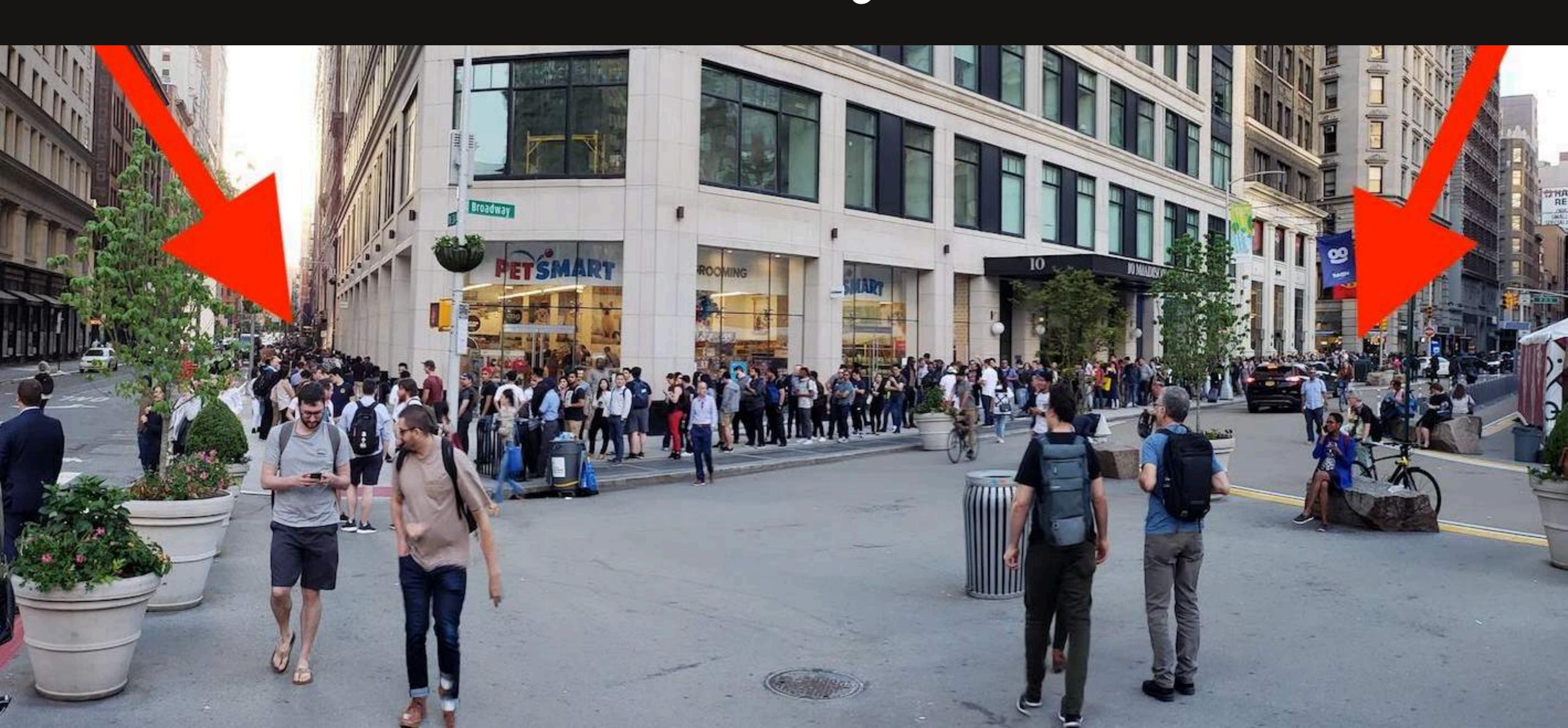
How designers see the user



How developers see the user



How users actually are





- 1. Device interaction
- 2. Layout model
- 3. Visuals
- 4. Elements
- 5. Auditing
- 6. Technical terminology

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Devices

- Phones
- Tablets
- Laptops
- Desktops
- Smart TVs

- Smart watches
- Screenreaders
- Outdoor displays

- E-readers
- Printers
- Gameconsoles
- Smart fridges

Screens

- Matte vs glossy
- High vs low-DPI
- OLED vs LCD
- E-ink
- SDR vs HDR
- Viewing angles
- Color reproduction



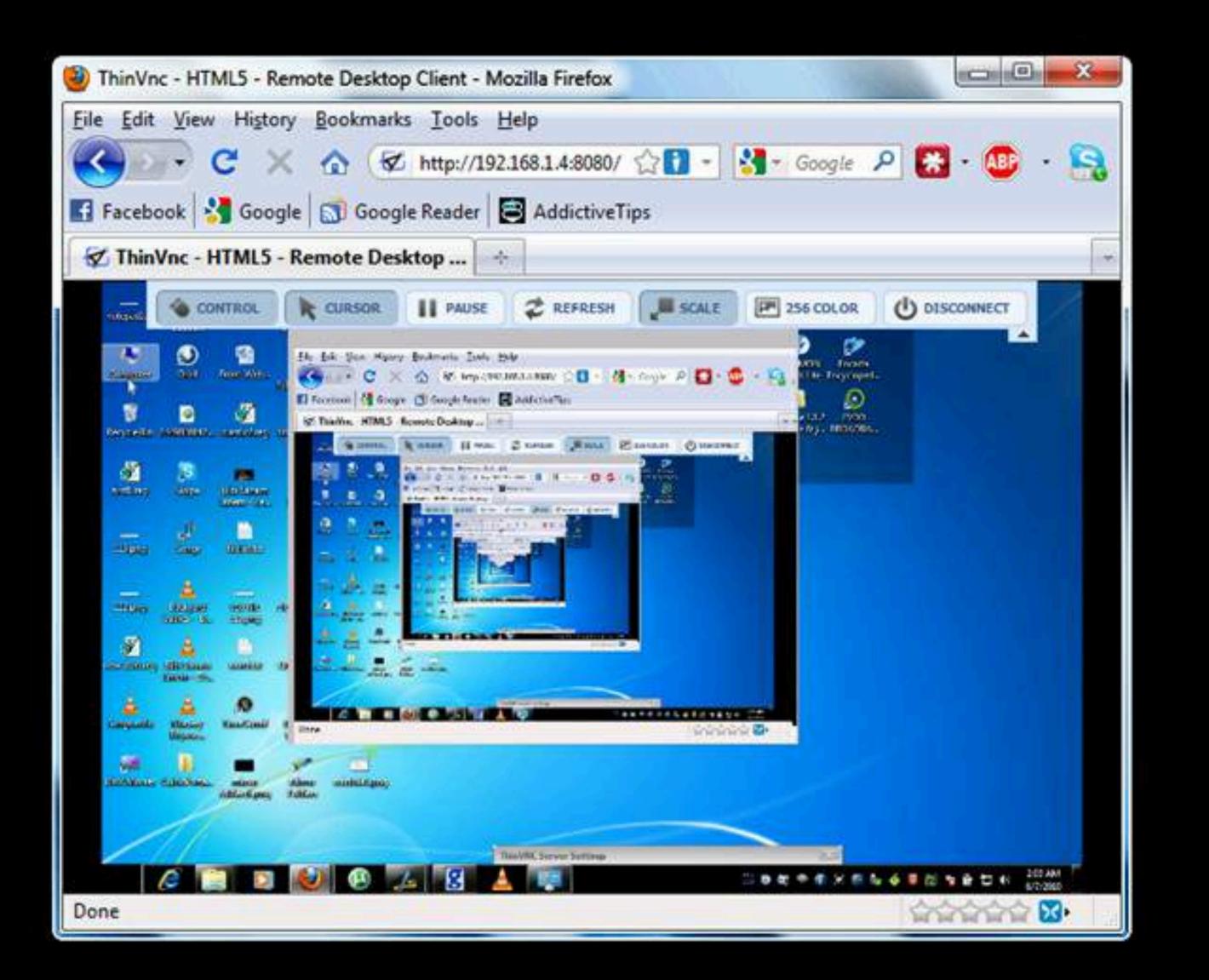


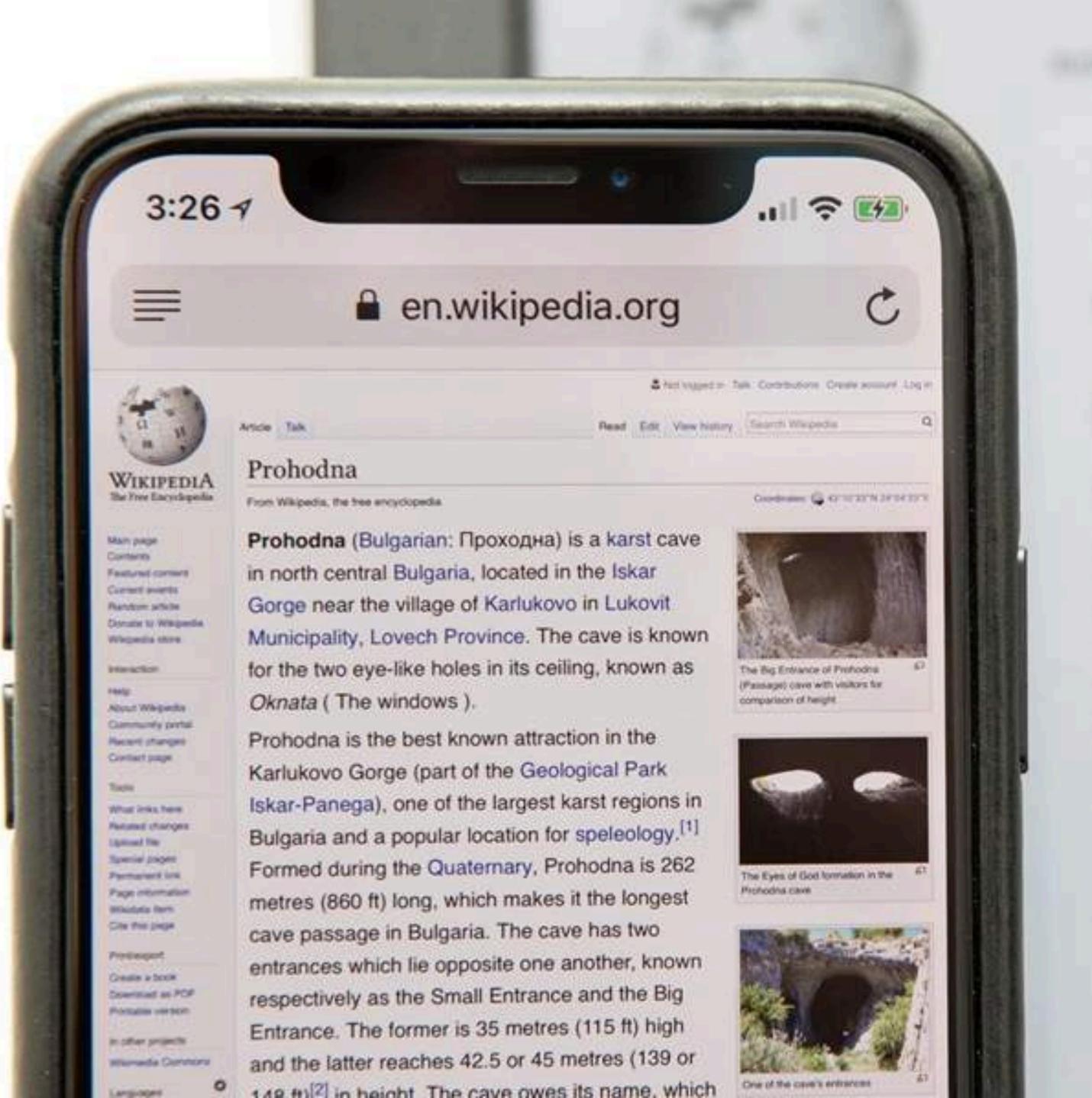




Browser chrome

- Pages are (typically) continuous and dynamically sized
- Elements within a page can scroll
- Horizontal vs. vertical
- Free scrolling vs. paginated vs. automatic

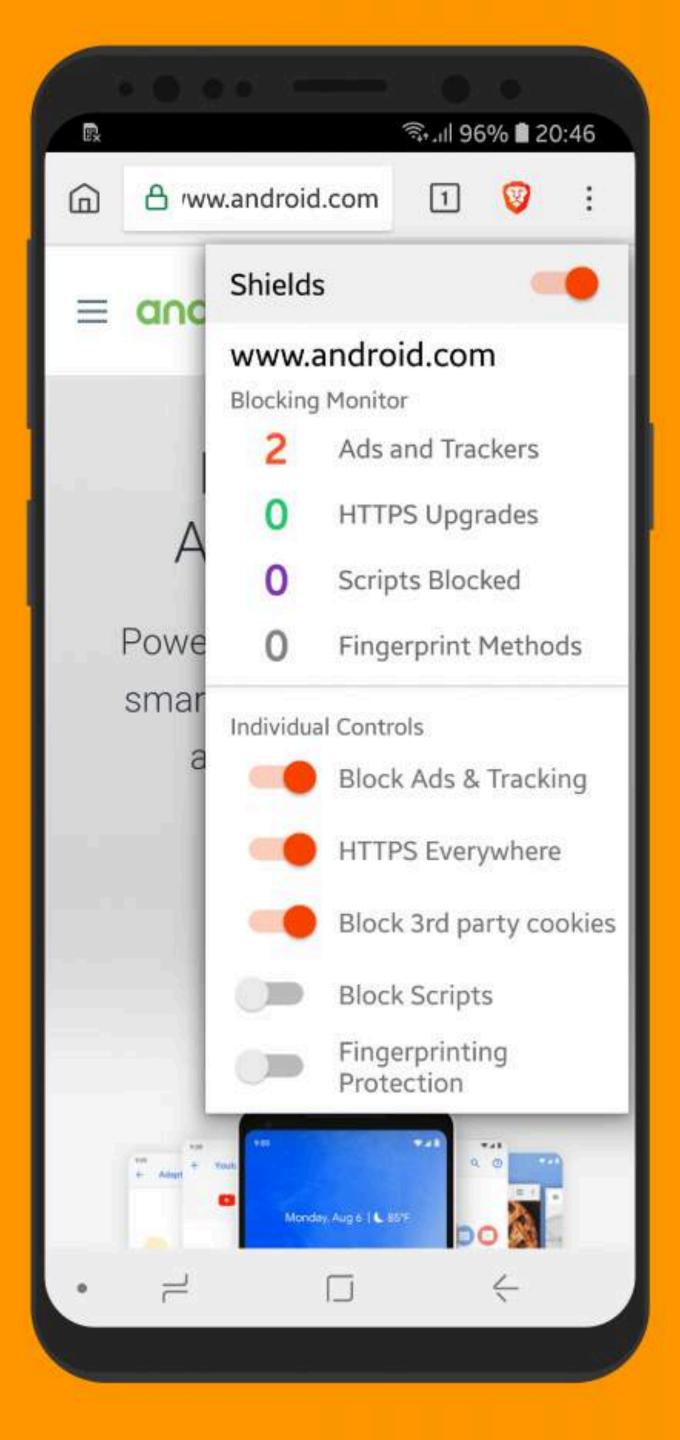


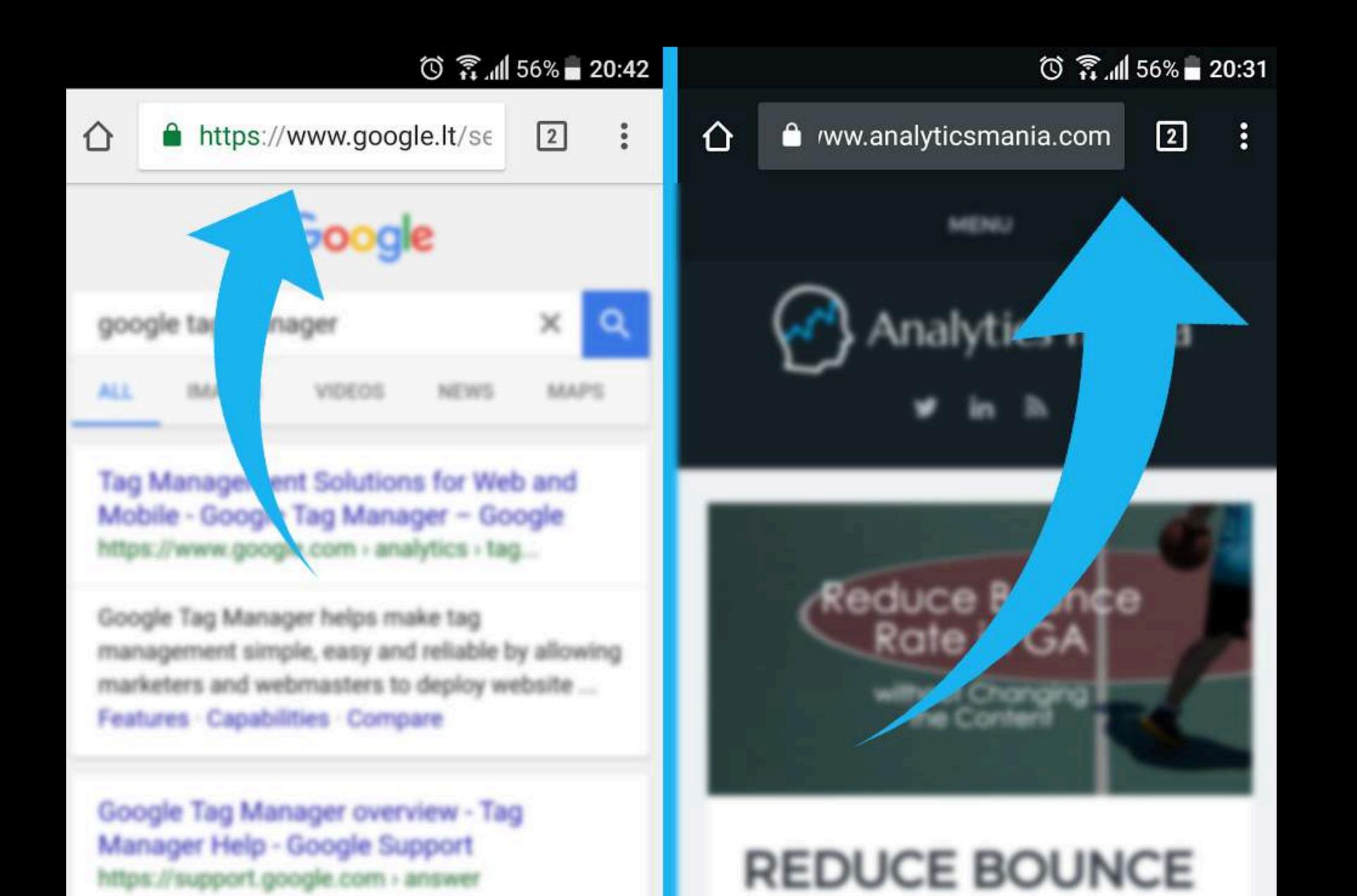


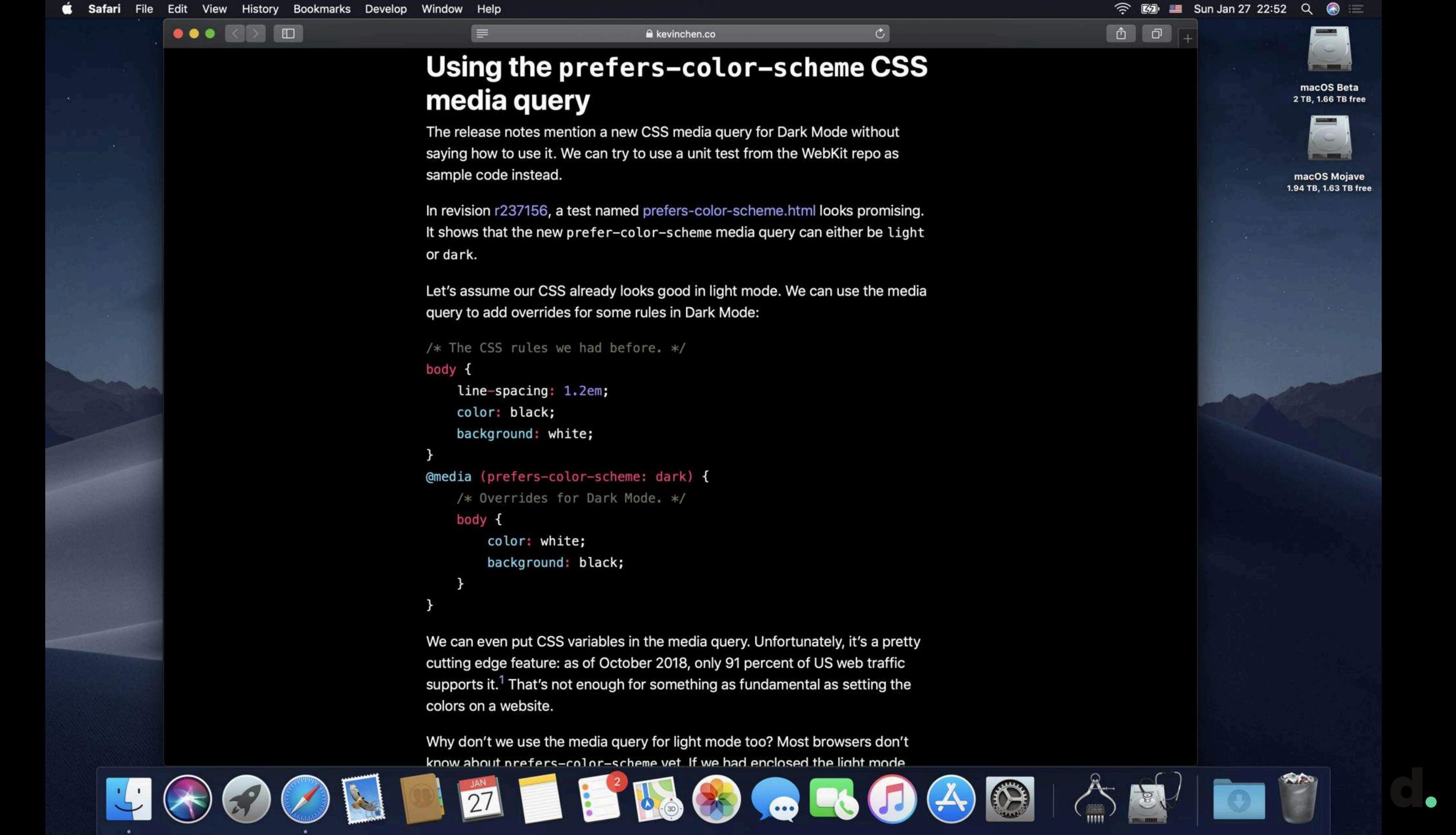
The Eves of God formation in the

Request Desktop Site

Cancel







Input devices

- Cursor
- Touch
- Touch pad
- Scroll wheels
- Keyboard
- Game pads

Each have their own best practices and design considerations (hit area size, hover feedback, common errors etc.)

Operating systems

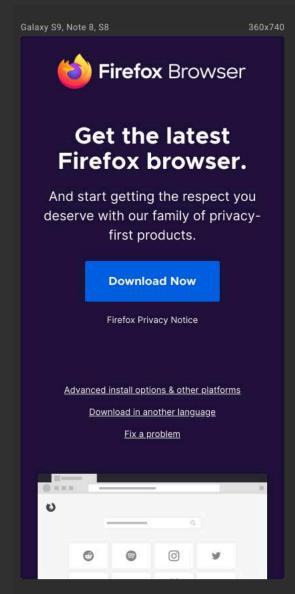
- Dark vs light theme
- Native input elements
- Security controls and limitations
- Platform conventions
- Design and style

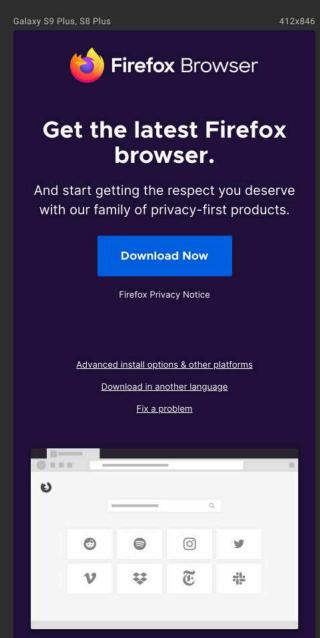
Interaction

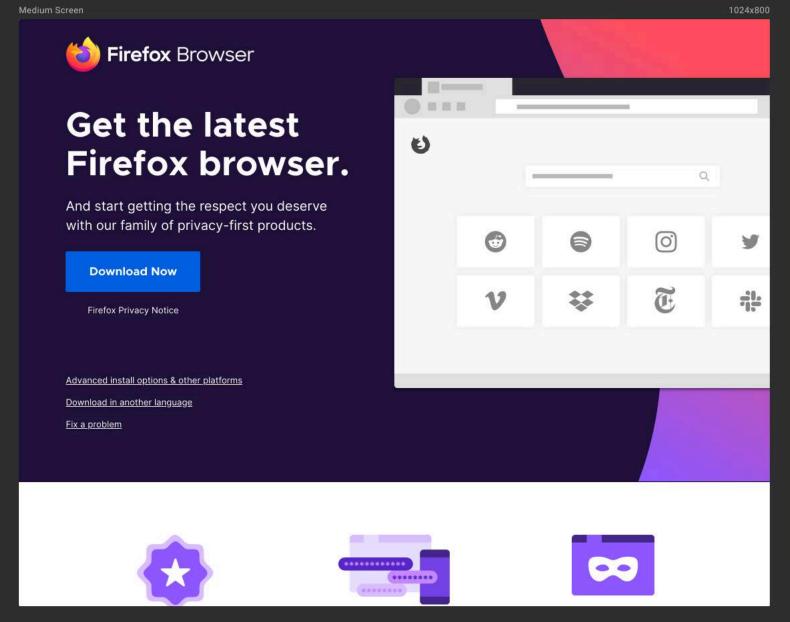
- Pointer movement
- Clicks
- Scrolls
- Touches
- Drags
- Key presses

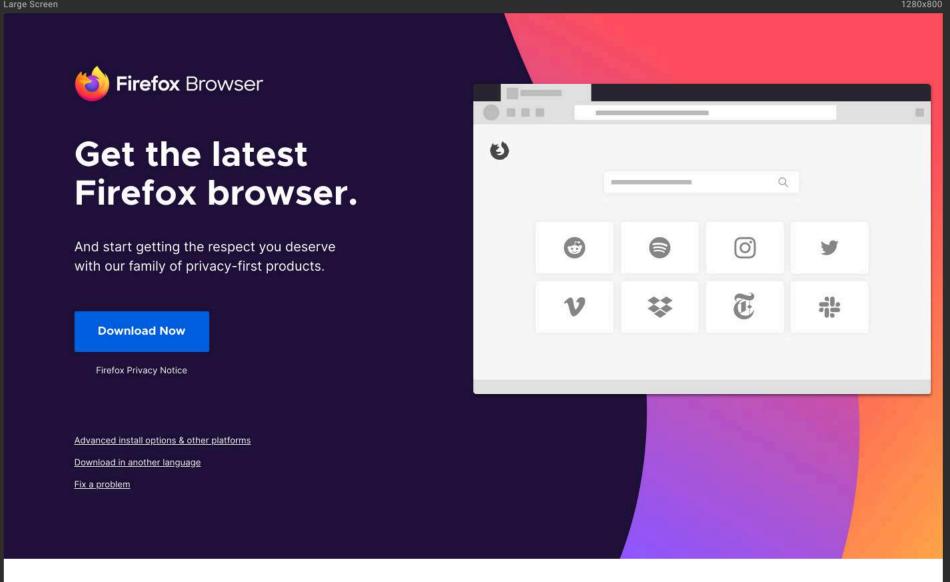
Viewport size

- Screen and window sizes vary between devices
- Viewport size on one device varies
- User can change viewport size in one session
- Mobile first?











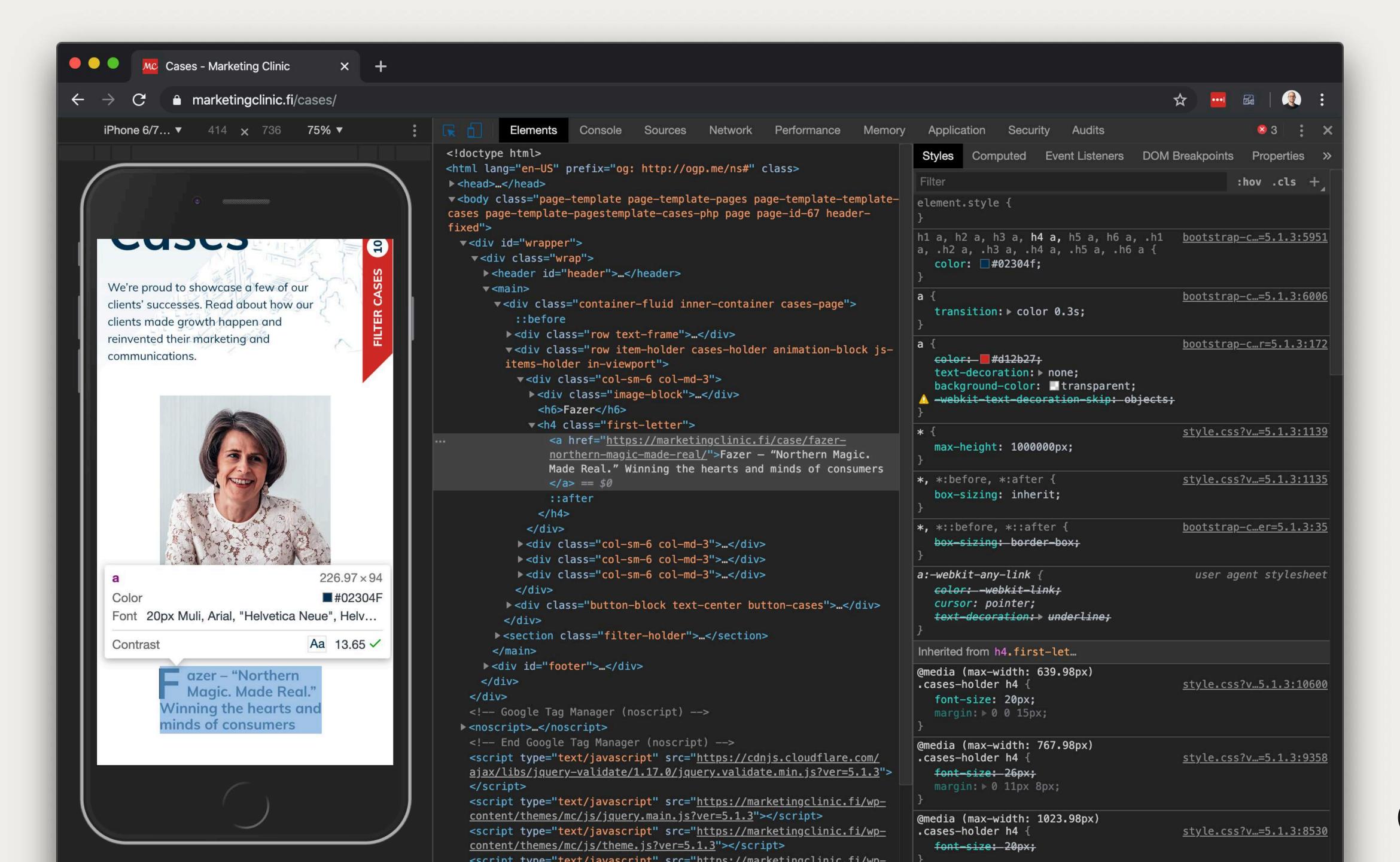
Scrolling

- Pages are continuous and dynamically sized
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- Horizontal vs. vertical
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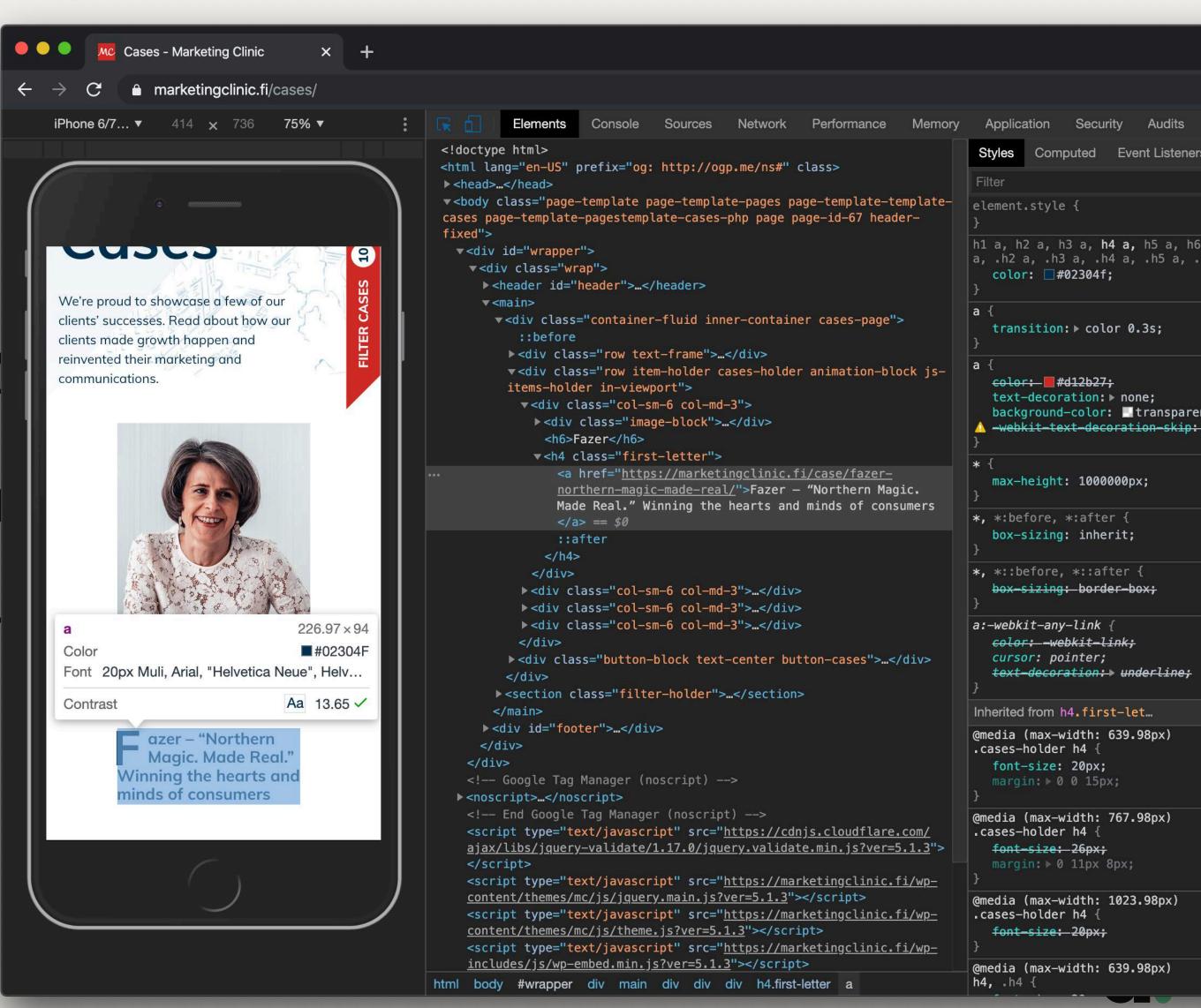
Quick foreword

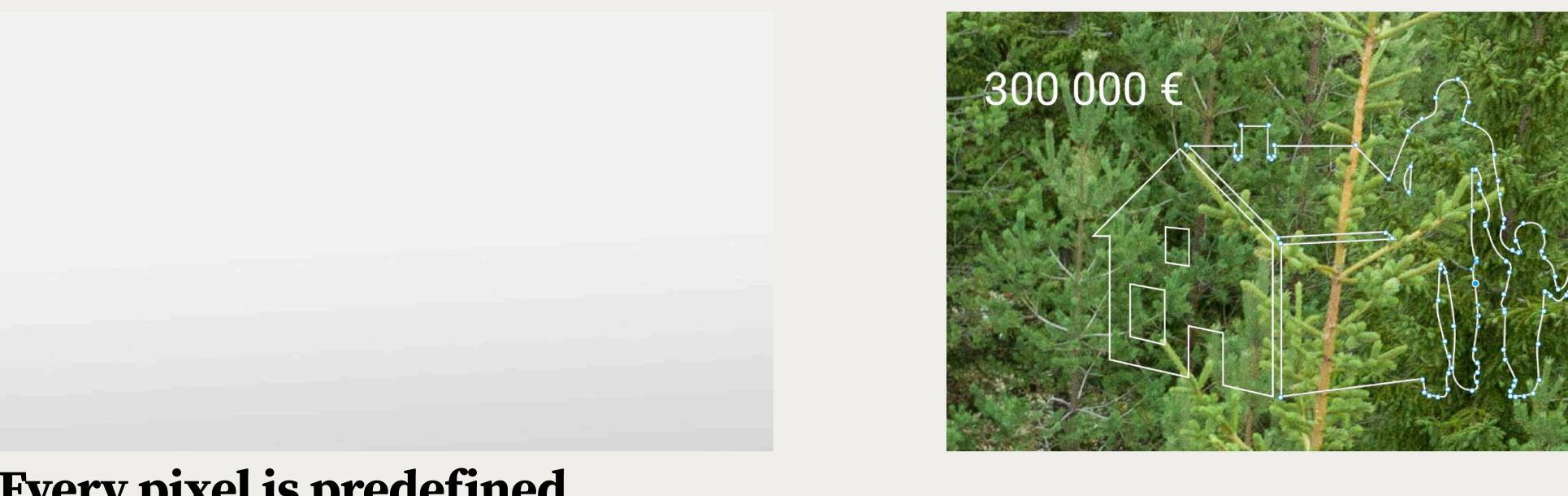
Native vs. non-native rendering



Native rendering

A browser renders graph
Every object can have pr
Different objects suppor





Every pixel is predefined

Ma run-time manipulation with user interaction

Browser has data on individual elements, composing the final rendering

Design can be manipulated and tied to user interaction

It's a bit similar to bitmap vs. vector

Think of all the possibilities of this native rendering machine

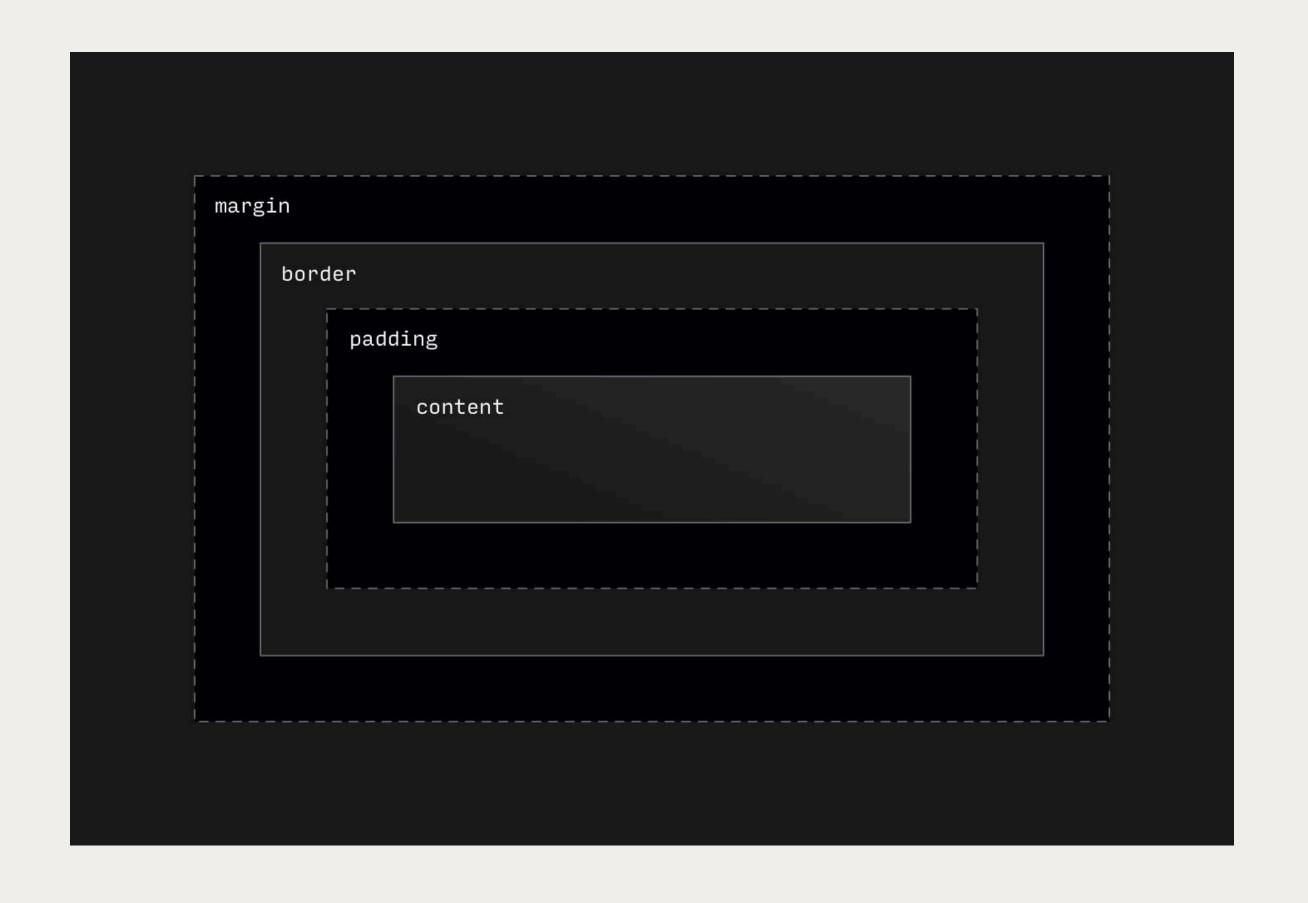
What design tools do you use?

Try to forget about them!

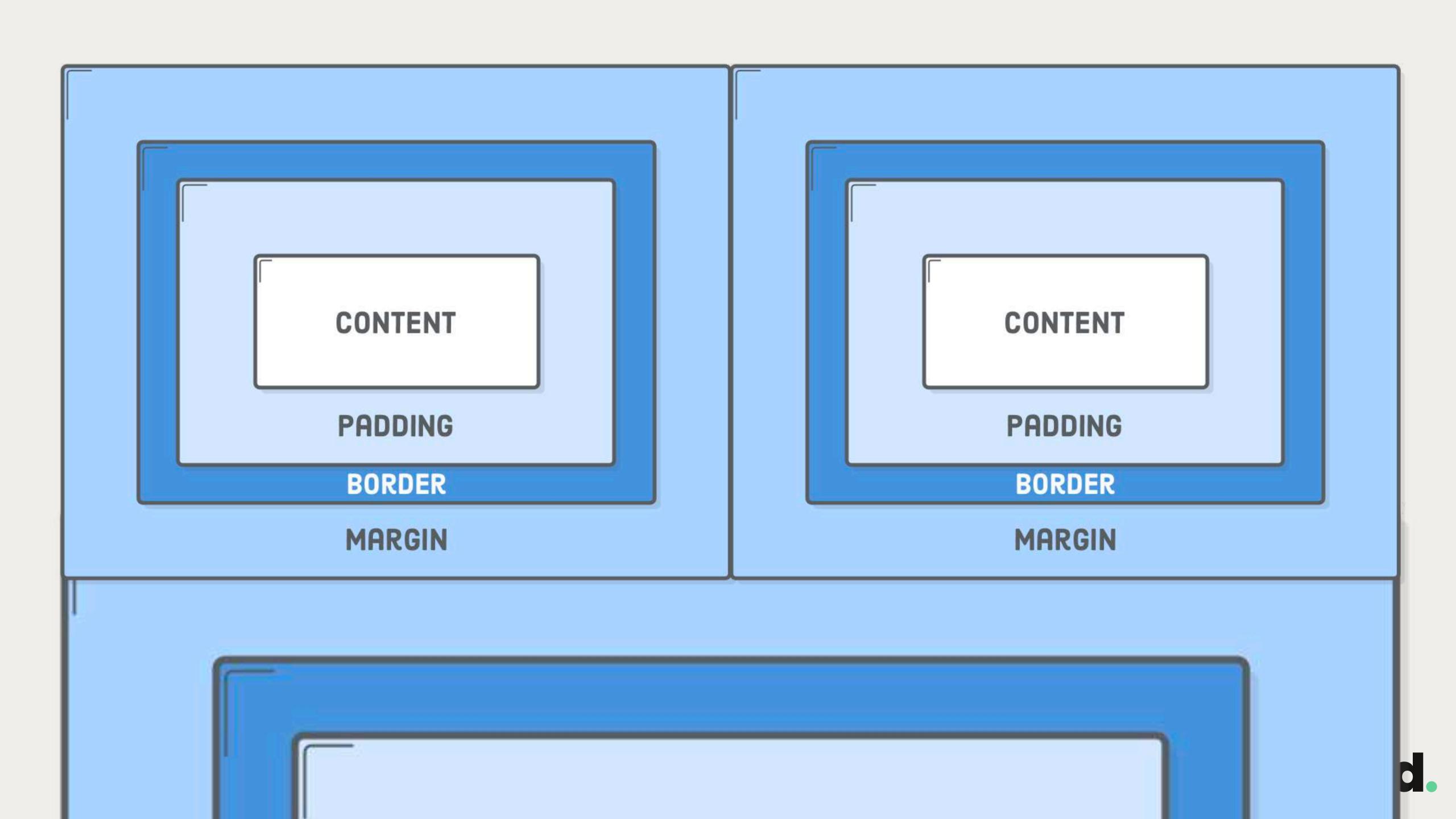
Let's go through the building blocks

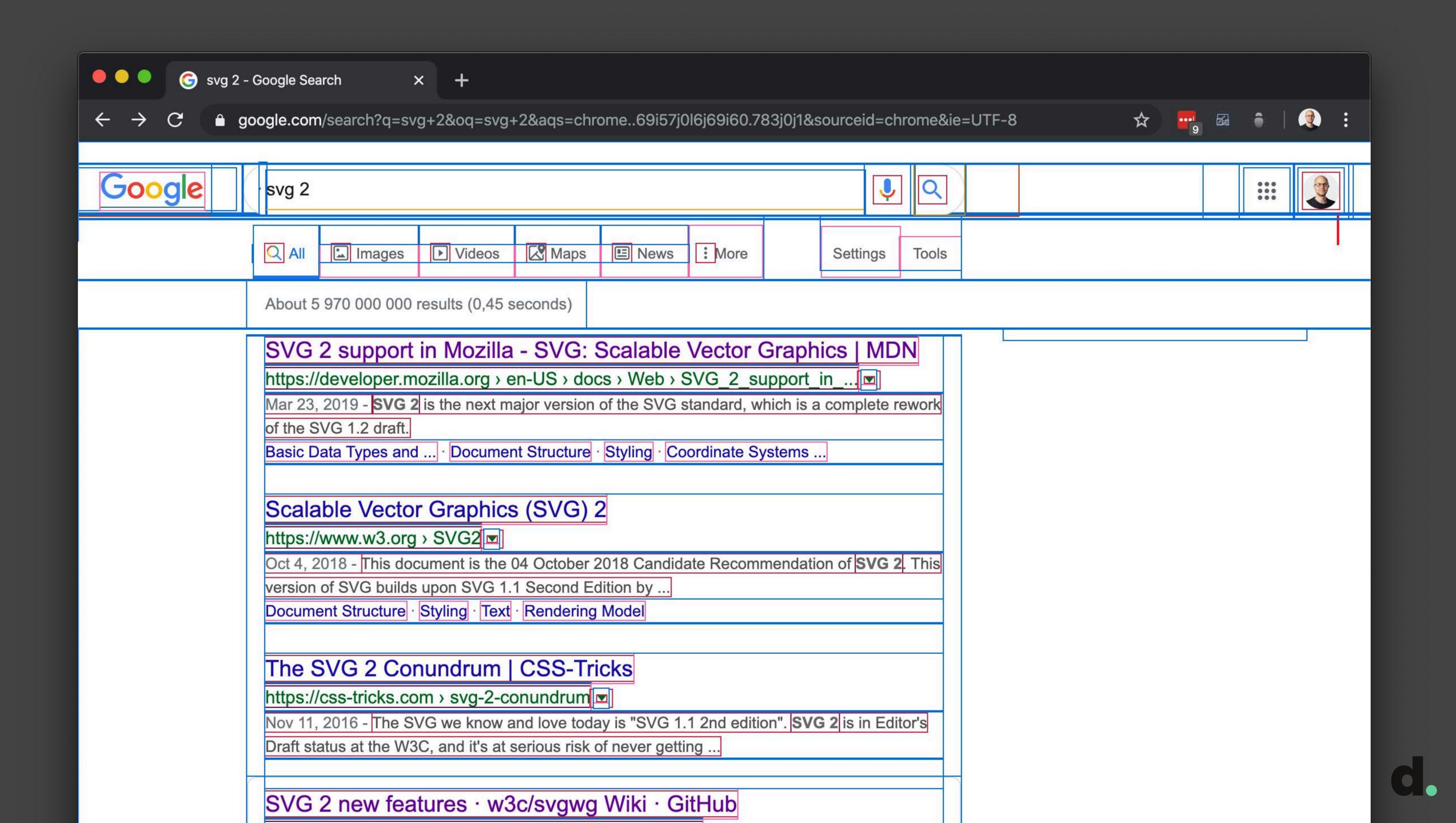
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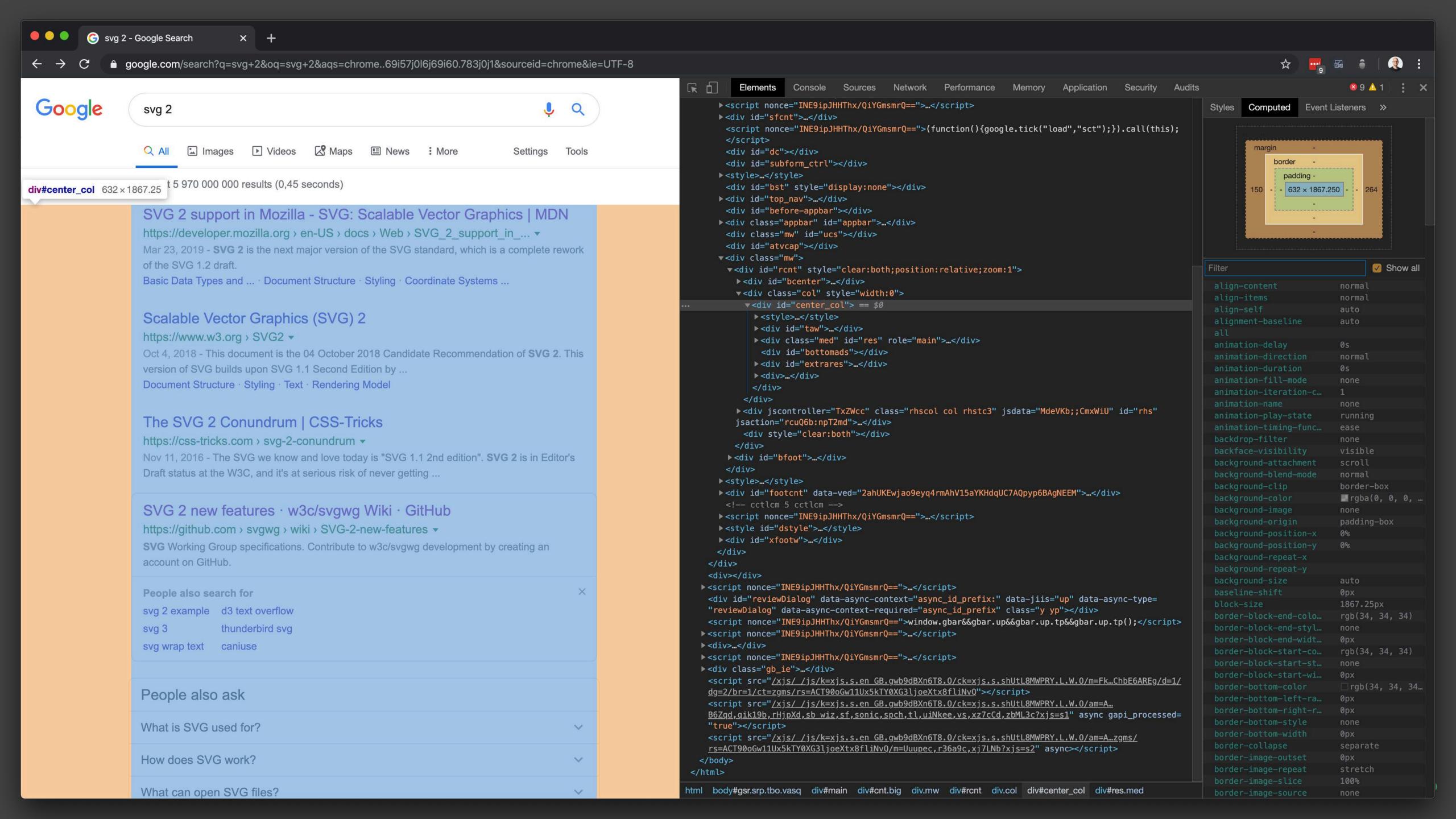
The box model



This is a box
It has properties
Properties take up space
framer.com/blog/posts/
box-model





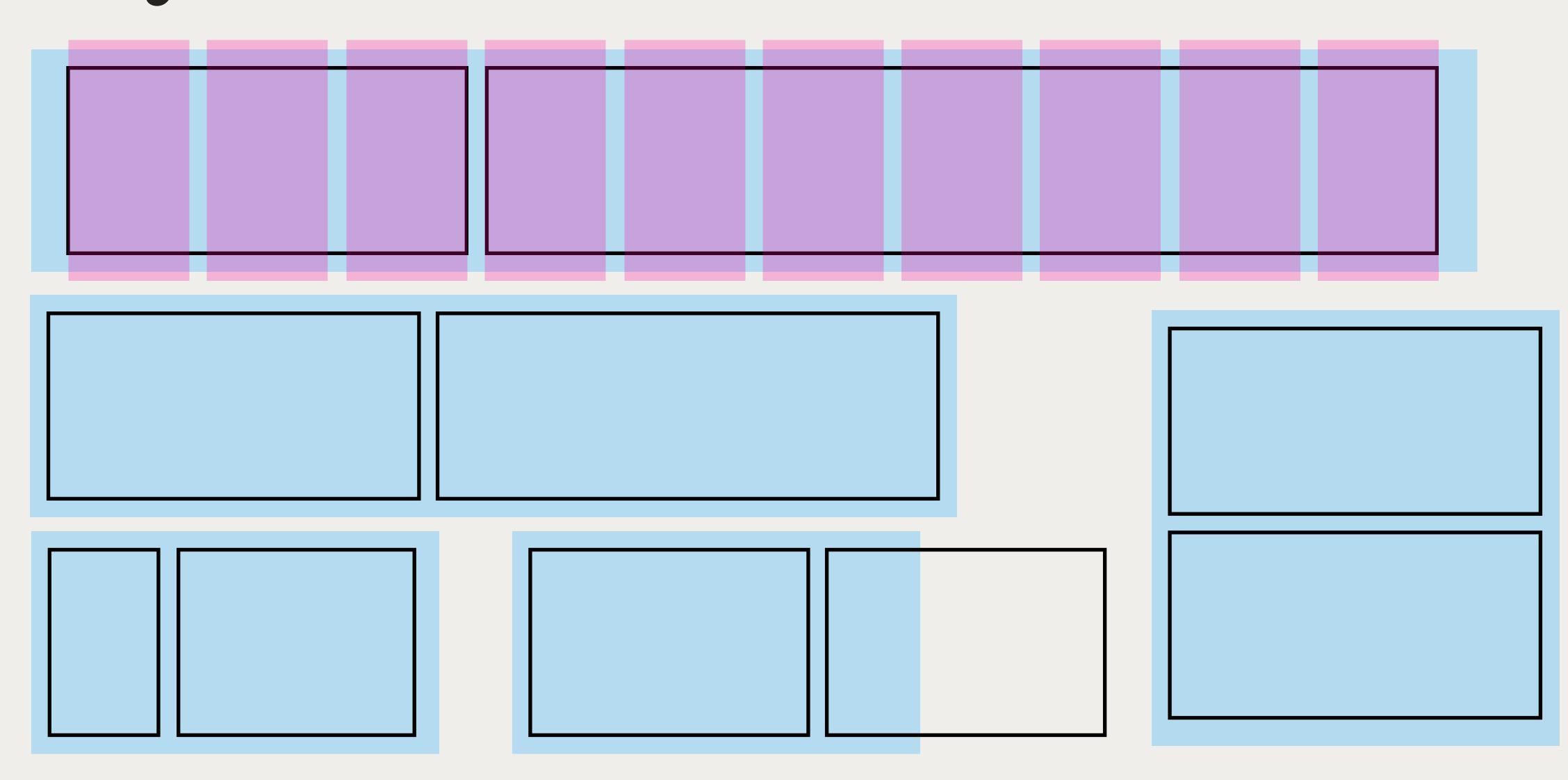


Layout model

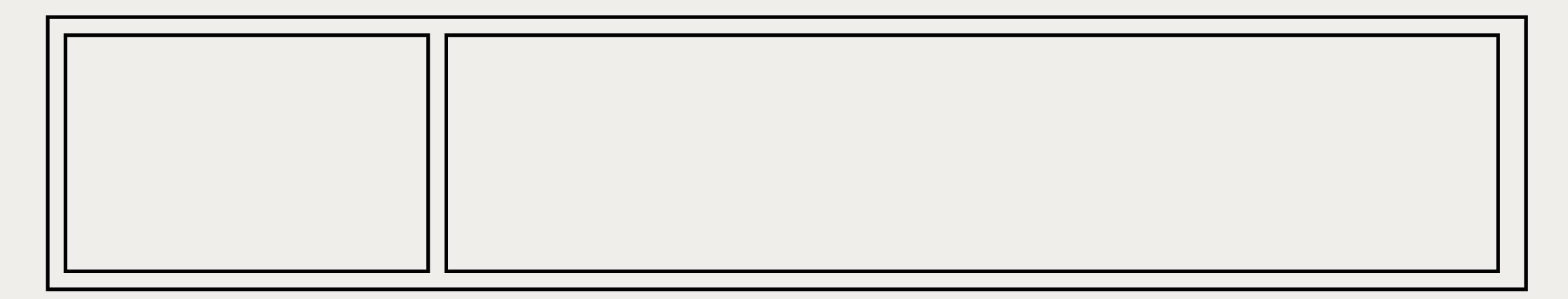
- Inline
- Block
- Flex
- Grid
- Absolute
- Fixed
- Canvas*
- SVG*

- Usually elements don't "float"
- Columns and grids mean something different from print
- Baseline grids don't exist
- Everything is nested boxes
 - ...except inline elements
 - * Canvas/SVG

Layout with columns?



Layout with columns?



- Traditional (e.g. 12-column) layout grids don't work well in web
- No native column grids, only hacks
- Web layouts are dynamic and responsive
- Design tool for web: https://webflow.com/

Frame 5 Consider square grids for design

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Element properties

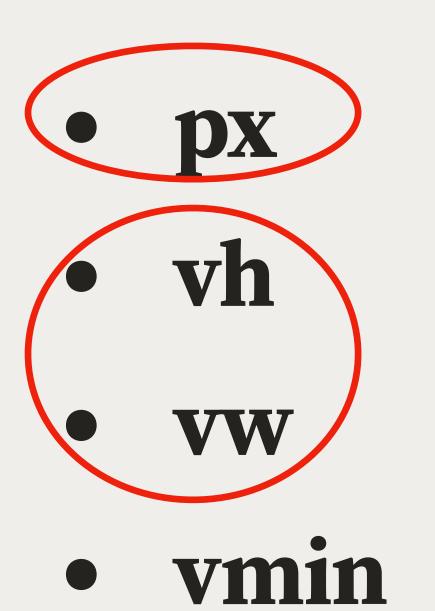
- Dimensions
- Position
- Background color
- Background image
- Font family
- Border
- Transformation

- Layout
- Overflow and scrolling
- Opacity
- Text indentation
- Shadows
- Border radius
- ...

Colors

- Hex
- RGB(A)
- HSL(A)
- Keywords
- Run-time variable support
- Gradients

Units



vmax

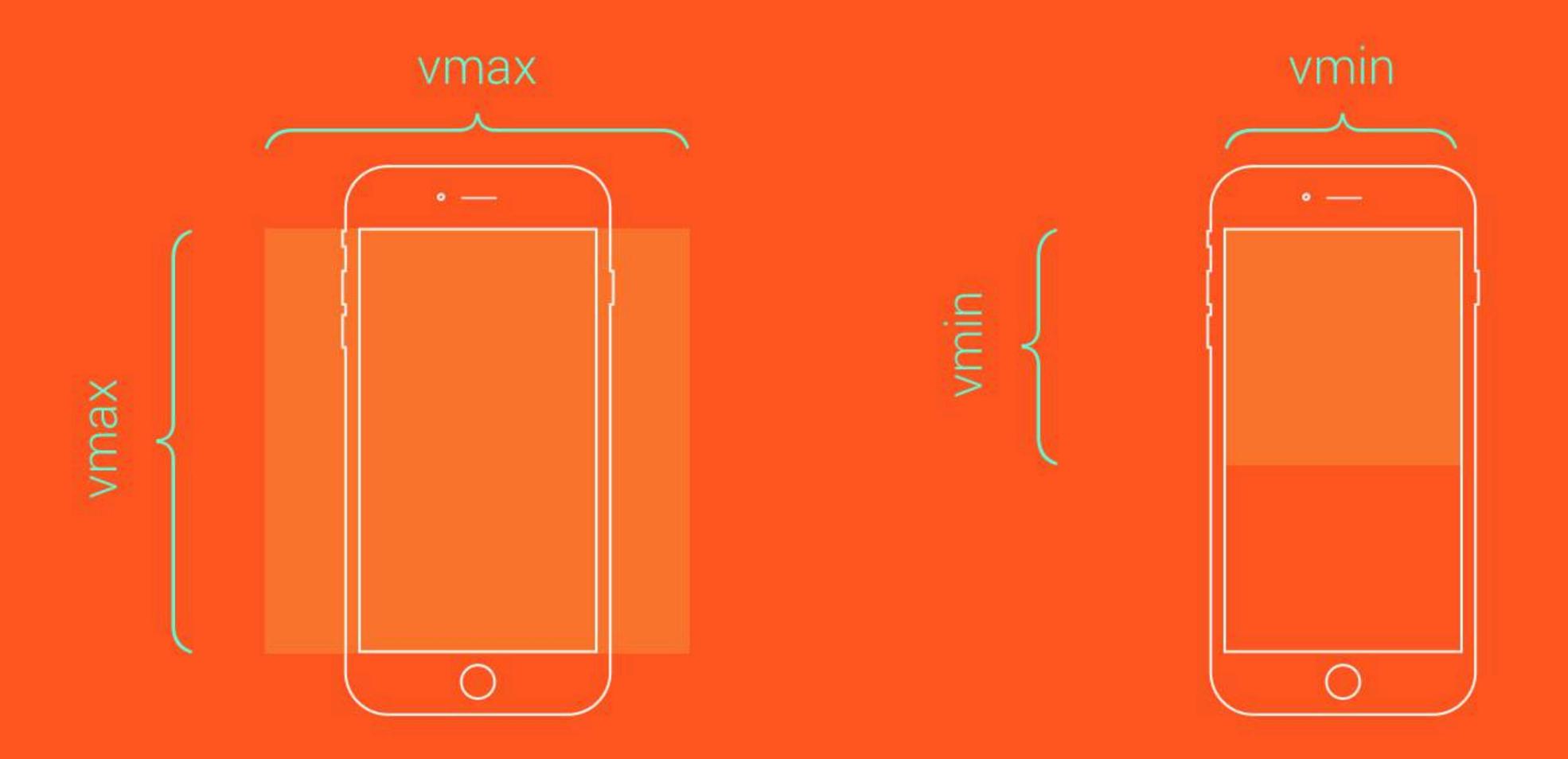
- pt
- pc
- cm
- mm
- in



- em
 - rem
 - ex
 - ch

Font sizing

- Points or pixels are fixed units
- em and rem are context-sensitive and can be scaled
- vw and vh are dependent on viewport size



Type



Typography

- Text flow can't be totally manually controlled
- Ahead of mobile platforms
- Some great typographic controls, better than you think
 - Super/subscript
 - Text directions
 - See ruby annotations

Font sizing

- You can use any unit to define font sizes
- Why is a piece of text the size it is?
- Is it relative to...
 - screen size?
 - parent element's font size?
 - our place in the universe?

Variable fonts

- New!
- Completely dynamic font properties
- Can be smoothly adjusted run-time
 - -> animation
 - -> interaction
- https://v-fonts.com/

Moving image

- Native animations
- Native transitions
- Native & streaming video

- JavaScript-powered anything
- WebGL
- https://easings.net/en



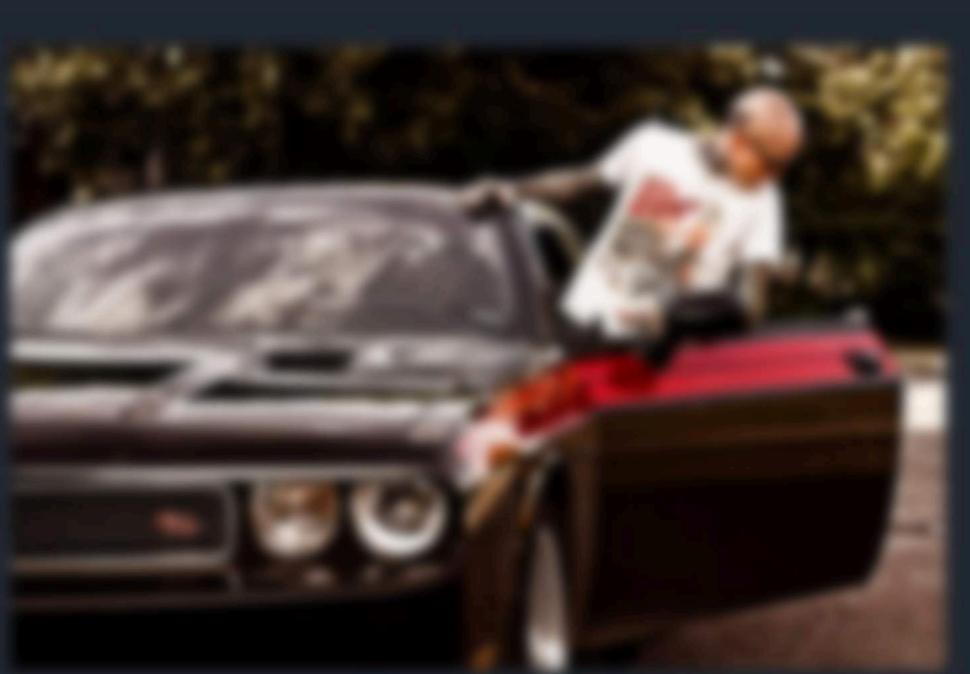
Bitmaps

- Multiple bitmap formats supported
- Can be adjusted with filters (blur, greyscale...)
- Can be cropped and resized in client
- Servers can most things clients can't (reduce file size, apply more filters...)
- Can be analyzed with code
 - Find dominant colors, faces etc.









SVG

- "Native" vector format
- SVG is XML is HTML
- Supports text
- Supports CSS and JavaScript and animations
- Many libraries build on top of SVG
- Flexible, highly optimised

Filters

Rendering of elements can be changed with filters

- Blur
- Hue
- Saturation
- Color inversion
- Contrast
- Brightness

Canvas

A frame within a page that can be used for "raw" drawing and rendering

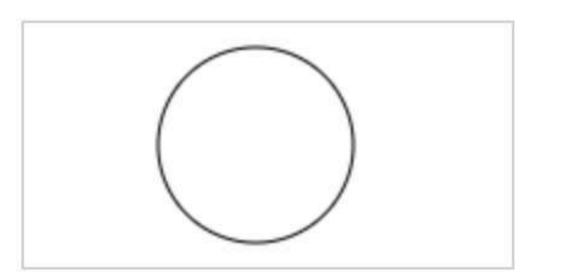
Elements can be manipulated with code
Supports 2D and real 3D

Example

```
var c = document.getElementById("myCanvas");
var ctx = c.getContext("2d");
ctx.moveTo(0, 0);
ctx.lineTo(200, 100);
ctx.stroke();
```

Try it Yourself »

Draw a Circle



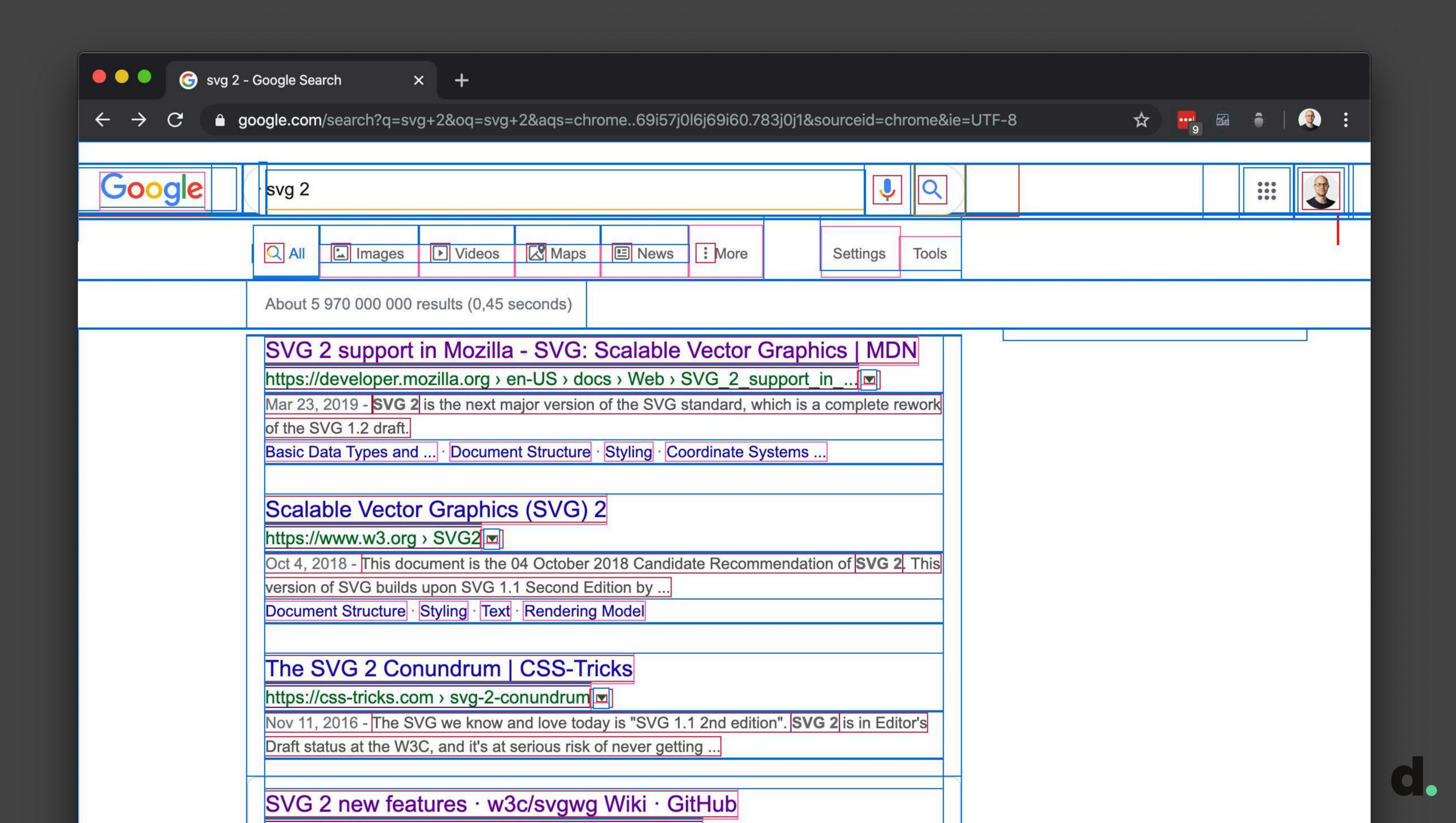
3D

Web elements are 2D With stacking order (z-index)

With transformations
With perspective

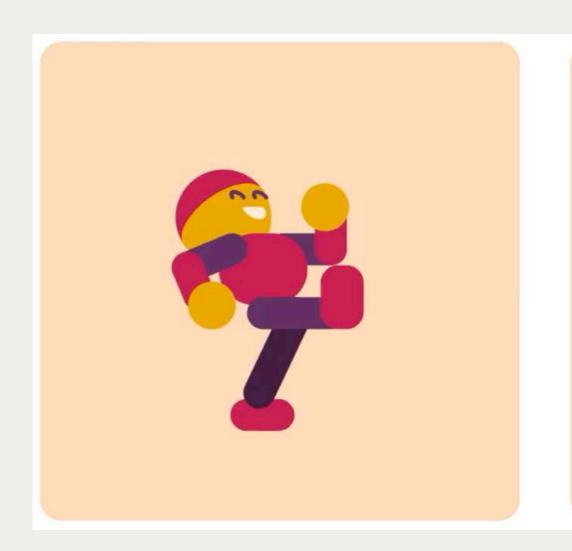
Better 3D support can be achieved with

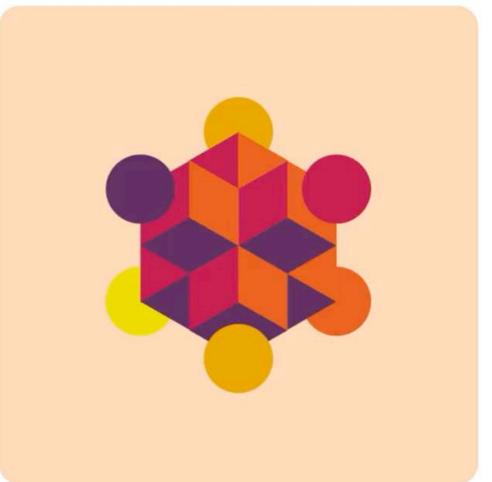
- JavaScript libraries
- SVG
- WebGL and shaders

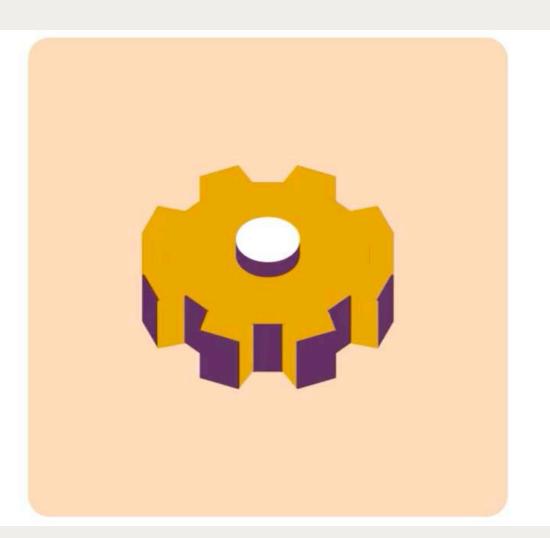


```
.panel--red {
 /* perspective function in transform property */
 transform: perspective(400px) rotateY(45deg);
```

https://blog.logrocket.com/the-noobs-guide-to-3d-transforms-with-css-7370aafd9edf/





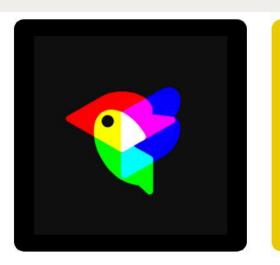














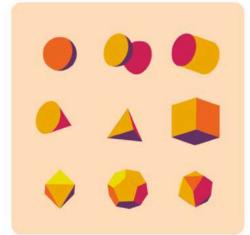








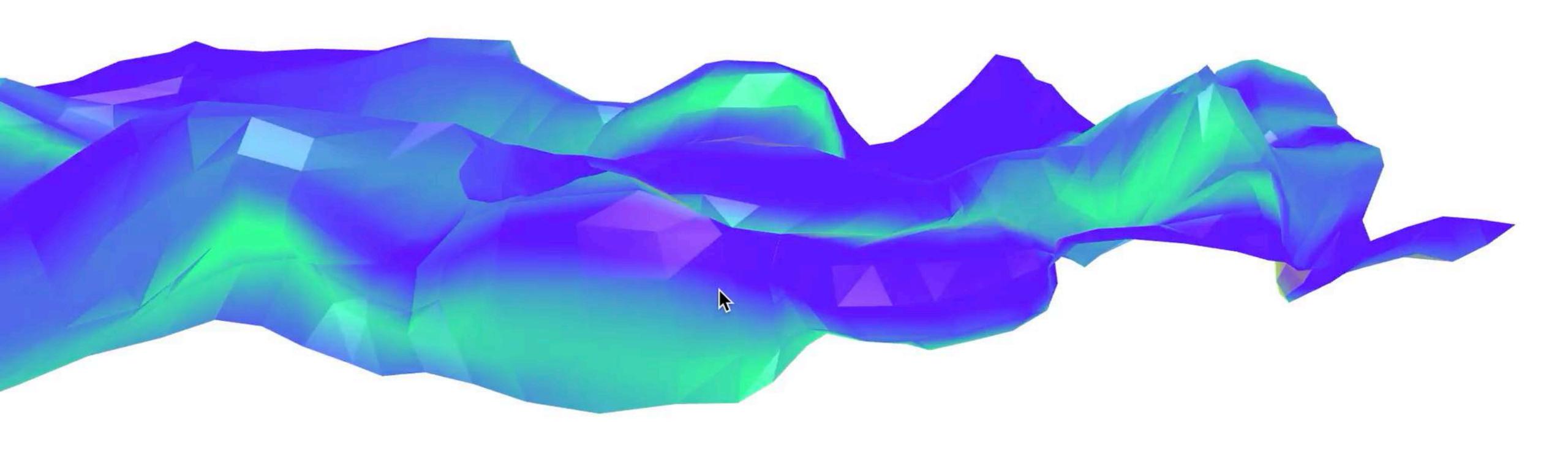










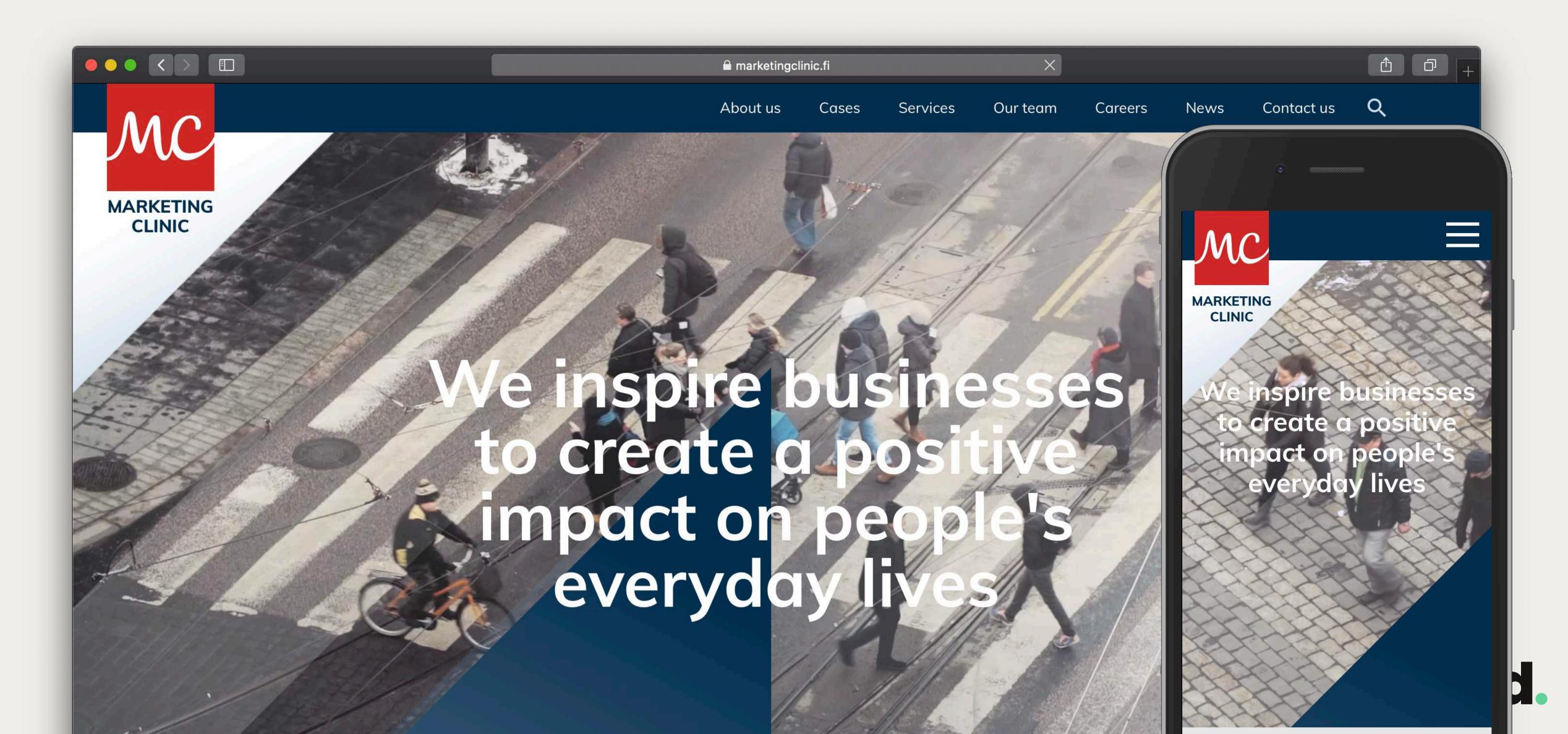


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Context matters

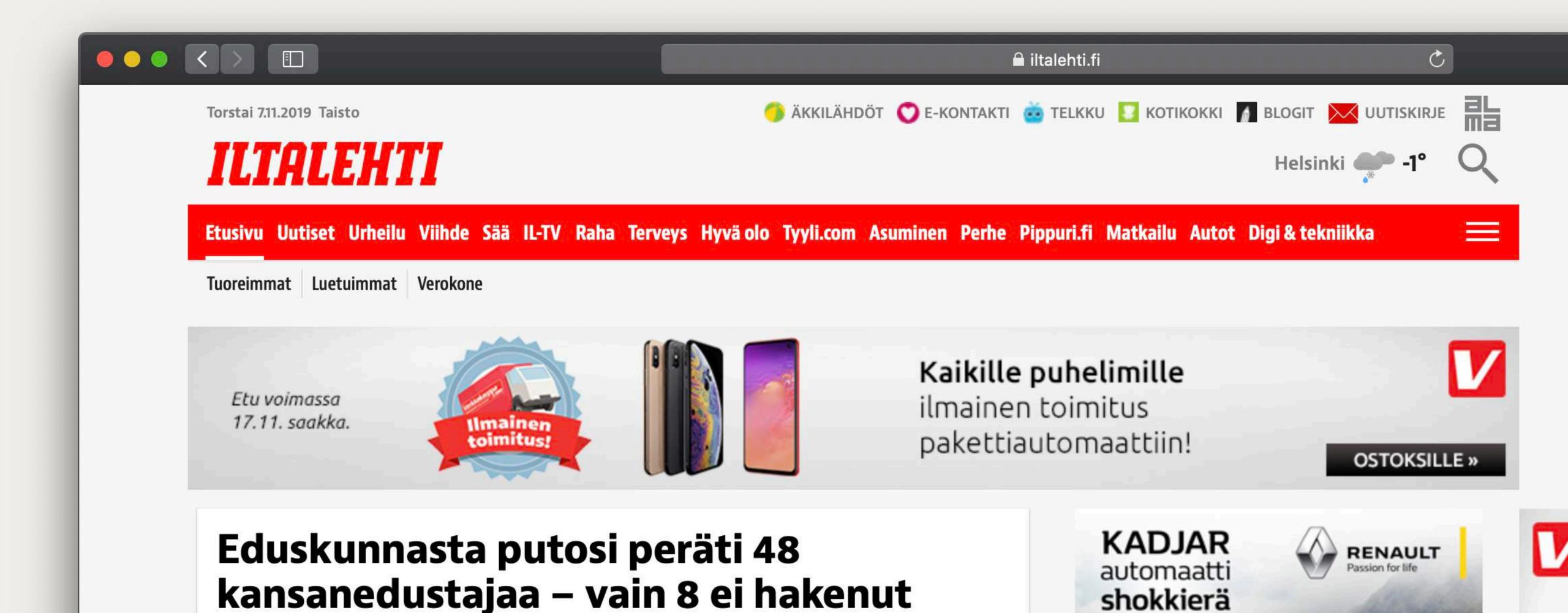
- Web sites
- Emails
- Banners
- Rich app components
- Screen readers
- RSS and web readers

Web site



Banners and embeds

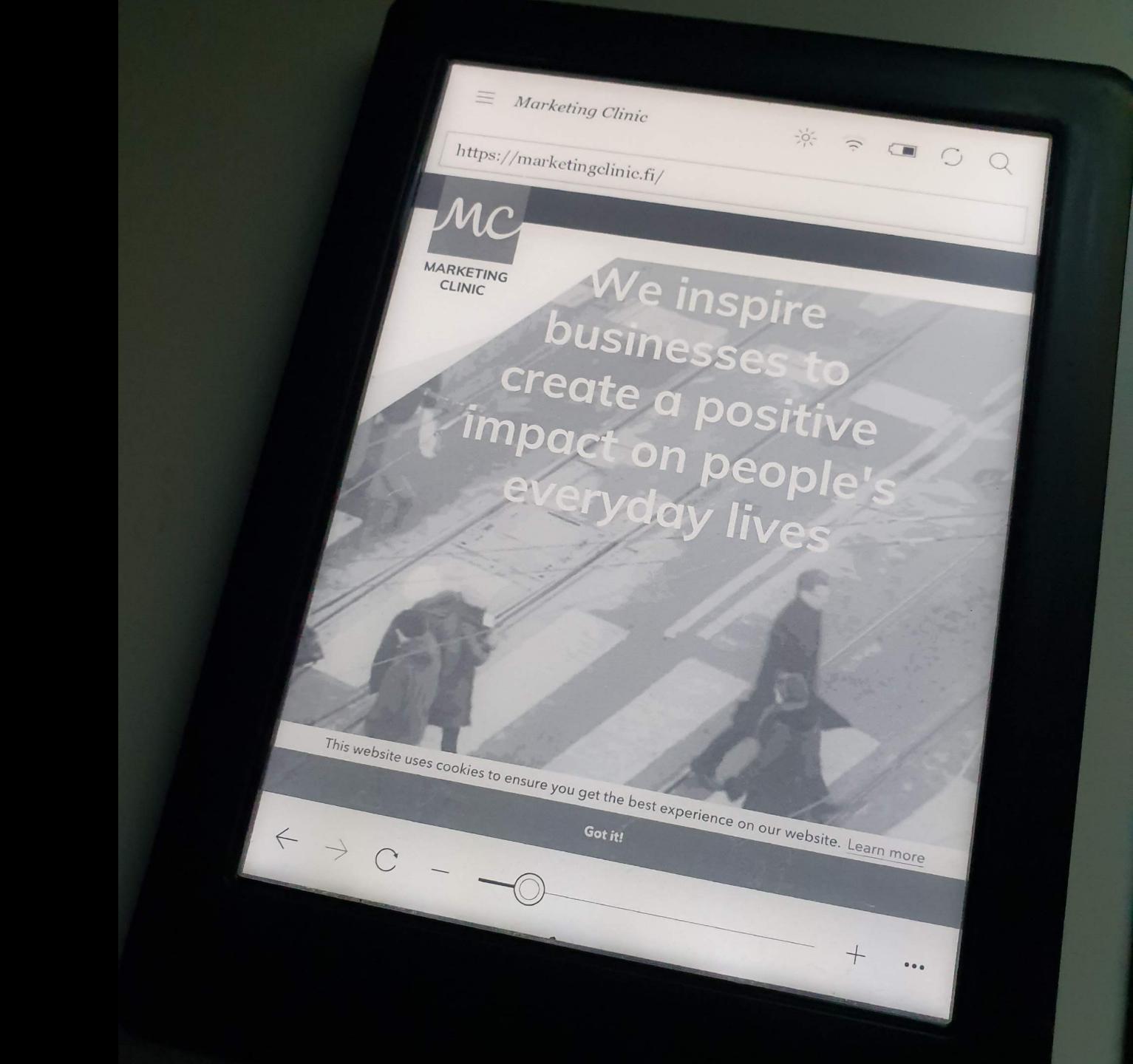
sopeutumisrahaa



shokkierä

24.990€

E-readers



Rich app components

Do more with your account

Set up your team on Uber

Your Trips

Help

Payment

Free Rides

Settings



Requesting a ride

How to request a ride

Get a price estimate for your trip

When and where is Uber available in my city?

Requesting more than one vehicle

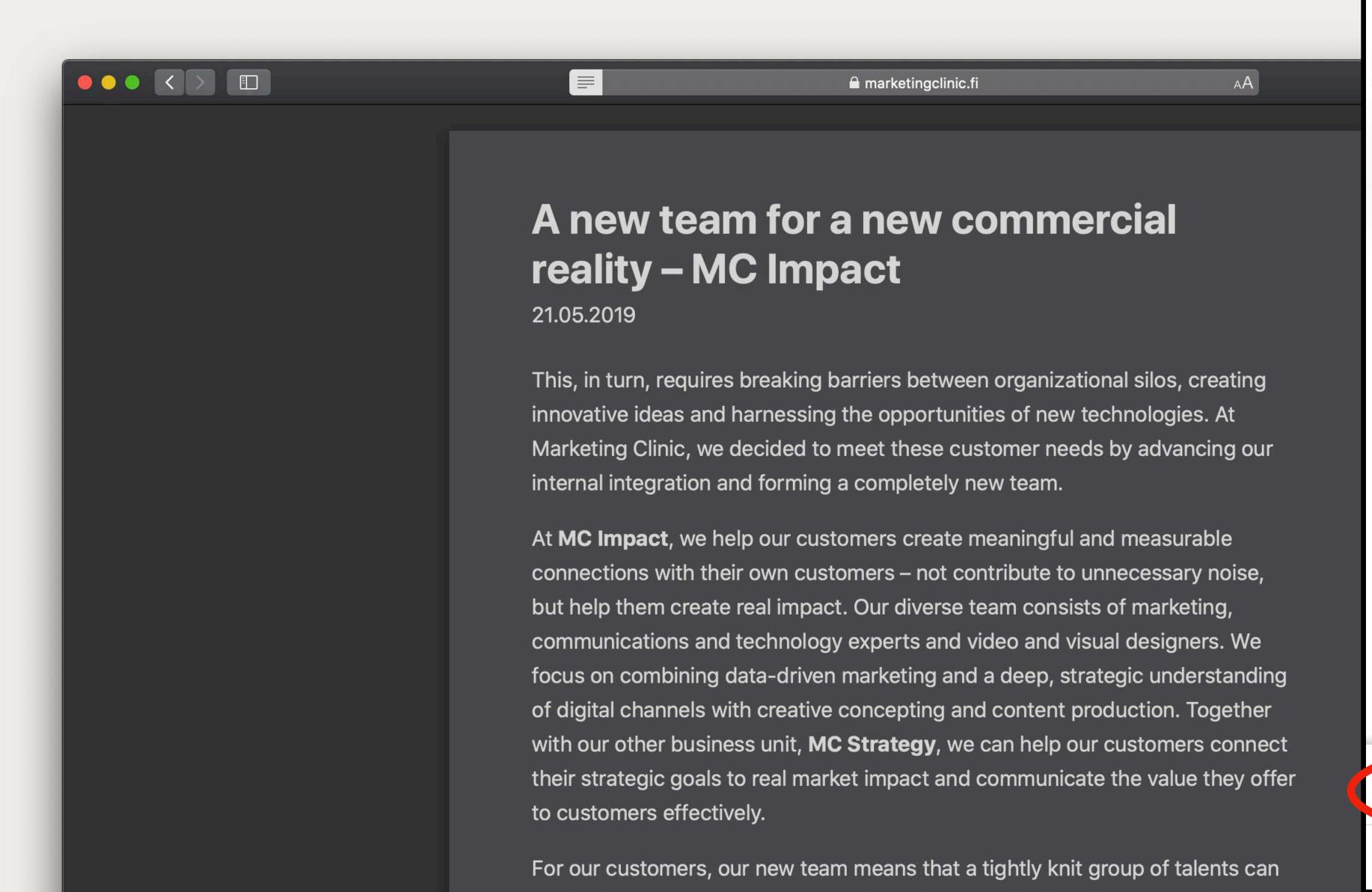


How to request a ride

Here's how to request a ride in the Uber app:

- 1. Open your app and enter your destination in the "Where to?" field
- 2. Swipe up to see all vehicle options available in your area. Tap one to select it for your ride, then tap "Choose Uber X" (button will be your vehicle selection)
- 3. You may be asked to confirm your pickup location. If so, move the pin on the map, or

Read mode



13:23 punainenristi.fi/nuoret/kotim **Punainen Risti** Nuorten kotimaan toiminta Kuvaaja: Johannes Wiehn Auttamisesta tulee hyvä mieli. Nuori voi osallistua Punaisen Ristin kotimaan toimintaan Reddie Kids - kerholaisena tai kerhon ohjaajana, nuorisoryhmissä tai nuorten leireillä. Vapaaehtoisena voi toimia säännöllisesti tai hetken kerrallaan monissa muissakin Punaisen Ristin toimintamuodoissa. Reddie Kids -kerhot Reddie Kids on Suomen Punaisen Ristin varhaisnuorten kerho joka on suunnattu 7-12vuotiaille. Kerhotoiminnan tarkoituksena on tarjota nuorille hauska ja turvallinen ympäristö jossa voi tutustua Punaisen Ristin arvomaailmaan sekä esimerkiksi ensiaputaitoihin leikkien ja pelien avulla. Kerhoissa käsiteltäviä teemoja ohjaa yleensä valmiiksi suunniteltu vuosikello. Reddie Kids -kerhon teemoja ovat käytännöllisten perus ensiaputaitojen ja turvallisuuden lisäksi muun muassa ystävyys, pakolaisuus, suvaitsevaisuus sekä vieraiden kulttuureiden ymmärtäminen ja arvostaminen. Kerho tarjoaa varhaisnuorelle loistavan mahdollisuuden tutustua Punaiseen Ristin toimintaan ja periaatteisiin

Show simplified view

Loading times

- A web page is a collection of files
- Each file must be delivered from server to browser
- Sometimes loading some or all assets fail
- Consider loading times in design decisions
- Design solutions can hide loading times or make them more tolerable
- Loading times impact conversion €€€

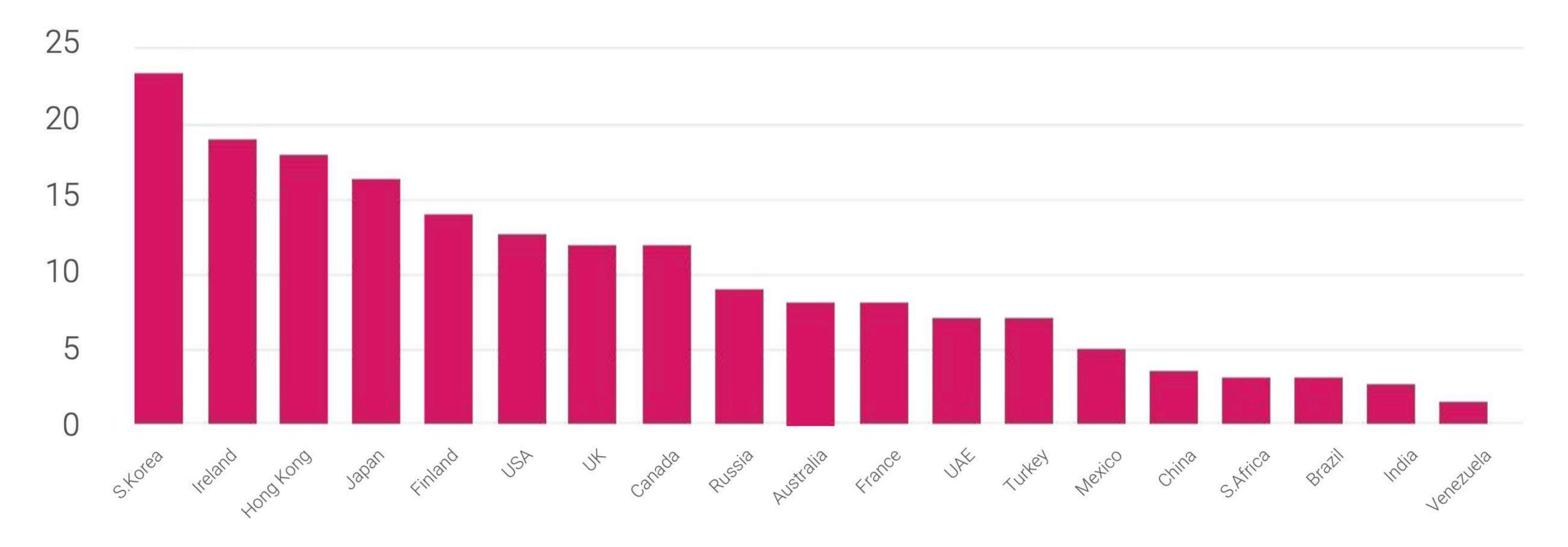
Offline

- Network conditions are never stable
- Assets can be cached or explicitly stored for offline use
- Does the design rely on constant connectivity?
- What use cases work without a connection?
- Is initial loading fast enough for an unstable connection?

Localisation

- Can't directly control date and time formatting
- Not all fonts support all languages
- OS language
- Text direction varies with language
- Input devices are different across countries
- User expectations and capabilities

Technology · Speed, data plans & coverage



Internet speed by country (mps)

Text · Language

For english readers Japanese websites appear to be more busy

Asian typography does seem denser than Latin scripts. There is no spacing between words.

Logographic characters convey more meaning almost each character is a word

Layout style represent billboard culture with its tendency to place a maximum amount of content within a minimum space

Urban density in Asian cities is high. It finds its reflection in UI design



〇 神奈川県Fujisawa shi

ホストになる ヘルプ アカウン

シティサイクリストのためのショッ プ

東京・ギア、修理、仲間。なんでもそろう、サイクリストのオアシス

エキスパートのガイドブック キュレーターはKenta Kobayashiさん (Owner, tempra cycle)



Kentaさんについ

Kentaさんは、テンプラグラフィックというショップを立ち上げ、グラフィックデザイナーとしてキャリアをスタート。ここではバイクの組み立てもカスタムデザインも手掛けていましたが、もっと真剣に自転車に打ち込みたいという思いから、テンプラサイクルを立ち上げました。

マイお気にいりスポット



Blue Lug Hatagaya 章 東京の店舗

これぞ日本の良きバイクショップの代表格。初心者向け、エキスパート向けのギアが何でもそろう。ショップのスタッフも常連さんも通う近所のカフェへ出掛けてみよう。



MacBook Pro

Text · Length in different languages

English	Press home to open	18
Greek	Πατήστε το σπίτι για να ανοίξει	31
Arabic	يضغط لفتح	9
Turkish	Açmak için ana düğmeye basın	28
Chinese	按下按钮	4

Sitemaps and navigation

- Usability
 - Overall scope of the site
 - Navigation interactions
 - Current location within site
- Sitemap for search engines and other external services
- Structured data
- Layout structure within a page

Embedded documents

Finland

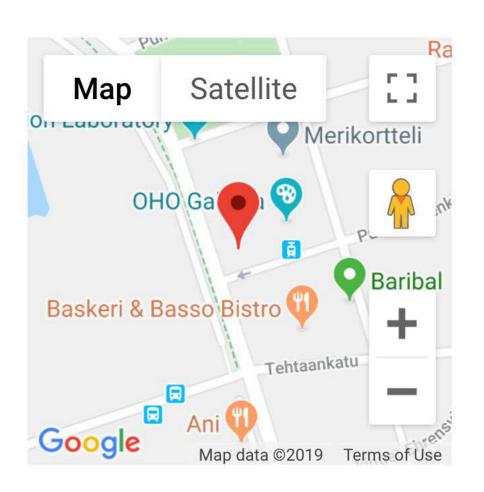
Marketing Clinic Finland Oy Pursimiehenkatu 31 B 303 00150 Helsinki FINLAND

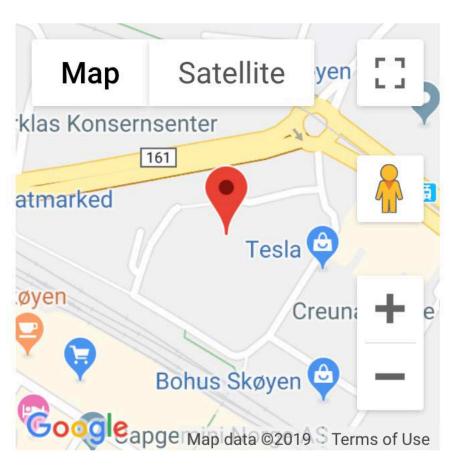
See our people »

Norway

Marketing Clinic Norway As
Drammensveien 161
0277 Oslo
NORWAY

See our people »

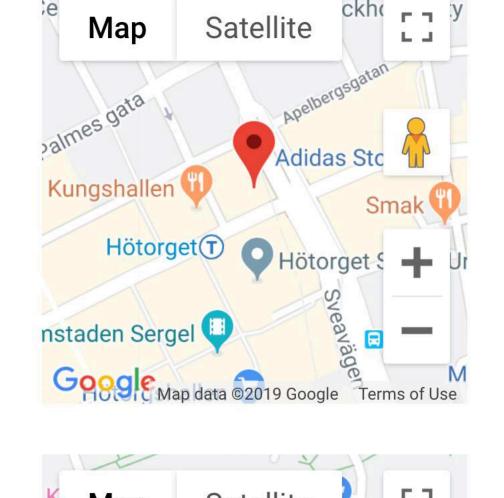




Sweden

Marketing Clinic Sweden AB Sveavägen 17, 13th floor 111 57 STOCKHOLM SWEDEN

See our people »

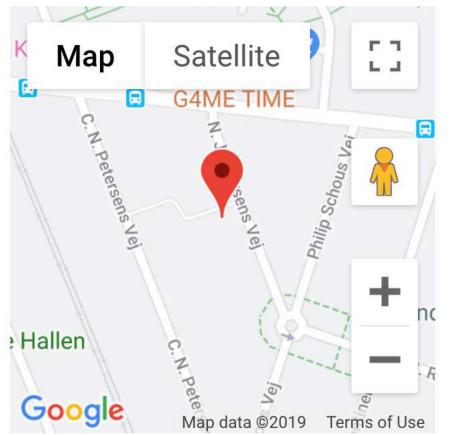


Arbetsförmedlir

Denmark

Marketing Clinic Denmark A/S
N. Jespersens Vej 13
DK-2000 Fredriksberg
DENMARK

See our people »



Embedded documents

- A web page is called a document
- A document can link to other documents
- A document can embed another document

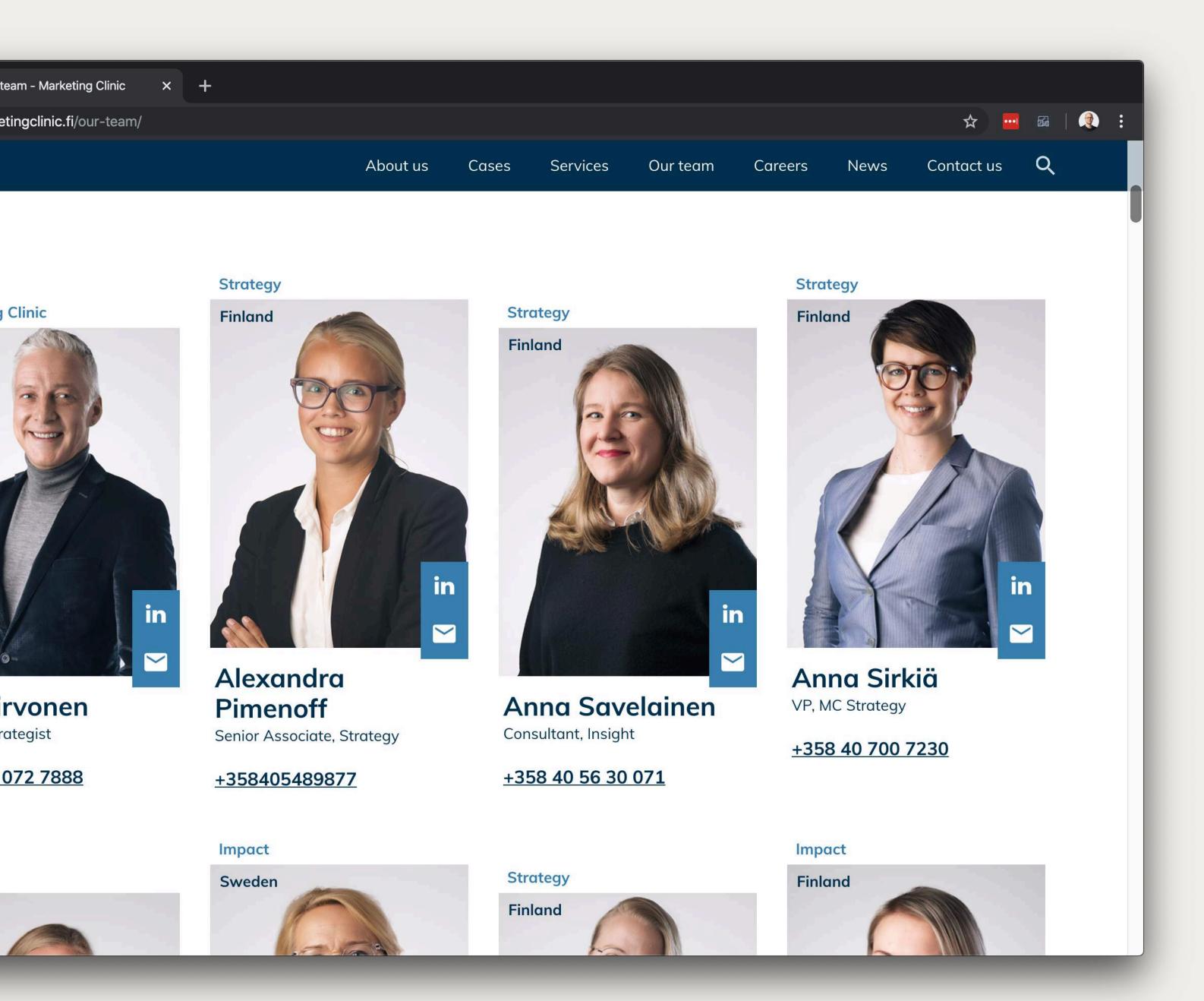
- Mobile apps with web views
- HTML banners
- Streaming video players
- Contact forms
- Maps
- Social plugins

Rich components

- Web is almost on par with mobile apps
 - Barring specialised use cases (machine learning, camera, connectivity)
- Web experiences are not static
- A web page is not just a "canvas for painting"
 - Live components with life cycle, behavior, interaction
- Traditionally relied on native form elements
- Now completely custom-build components are commonplace

Dynamic content

- Most web services are maintained for a long time
- CMSs manage updates and translations
- Designers usually work with draft content
- Content will be changed and added after release
- Designers set the rules and framing for dynamic content
- Structured content vs. layout management



Structured content

People are managed in

CMS. How they are
presented is up to
design.

Publishing system
"Pages are managed in CMS. What modules or components are available, is up to design."

Audio

- Supported quite well on the web
- Rarely used by convention
- Useful for specific use cases and explicit need
- Users might have audio channel reserved or disabled



https://ganharp.ctpt.co/

Progressive enhancement

- Nothing works exactly the same everywhere
- High backwards compatibility
- Fallbacks for fancier features
- Progressive enhancement vs. graceful degradation

- Network quality (e.g. long loading times)
- Device performance
 (e.g. slow effects)
- Browser features and bugs (e.g. lazy loading)
- OS features (e.g. video autoplay)

Progressive enhancement

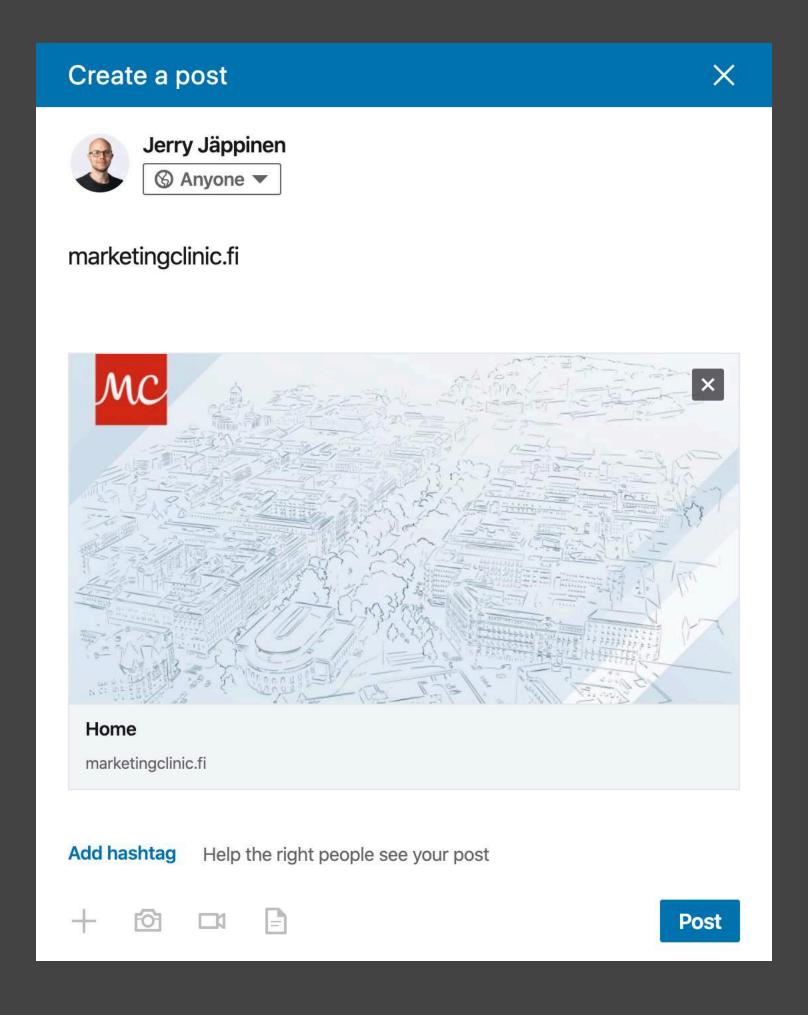
- What can I do right now?
 - https://caniuse.com/
- What can I expect in the near future?
 - https://webkit.org/status/#?
 https://webkit.org/status/#?
 https://webkit.org/status/#?
 https://webkit.org/status/#?
 https://webkit.org/status=under%20consideration,in%20development,supported%20in%20preview
 https://webkit.org/status=under%20in%20preview
 <a href="status=under%20in%20pr
 - E.g. real vertical grid control: https://drafts.csswg.org/css-rhythm/

Connected services

- Example
 - Web site shared on a social network
 - Web site saved to home screen
- Web is connected: web site is not just a web site
- Users and platforms have freedom
 - They determine how your web site is used
- Browsers and other services scrape web sites continuously

Metainfo

- Web sites use meta tags and manifest files
- Structure of content (web app, site, AMP, article...)
- Machine-readable content (event dates, blog authors...)
- How content should be presented (mobile status bar, dark mode...)





```
"name": "ProductBeat",
       "short_name": "ProductBeat",
       "start_url": "./",
       "display": "standalone",
       "orientation": "portrait",
       "lang": "en-US",
       "background_color": "#ffffff",
       "theme_color": "#ffffff",
       "prefer_related_applications": false,
       "icons": [
           "src": "./img/icons/android-chrome-192x192.png",
           "sizes": "192x192",
           "type": "image/png"
16
         },
           "src": "./img/icons/android-chrome-512x512.png",
18
           "sizes": "512x512",
19
           "type": "image/png"
```

Accessibility

- Web is an open, universal platform
- Most of us have two eyes and 10 fingers
- Most people.
- Some rely on aids to use digital services
- Some have impairments
- Some are not familiar with the target platform or conventions
- Some services are experienced in less traditional environments

hasan & partners

our work about us contact

We are

28 years old Always curious Never satisfied 100% independent



Sinebrychoff

Red Classics

Campaign



@hasanpartners on Instagram: "Thank you. Good night!" #grandone

Instagram





hasan & partners

about us contact news

We are

28 years old Always curious Never satisfied 100% independent



Sinebrychoff

Red Classics



@hasanpartners on Instagram: "Thank you. Good night!" #grandone #lastnight

Campaign

Instagram





URLS

- URLs need to be user friendly
- They should be canonical
- They shouldn't be too long
- They can encode information that's important

Persistence

How can user's experience persist when they visit a web service multiple times?

- URLs
- Cookies
- LocalStorage
- Server-side storage

- 1. Device interaction
- 2. Layout model
- 3. Visuals
- 4. Elements
- 5. Auditing
- 6. Technical terminology

Auditing

- Always audit your work!
- For the user, end result matters not the design on paper
- Be ready to make changes when it doesn't work in practice

Tools

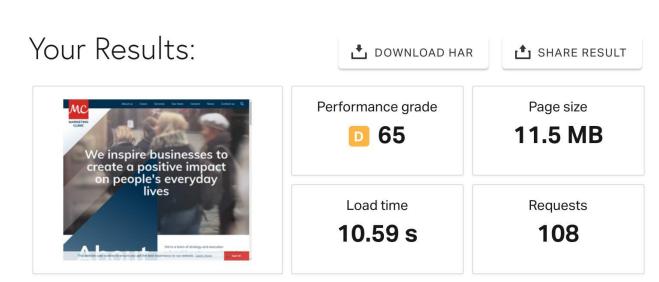
- Content analysis: https://www.similarweb.com/
- Google's Lighthouse: https://developers.google.com/speed/pagespeed/insights/
- Pingdom's speed test: https://tools.pingdom.com/
- Mobile test: https://search.google.com/test/mobile-friendly
- https://www.thinkwithgoogle.com/feature/testmysite
- https://gtmetrix.com/
- https://app.neilpatel.com/en/seo_analyzer/
- https://yellowlab.tools

URL Test from https://marketingclinic.fi/ North America - USA - San Francisco START TEST

The internet is fragile. Be the first to know when your site is in danger.

START YOUR FREE 14-DAY TRIAL





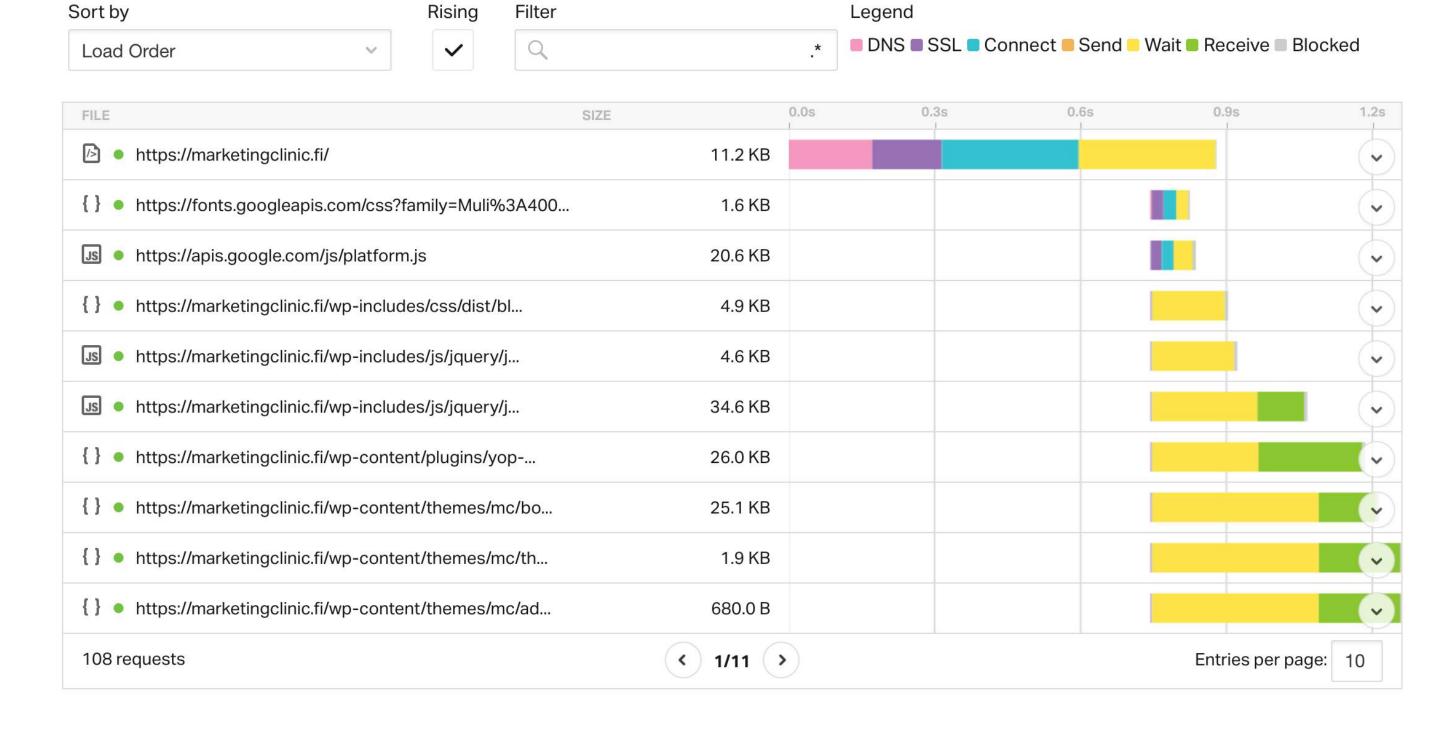


Response codes	
RESPONSE CODE	RESPONSES
200 OK	98
No Content	1
Partial Content	1
301 Moved Permanently	2
302 Found	6

Content size by cont	ent type		Requests by content	type	
CONTENT TYPE	PERCENT	SIZE	CONTENT TYPE	PERCENT	REQUESTS
Image	58.14%	984.2 KB	Image	45.63%	47
Js Script	31.16%	527.5 KB	Js Script	29.13%	30
{} css	5.51%	93.3 KB	{} css	8.74%	9
A a Font	3.32%	56.2 KB		6.80%	7
	1.32%	22.3 KB	▶ HTML	3.88%	4
	0.41%	6.9 KB	A Font	3.88%	4
XHR	0.14%	2.3 KB	▶ XHR	1.94%	2
Total	100.00%	1.7 MR	Total	100.00%	103

track.adform.net	0.28%	31.6 KB	px.ads.linkedin.com	2.78%	3
other	0.69%	78.7 KB	other	24.07%	26
Total	100.00%	11.4 MB	Total	100.00%	108

File requests



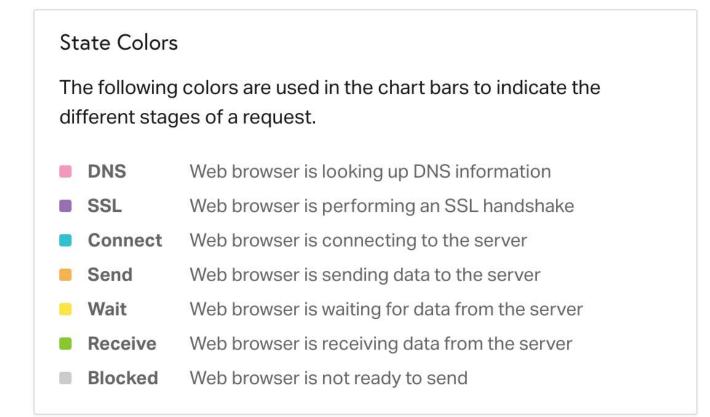
Nobody Likes a Slow Website

We built this Website Speed Test to help you analyze your website load speed.

The test is designed to help make your site faster by identifying what about a webpage is fast, slow, too big, and so on.

We have tried to make it useful both for experts and novices alike. In short, we wanted it to be an easy-to-use tool built to help webmasters and web developers everywhere optimize their website performance.

About Pingdom



Test My Site

Overview

Optimize

Other Tools



GENERATE REPORT

Your results for marketingclinic.fi ①

Your mobile page speed is 4.2 seconds on a 4G-connection.

RATING

Slow

Slow pages start to load in over 2.5 seconds.



Optimize your page speed

1. Get custom fixes to make each page on your site faster. ①

Enter another page on your site marketingclinic.fi /our-team /cases/ PAGE SPEED 3.3 seconds Your current page speed on 4G networks MARKETING CLINIC is slow. Cases **RECOMMENDED FIXES** Reduce JavaScript Execution We're proud to showcase a few of our Time clients' successes. Read about how our clients made growth happen and reinvented their marketing and Inefficient javascript can slow down your page. communications Reduce the time spent parsing, compiling, and executing your code. This website uses cookies to ensure you get the best experience on our website. Learn more



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HTML

- HTML is structured content
- CSS determines how HTML elements should be rendered by a browser
- HTML and CSS are declarative languages
- https://html.spec.whatwg.org/#toc-semantics

Server

Client

Window

Document

CSS

HTML

JavaScript

React

Vue

PHP

Amazon

Deployment

SEO

That's it!



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ProductBeat

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Lateral Nord.