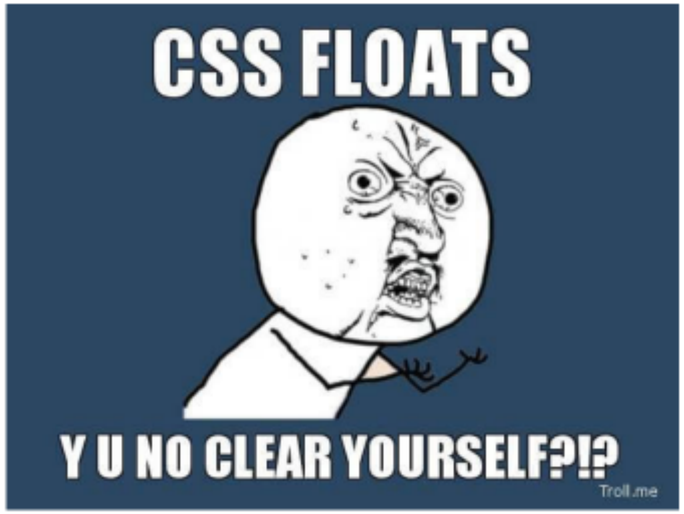
THE CASE FOR MODERN CSS

By Chen Hui Jing / @hj_chen

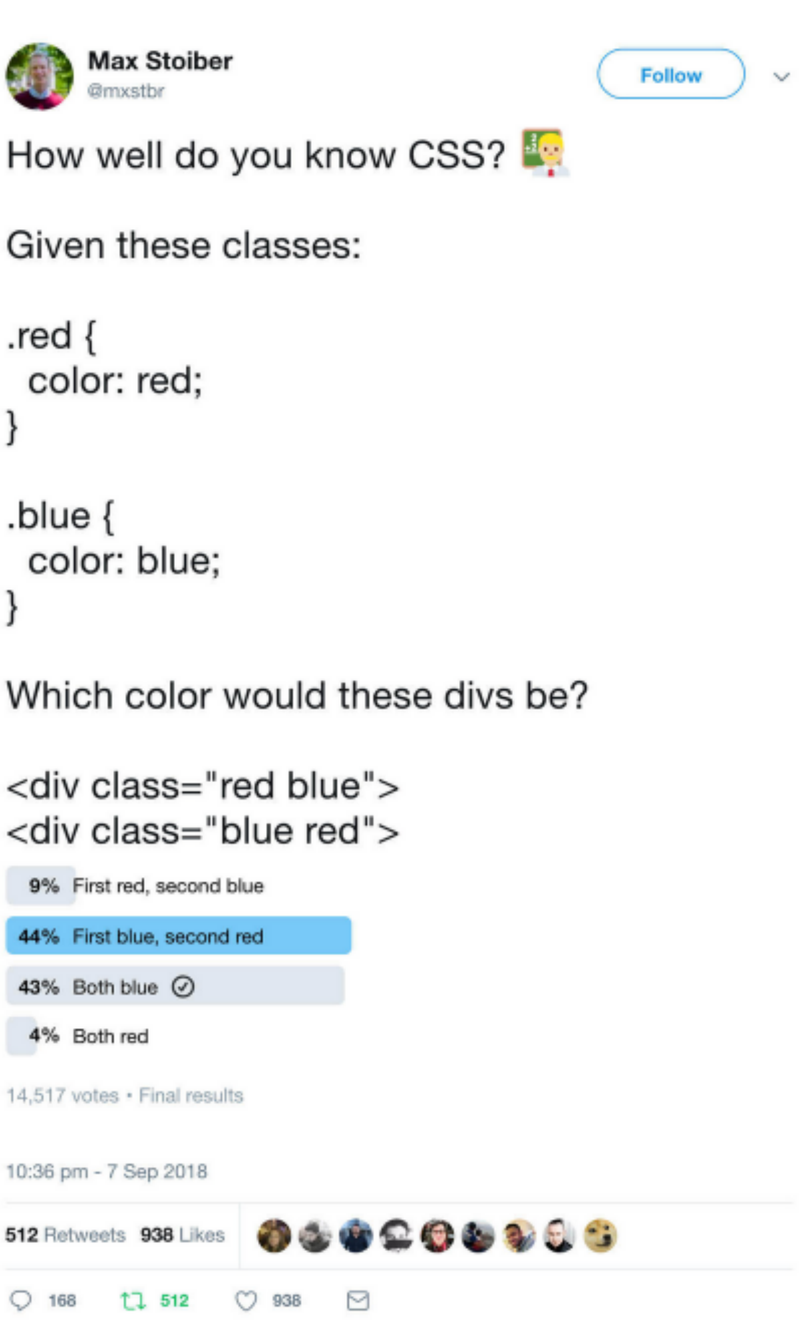

Me trying to
Write CSS


CSS FLOATS
Y U NO CLEAR YOURSELF?!?
Troll.me


Tricky CSS inheritance issue on Monday
CHALLENGE ACCEPTED
Tricky CSS inheritance issue on Friday
!important
all the things!

> What we don't understand, we fear.
> What we fear, we judge as evil.
> What we judge as evil, we attempt to control.
> And what we cannot control...we **attack**.
>
> —Anonymous


NALUBAI


Max Stoiber
@mxstbr
Follow
How well do you know CSS?
Given these classes:
.red {
color: red;
}
.blue {
color: blue;
}
Which color would these divs be?

9% First red, second blue
44% First blue, second red
43% Both blue
4% Both red
14,517 votes • Final results
10:36 pm - 7 Sep 2018
512 Retweets 938 Likes
168
512
938

Evolution of CSS Specifications

CSS1
Recommendation:
17 Dec 1996

CSS2
Recommendation:
12 May 1998

CSS2.1
Recommendation:
7 Jun 2011

CSS2.2
Working draft:
12 Apr 2016

CSS3
Decision to modularise: 14 Apr 2000
(26 modules)

CSS Snapshot 2017
(88 modules)

Completed
CSS Snapshot 2017
CSS Snapshot 2015
CSS Snapshot 2010
CSS Snapshot 2007
CSS Color Level 3
CSS Namespaces
Selectors Level 3
CSS Level 2 Revision 1
CSS Level 1
CSS Print Profile
Media Queries
CSS Style Attributes

Stable
CSS Backgrounds and Borders Level 3
CSS Conditional Rules Level 3
CSS Multi-column Layout Level 1
CSS Values and Units Level 3
CSS Cascading and Inheritance Level 3
CSS Fonts Level 3
CSS Writing Modes Level 3
CSS Counter Styles Level 3

Rewriting
CSS Basic Box Model Level 3
CSS Generated Content Level 3

Refining
CSS Animations
Web Animations 1.0
CSS Text Level 3
CSS Transforms
CSS Transitions
CSS Box Alignment Level 3
CSS Display Level 3
Preview of CSS Level 2
CSS Timing Functions Level 1

Testing
CSS Image Values and Replaced Content Level 3
CSS Speech
CSS Flexible Box Layout Level 1
CSS Text Decoration Level 3
CSS Shapes Level 1
CSS Masking Level 1
CSS Fragmentation Level 3
CSS Cascading Variables
Compositing and Blending Level 1
CSS Syntax Level 3
CSS Grid Layout Level 1
CSS Basic User Interface Level 3
CSS Will Change Level 1
Media Queries Level 4
Geometry Interfaces Level 1
CSS Cascading and Inheritance Level 4
CSS Scroll Snap Level 1
CSS Containment Level 1

Exploring
CSS Backgrounds and Borders Level 4
CSS Device Adaptation
CSS Exclusions
Filter Effects
CSS Generated Content for Paged Media
CSS Page Floats
CSS Template Layout
CSS Line Grid
CSS Lists Level 3
CSS Positioned Layout Level 3
CSS Regions
CSS Table Level 3
CSS Object Model
CSS Font Loading
CSS Scoping Level 1
Non-element Selectors
CSS Inline Layout Level 3
Motion Path Level 1
CSS Round Display Level 1
CSS Basic User Interface Level 4
CSS Text Level 4
CSS Painting API Level 1
CSS Properties and Values API Level 1
CSS Typed OM Level 1
Worklets Level 1
CSS Color Level 4
CSS Fonts Level 4
CSS Rhythmic Sizing Level 1
CSS Image Values and Replaced Content Level 4
CSS Fill and Stroke Level 3
CSS Logical Properties and Values Level 1
CSS Overflow Level 4

CSS1 does not offer:

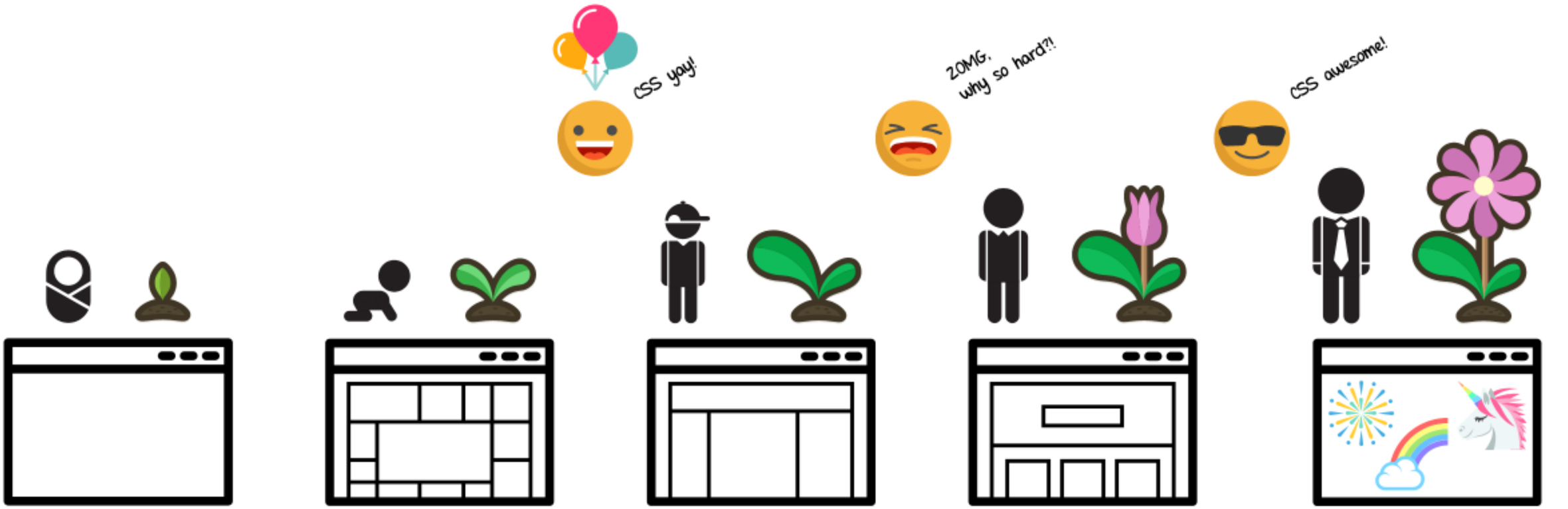
- per pixel control: CSS1 values simplicity over level of control, and although the combination of background images and styled HTML is powerful, control to the pixel level is not possible.
- author control: the author cannot enforce the use of a certain sheet, only suggest
- a layout language: CSS1 does not offer multiple columns with text-flow, overlapping frames etc.
- a rich query language on the parse tree: CSS1 can only look for ancestor elements in the parse tree, while other style sheet languages (e.g. DSSSL [6]) offers a full query language.

We expect to see extensions of CSS in several directions:

- paper: better support for printing HTML documents
- support for non-visual media: work is in the process to add a list of properties and corresponding values to support speech and braille output
- color names: the currently supported list may be extended
- fonts: more precise font specification systems are expected to complement existing CSS1 font properties.
- values, properties: we expect vendors to propose extensions to the CSS1 set of values and properties. Extending in this direction is trivial for the specification, but interoperability between different UAs is a concern
- layout language: support for two-dimensional layout in the tradition of desktop publishing packages.
- other DTDs: CSS1 has some HTML-specific parts (e.g. the special status of the 'CLASS' and 'ID' attributes) but should easily be extended to apply to other DTDs as well.

We do not expect CSS to evolve into:

- a programming language


CSS yay!
ZOMG, why so hard?!
CSS awesome!
No layout
HTML Tables
CSS Floats
Frameworks
Grid and beyond

	columns		
✓	grid-template-columns	CSS Grid Layout Module Level 1	CR
✓	grid-template-rows	CSS Template Layout Module	NOTE
✓	grid-template-rows	CSS Grid Layout Module Level 1	CR
✓	hanging-punctuation	CSS Text Module Level 3	WD
✓	height	CSS 2.1	REC
✓	height	CSS Intrinsic & Extrinsic Sizing Module Level 3	WD
✓	hyphenate-character	CSS Text Module Level 4	FPWD
✓	hyphenate-limit-chars	CSS Text Module Level 4	FPWD

✓	wrap-after	CSS Text Module Level 4	FPWD
✓	wrap-before	CSS Text Module Level 4	FPWD
✓	wrap-flow	CSS Exclusions Module Level 1	WD
✓	wrap-inside	CSS Text Module Level 4	FPWD
✓	wrap-through	CSS Exclusions Module Level 1	WD
✓	writing-mode	CSS Writing Modes Level 3	CR
✓	writing-mode	CSS Writing Modes Level 4	CR
✓	z-index	CSS 2.1	REC
✓	z-index	CSS Positioned Layout Module Level 3	WD

503 distinct property names from 63 technical reports and 60 editors' drafts.

GENERATED ON FRI 31 AUG 2018 04:40:11 AM UTC

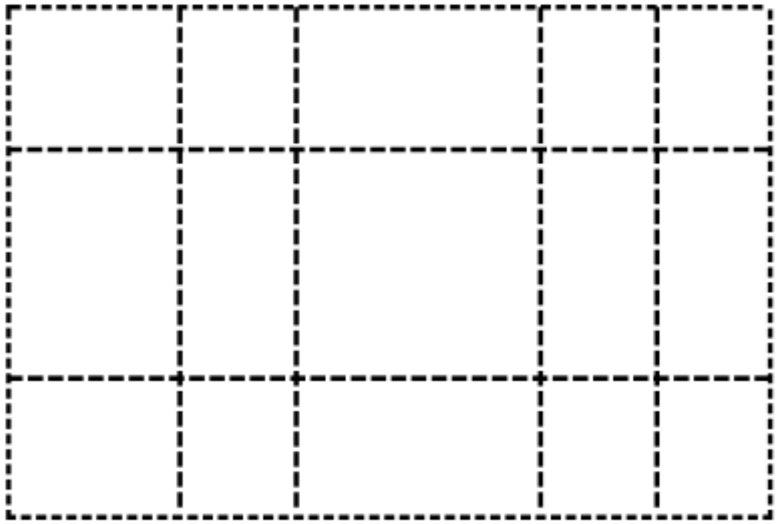
Bert Bos, style activity lead

#1: CSS Grid

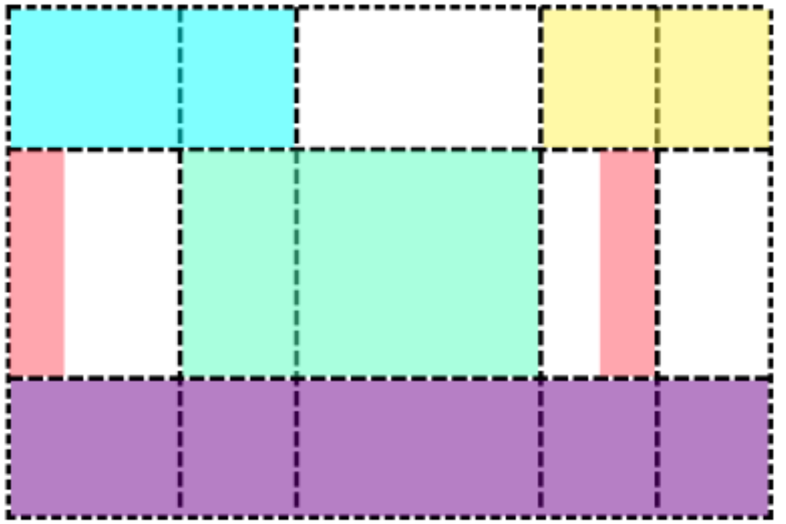
Gives us an **unprecedented level of control** over where our elements are placed on a page

CSS grid basics

Define your grid.

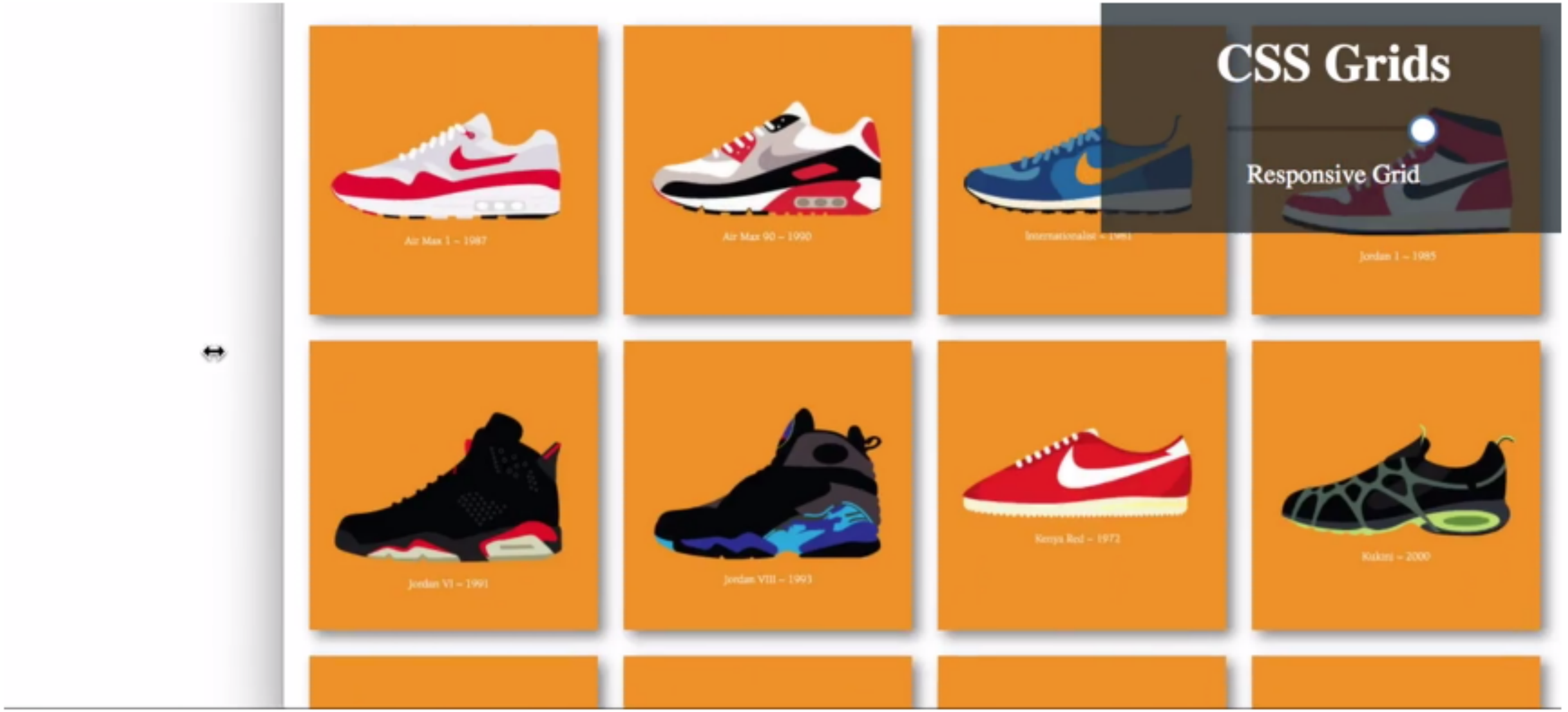


Place items in the grid.



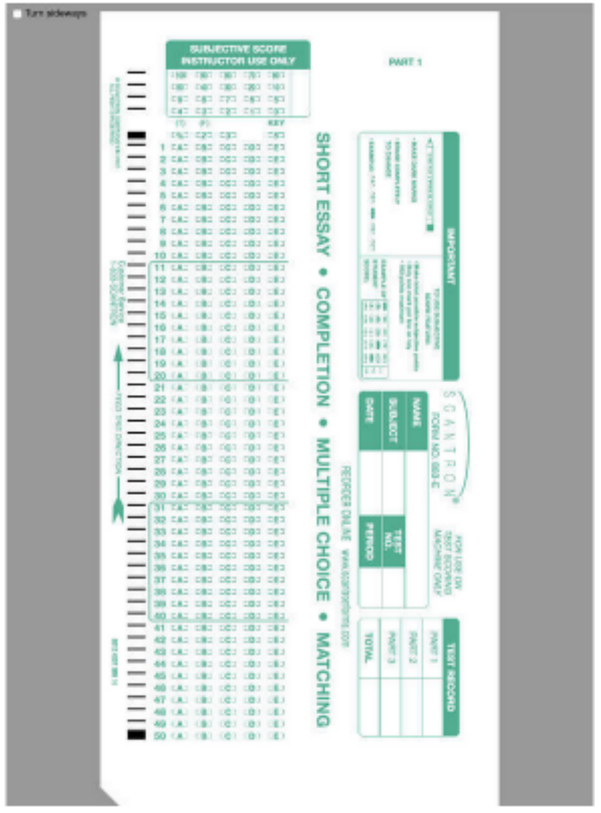
From the simple...

```
.container {
  display: grid;
  grid-template-columns: repeat(auto-fill, minmax(10em, 1fr));
}
```



...to the elaborate

by Andy Barefoot



by Jon Kantner

by Yuan Chuan

by Andy Barefoot

#2: CSS Custom Properties

Provides us **dynamic** variables in native CSS, comes with scoping, inheritance and the cascade.

Modify variable values on the fly

```
/* CSS that is applied to this presentation */
:root {
  --accent-colour: #ff4f5e
}

h2 {
  color: var(--accent-colour, #ff4f5e)
}
```

```
h2 {
  --accent-colour: #ff4f5e;
}
```

Credit to Mike Riethmuller for inspiring this live demo

```css
:root {
  --spacer: 0.5em;
  --columns: 1;
}

.card {
  background-color: #fff;
  max-width: calc((100% / var(--columns, 1)) - var(--spacer, 0.5em) * 2);
  border: 1px solid #6f777e;
  margin: var(--spacer, 0.5em);
  padding: var(--spacer, 0.5em);
}

/* Modify the variable values at specific breakpoints */
@media screen and (min-width: 480px) {
  :root {
    --spacer: 0.75em;
    --columns: 2;
  }
}

@media screen and (min-width: 720px) {
  :root {
    --spacer: 1em;
    --columns: 3;
  }
}
```

HTML CSS JS Result EDIT ON CODEPEN

```css
:root {
  --translation: 0;
}
.colorful {
  transform:
    translateX(calc(var(--translation) * 1vw))
    translateY(calc(var(--translation) * 1vh));/*
    rotate(calc(var(--translation) * .025turn));*/
  filter: hue-rotate(calc(var(--translation) * 4.5deg));

  transition: transform 5000ms ease-in-out, filter 5000ms linear;

  width: 10vmin;
  height: 10vmin;
  border-radius: 2.5vmin;
  background: hsl(0, 50%, 50%);
  will-change: transform, filter;
}

.go {
  --translation: 80;
}

body {
  height: 100vh;
  display: flex;
  overflow: hidden;
  background: hsl(0, 50%, 12%);
}
```

Code by Dan Wilson from Making Custom Properties (CSS Variables) More Dynamic

```
/* Retrieves and sanitises the value of a custom property. */
const getVariable = (styles, propName) => String(styles.getPropertyValue(propName)).trim()

/* Sets the value of a custom property at the document level */
const setVariable = (propName, value) => {
  document.documentElement.style.setProperty(propName, value)
}
```

Code based off CSS Custom Properties (CSS Variables) Sample by Sérgio Gomes

#3: Feature Queries

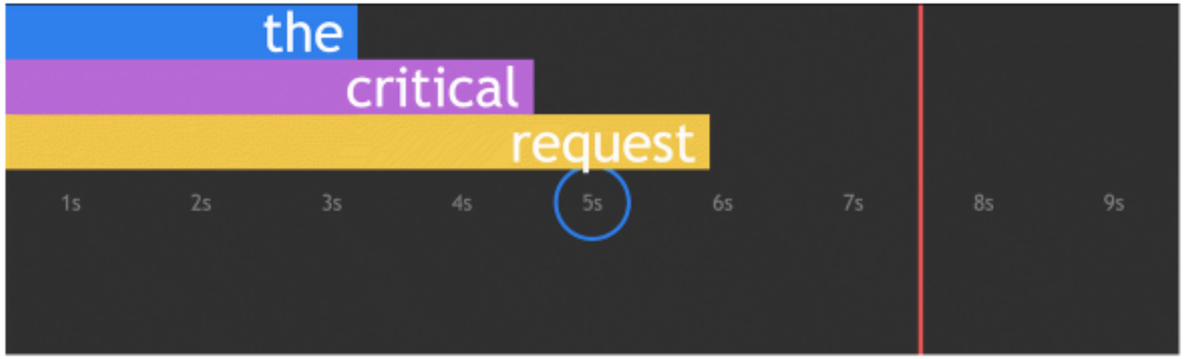
Built-in **feature detection** with native CSS

Using @supports (AKA feature queries)

```
.selector {
  /* Styles that are supported in old browsers */
}

@supports (property:value) {
  .selector {
    /* Styles for browsers that support the specified property */
  }
}
```

Styles for every browser



Browsers that don't support feature queries

Browsers that do support feature queries

Self-updating designs

Pre v52 (before Grid)

Pre v62 (before Shapes)

Current

Useful resources

- CSS Grid Layout Module Level 1
- CSS Grid Layout Module Level 2
- Grid by Example by Rachel Andrew
- CSS Grid Layout Examples by Igalia
- Basic concepts of grid layout by Rachel Andrew
- Deep Dive into Grid Layout Placement by Manuel Rego Casasnovas
- Grid Auto-Placement Is Ready by Manuel Rego Casasnovas
- CSS Grid Layout and positioned items by Manuel Rego Casasnovas
- Codrops CSS reference: Grid by Chen Hui Jing
- Things I've Learned About CSS Grid Layout by Oliver Williams
- Learn CSS Grid by Jen Simmons
- Examine grid layouts by MDN
- Grid Level 2 and Subgrid by Rachel Andrew
- CSS Custom Properties for Cascading Variables Module Level 1
- CSS Variables: Why Should You Care? by Rob Dodson
- Codrops CSS reference: Custom Properties by Chen Hui Jing
- It's Time To Start Using CSS Custom Properties by Serg Hospodarets
- A Strategy Guide To CSS Custom Properties by Mike Riethmuller
- Developing Inspired Guides with CSS Custom Properties (variables) by Andy Clarke
- Making Custom Properties (CSS Variables) More Dynamic by Dan Wilson
- Using CSS custom properties (variables) by MDN
- CSS Conditional Rules Module Level 3: Feature queries: the '@supports' rule
- Using Feature Queries in CSS by Jen Simmons
- Cascading Web Design with Feature Queries by Chen Hui Jing
- The Magic of Feature Queries, Part 1 – 5/7 Resilient CSS by Jen Simmons
- The Magic of Feature Queries, Part 2 – 6/7 Resilient CSS by Jen Simmons
- Feature Queries and Grid by Rachel Andrew
- @supports by MDN

Merci!

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Font used is Zilla Slab, by Typotheque