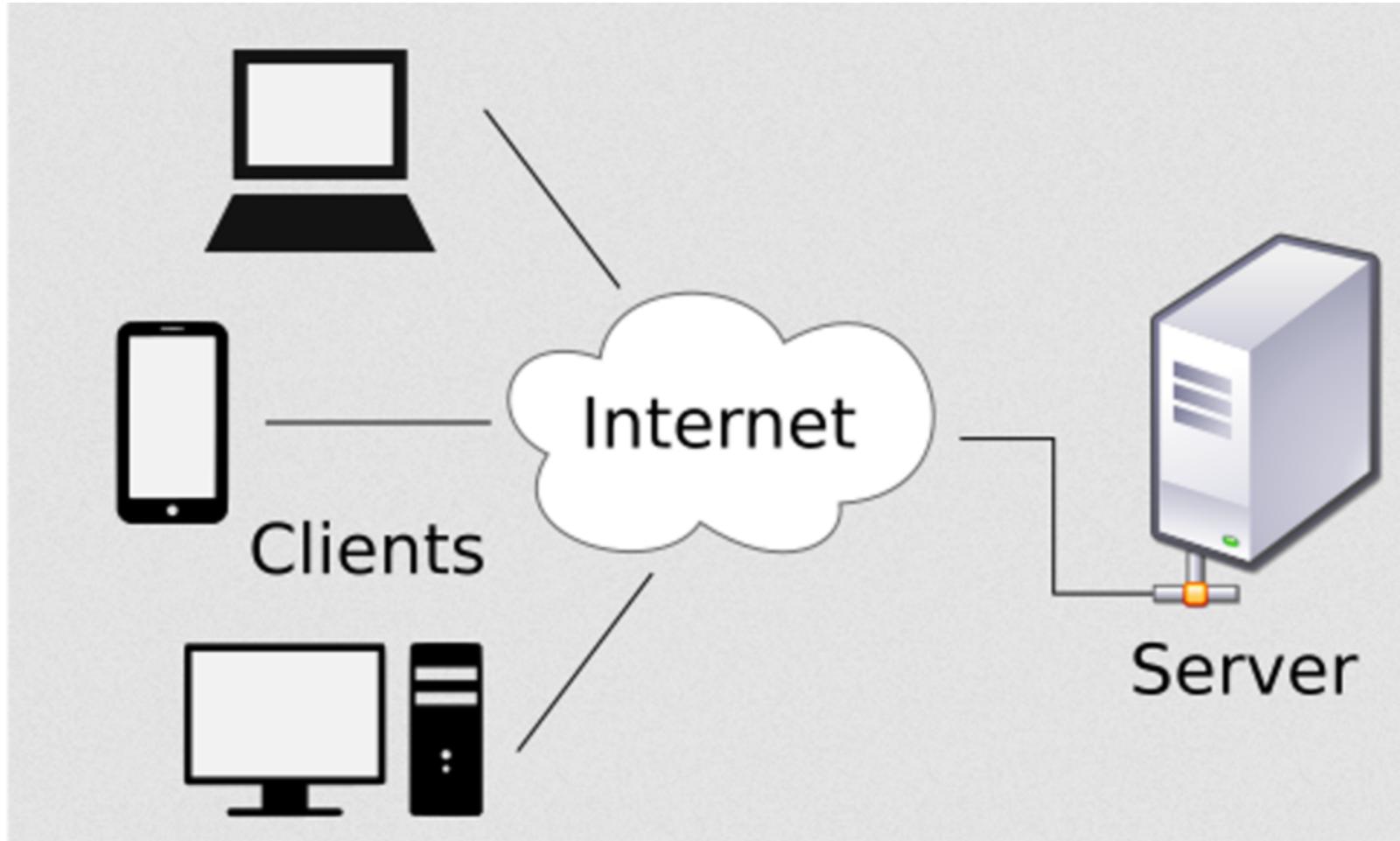


Grundlagen

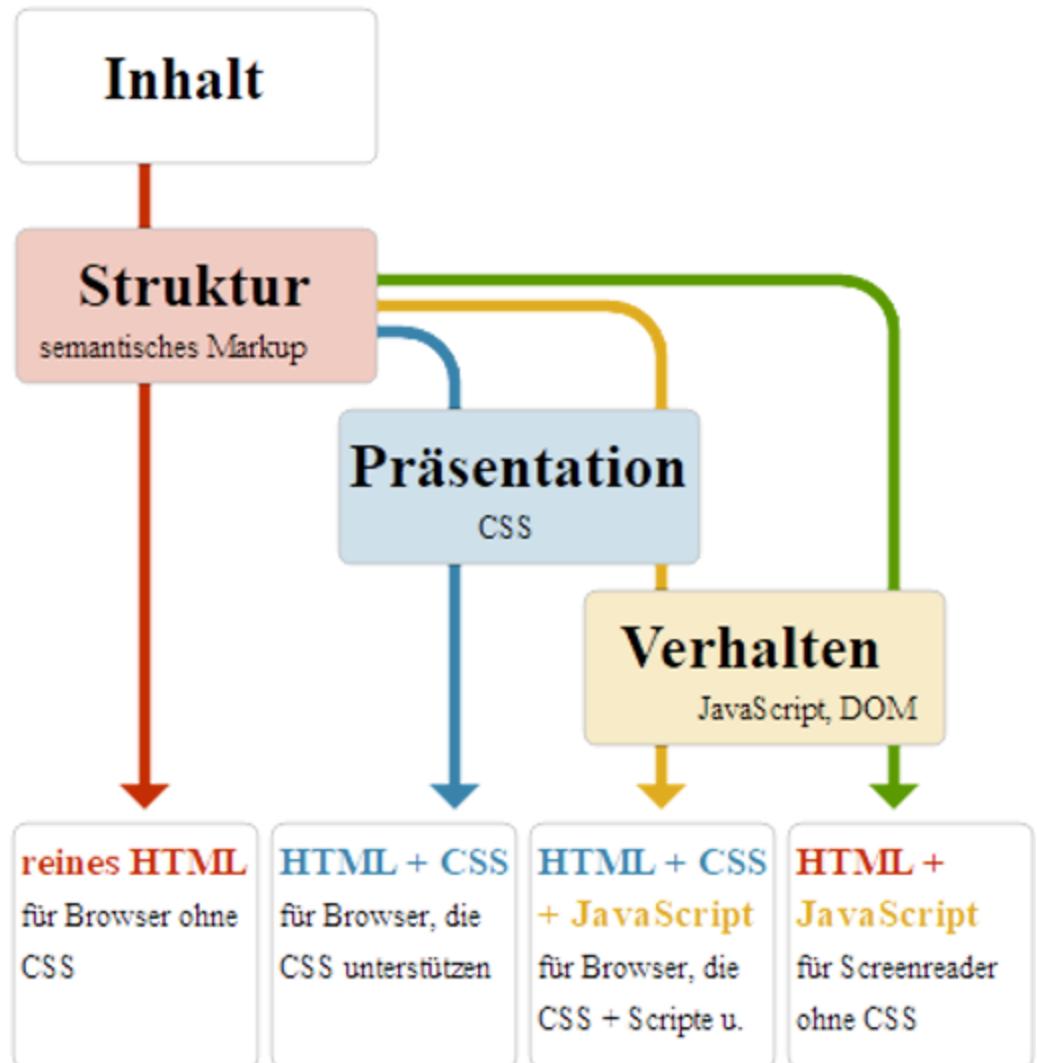
Client - Server



URL

<https://www.philipackermann.de:80/books/web.html?language=de#chapter7>

Aufbau von Webapplikationen





Linux



Apache

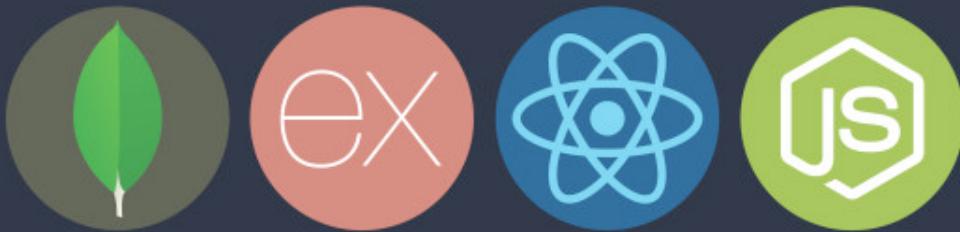


MySQL



PHP

MERN



Werkzeuge

Inspektor Konsole Debugger Netzwerkanalyse Stilbearbeitung Laufzeitanalyse Speicher ... X

HTML durchsuchen + ⚒

Stile filtern :hov .cls + 📁

Element ⓘ Inline

<!DOCTYPE html>
<html lang="de"> scroll
► <head> ... </head>
▼ <body>
► <header> ... </header>
► <nav> ... </nav>
► <div class="clear"></div>
► <main> ... </main>
► <footer> ... </footer>
</body>
</html>

body, h1, h2, h3, h4, a, p, blockquote, cite ⓘ #ddd;

body ⓘ dark.css:2 @prefers-color-scheme: dark background-color: #333;

body ⓘ style.css:8 font-family: sans-serif;

body ⓘ normalize.css:23 margin: 0;

Geerbt von html

html ⓘ normalize.css:11 line-height: 1.15; -webkit-text-size-adjust: 100%; ⚒

Layout Berechnet Änderungen Schriftarten

Flexbox

Flex-Behälter oder -Element auswählen, um fortzufahren.

Raster

Raster hervorheben

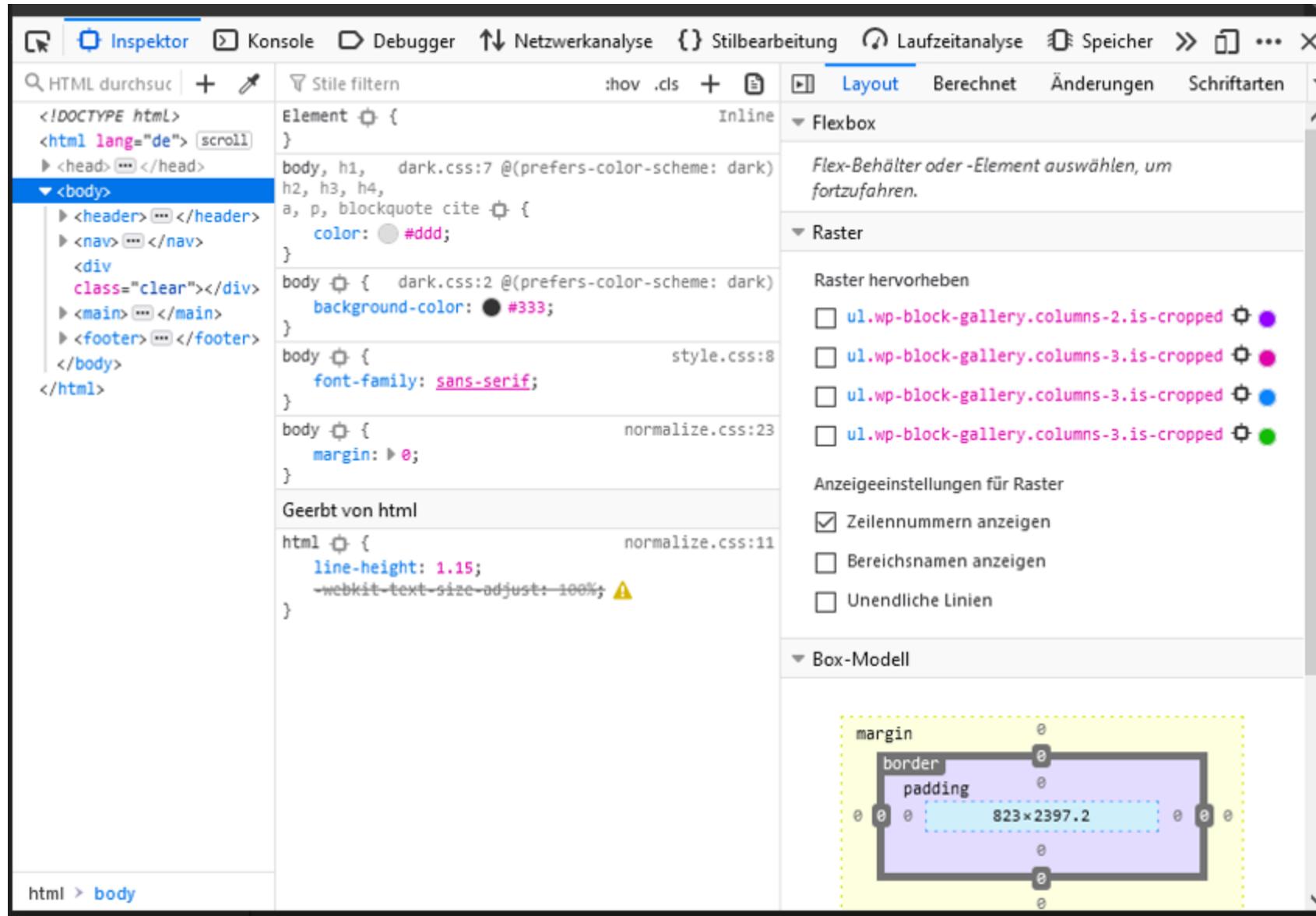
ul.wp-block-gallery.columns-2.is-cropped ⚒ ●
 ul.wp-block-gallery.columns-3.is-cropped ⚒ ●
 ul.wp-block-gallery.columns-3.is-cropped ⚒ ●
 ul.wp-block-gallery.columns-3.is-cropped ⚒ ●

Anzeigeeinstellungen für Raster

Zeilennummern anzeigen
 Bereichsnamen anzeigen
 Unendliche Linien

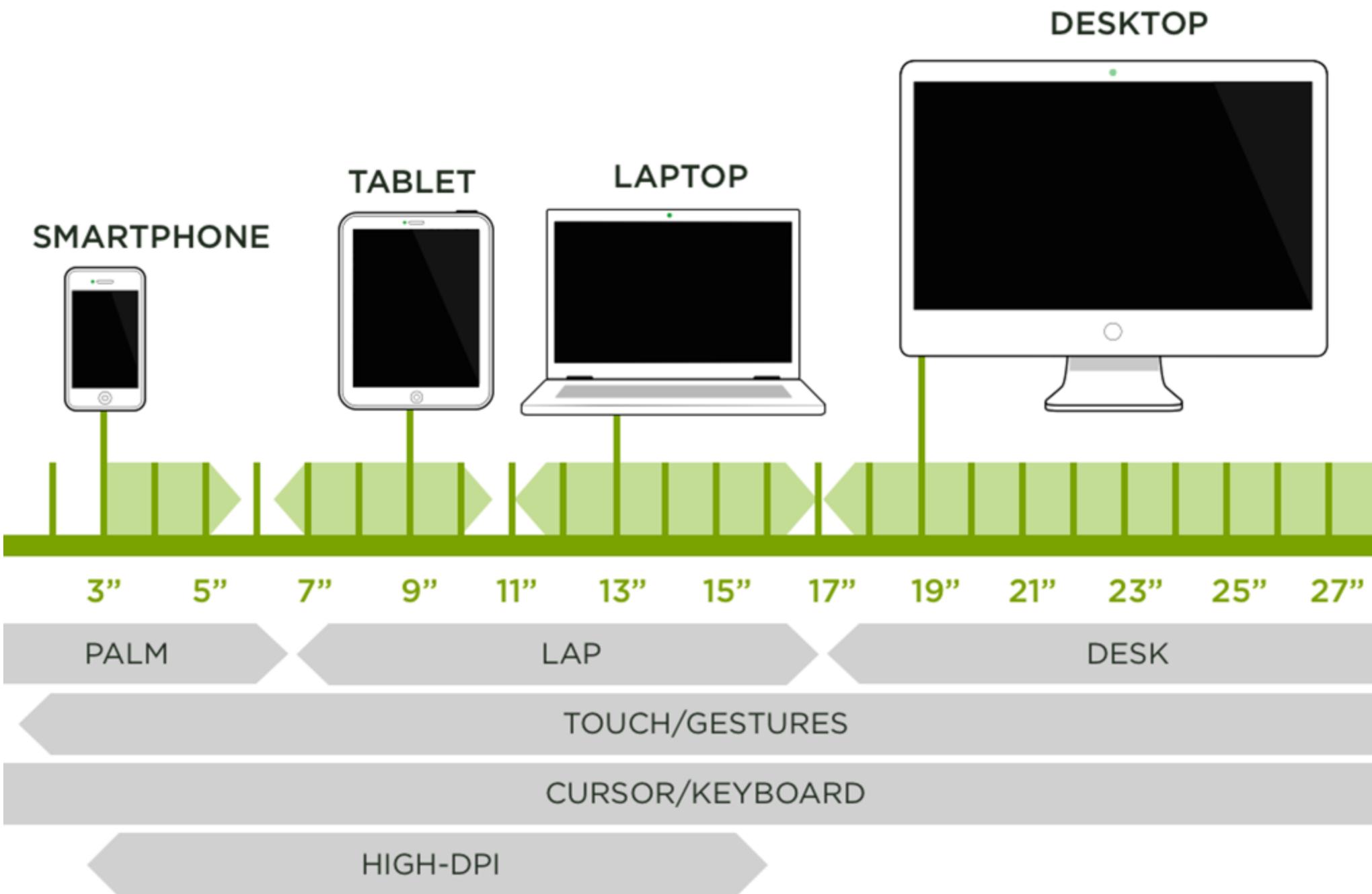
Box-Modell

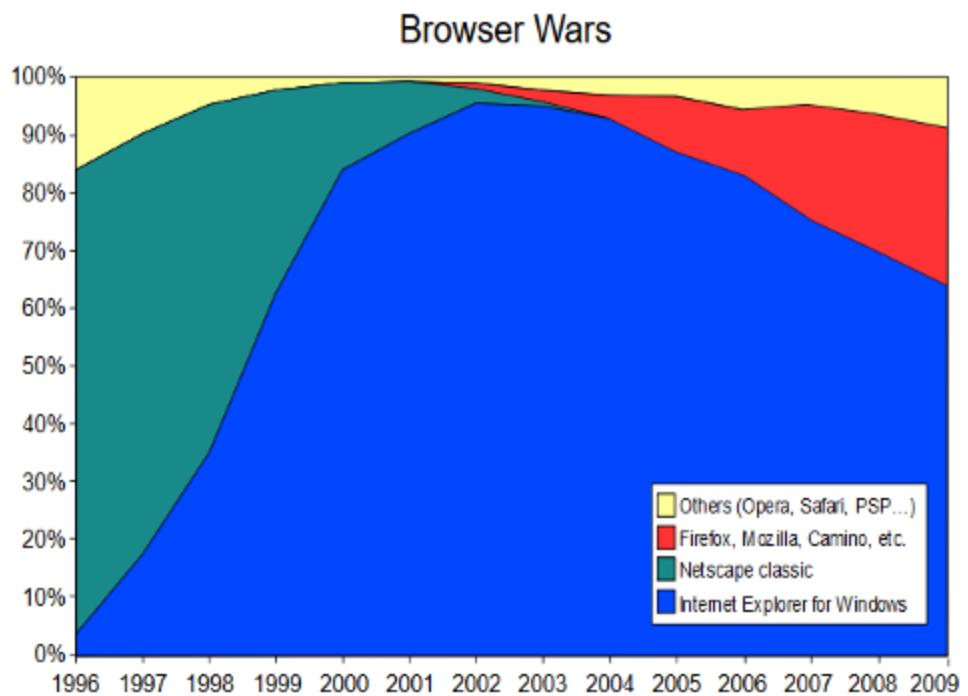
margin 0
border 0
padding 0
823x2397.2

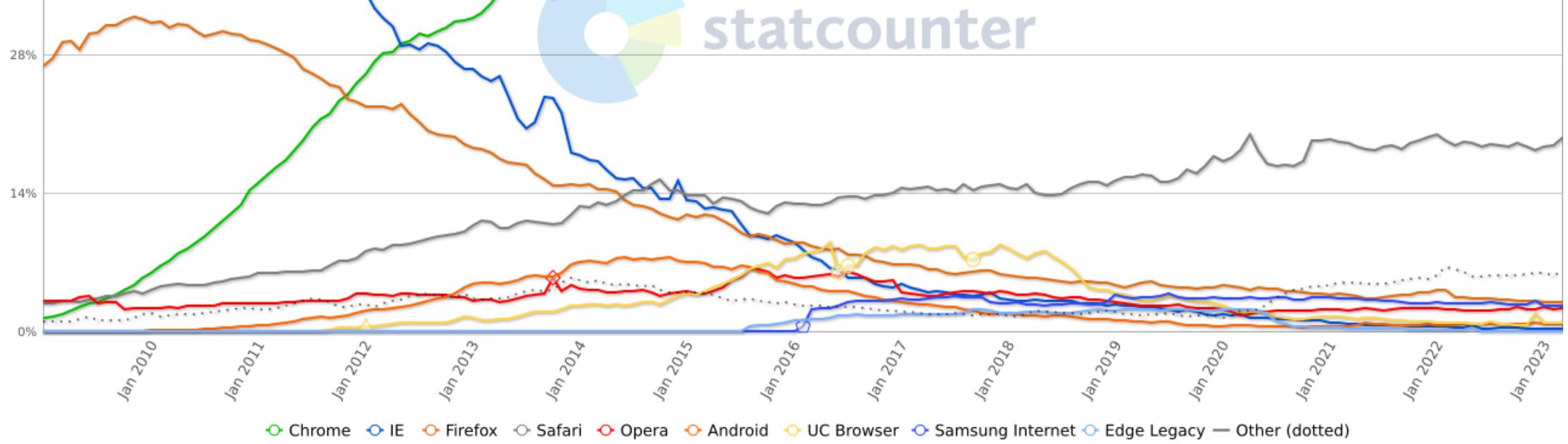


The screenshot shows the Firefox Developer Tools interface with the 'Inspektor' (Inspector) tab selected. On the left, the element tree displays the HTML structure with some nodes expanded. The main pane shows CSS rules for the 'body' element and its inheritance from 'html'. On the right, the 'Layout' panel is active, showing the 'Box-Model' diagram for the 'body' element, which has dimensions of 823x2397.2 and padding, border, and margin all set to 0. There are also sections for Flexbox and Raster settings. A status bar at the bottom indicates the current path is 'html > body'.

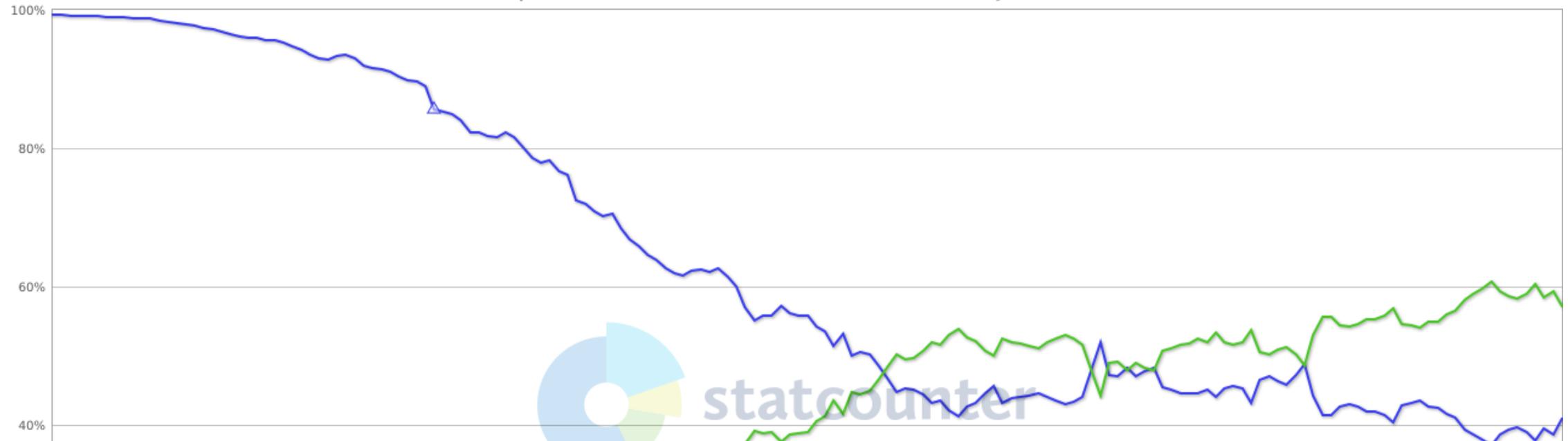
Webseiten strukturieren mit HTML







StatCounter Global Stats
Desktop vs Mobile vs Tablet vs Console Market Share Worldwide from Jan 2009 - Mar 2023



Layoutkonzepte

- <http://info.cern.ch/hypertext/WWW/TheProject.html>
- Framesets
- Tabellen
- Cascading Style Sheets (CSS)
- Fixed vs. Liquid Layout
- Responsive Webdesign
- Device Agnostic
- Mobile First

Grundstruktur

```
<!DOCTYPE html>
<html lang="de">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Titel</title>
  </head>
  <body>
  </body>
</html>
```

Webseiten gestalten mit CSS

Box Model

▼ Box Model

The diagram illustrates the standard box model with a central light blue box labeled "300x150". It is surrounded by a black border, a purple padding layer, and a yellow margin layer. The overall width is 390px and height is 240px. The margin is 40px on all sides, the padding is 5px on all sides, and the border is 40px on all sides.

390x240 static

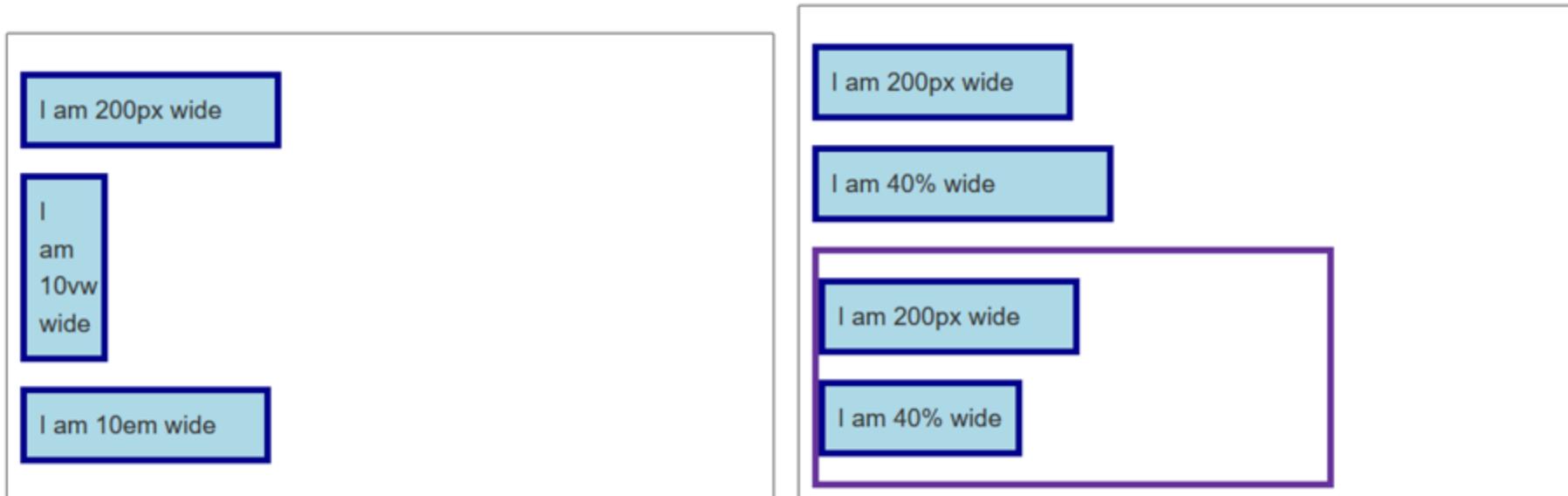
▼ Box Model Properties

box-sizing	content-box	line-height	28.8px
display	block	position	static
float	none	z-index	auto

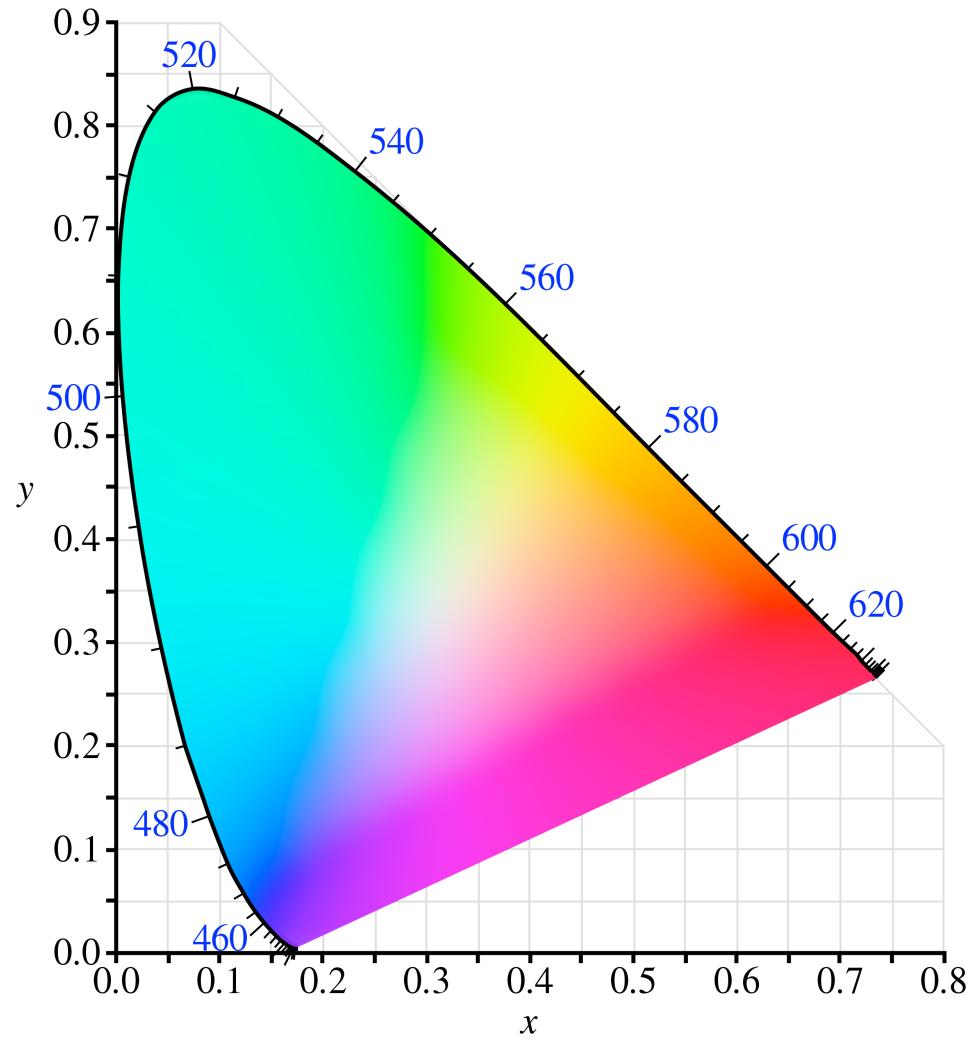
The diagram compares the standard box model (left) with the alternate box model (right). The standard box model shows a light blue content area with a purple border, set against a yellow background. The alternate box model shows a light blue content area with a purple border, set against a white background. A callout points to the standard model with the text "use the standard box model." and to the alternate model with the text "use the alternate box model."

Einheiten

- Absolute Größen: px (cm , mm , ...) -> sparsam verwenden
- Relative Größen
 - em : Schriftgrösse des Elternelements
 - rem : Schriftgrösse des Wurzelelements
 - vw , vh : viewport breite, viewport höhe

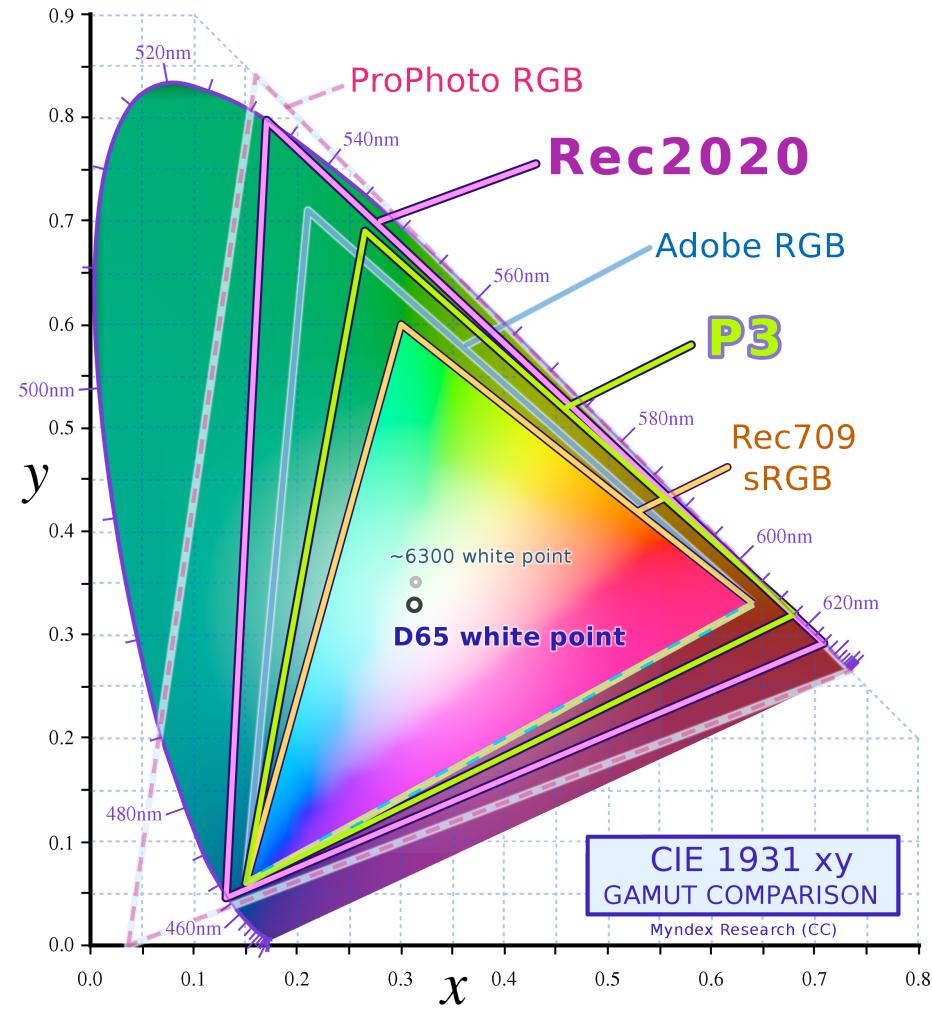


Farben



CIE 1931 Farbraum

Vergleich Farbräume



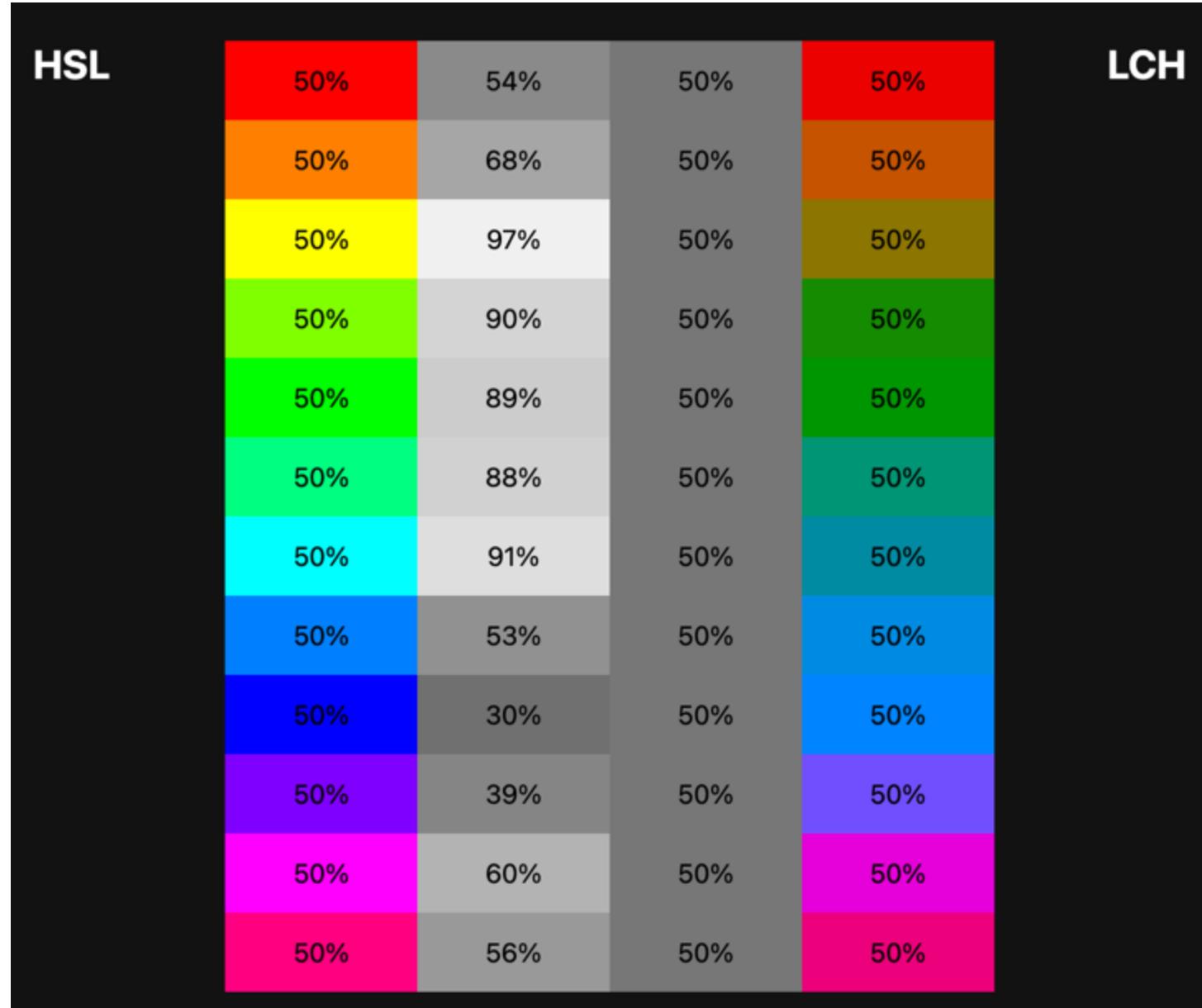
Farben in CSS

sRGB Farbraum

- Farbnamen: `color: darkblue;`
- Hex-Werte: `color: #ffa500;`
- RGBA-Werte (mit Deckkraft): `color: rgba(169, 169, 169, 0.5)`
- HSL-Werte (Hue, Saturation, Lightness): `color: hsl(60, 100, 50)`

Alle sichtbaren Farben

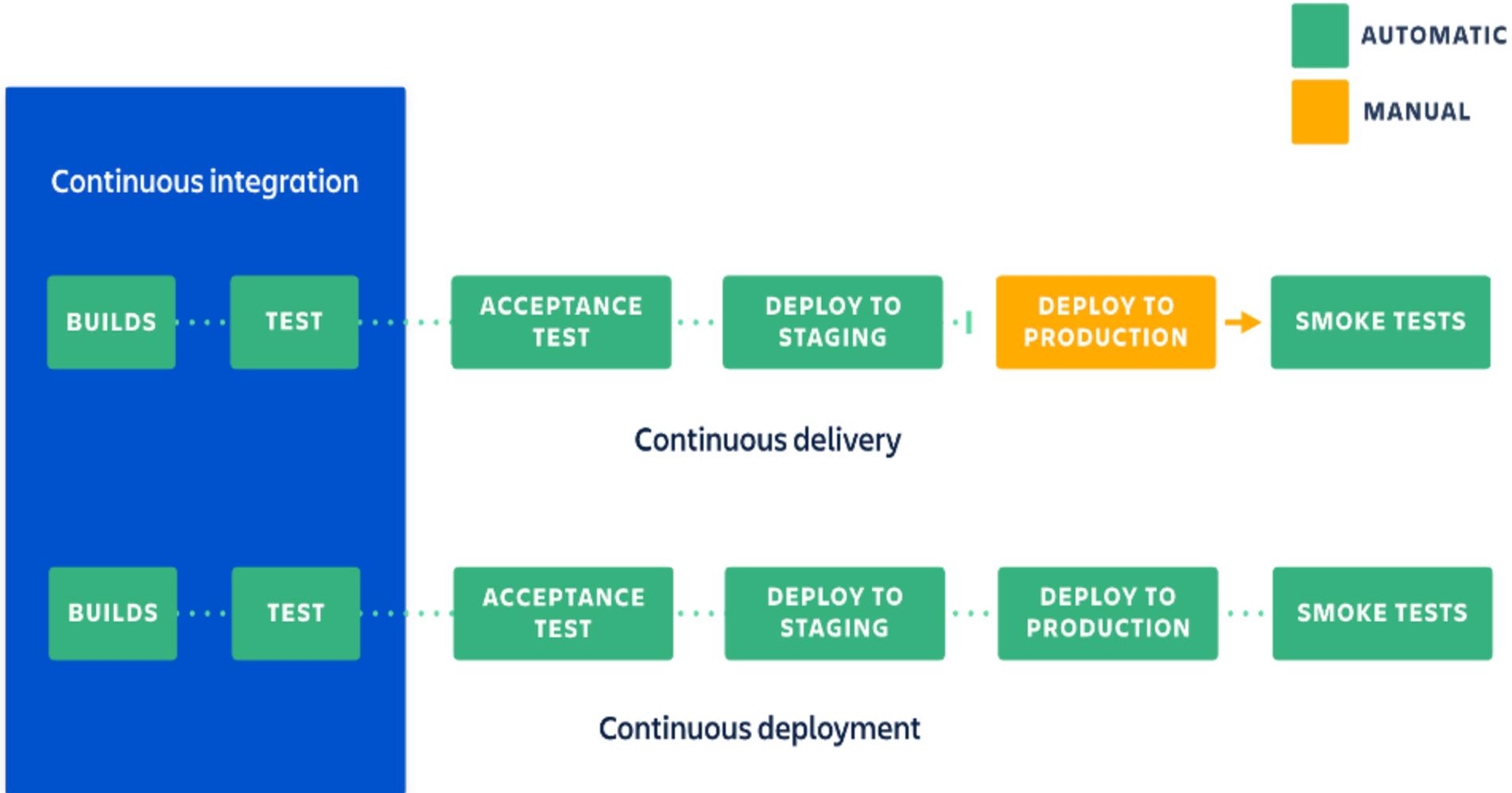
- LCH (Lightness Chroma Hue / Opacity): `color: lch(29.2345% 44.2 27 / 0.5)`
- Oklch: `color: oklch(40.1% 0.123 21.57)`
- CIELAB (Lightness, red-green, blue-yellow): `color: lab(29.2345% 39.3825 20.0664);`
- Oklab: `color: oklab(40.1% 0.1143 0.045);`



<https://codepen.io/web-dot-dev/pen/poZgXxy>

Webanwendungen deployen und hosten

CI / CD



Continuous Integration

- Kein Branching, alle Änderungen werden von allen Teammitgliedern mehrmals täglich in den Master Branch eingeccheckt.
- Dieser Branch ist jederzeit lauffähig
- Dadurch werden die Releases vereinfachen
- Eine sehr hohe, automatische Testabdeckung ist zwingend

Continuous Delivery

- Low risk releases
- Faster time to market
- Higher quality
- Lower costs
- Better products
- Happier teams

Principles

- Build quality in
- Work in small batches
- Computers perform repetitive tasks, people solve problems
- Relentlessly pursue continuous improvement
- Everyone is responsible

<https://www.continuousdelivery.com/>

Modern Software Engineering

Begriffe

GitOps: Git als Single Source of Truth für alles was für die Applikation relevant ist.

Webanwendungen organisieren und verwalten

Webseiten interaktiv machen mit JavaScript

Web-APIs verwenden

Webanwendungen testen

Webprotokolle verwenden

HTTP

Websockets

Webformate verwenden

Rastergrafiken

Vektorgrafiken

Single-Page-Applikationen implementieren

JavaScript auf der Serverseite verwenden

Webservices implementieren

REST

Daten in Datenbanken speichern

Webanwendungen absichern

Die Performance von Webanwendungen optimieren