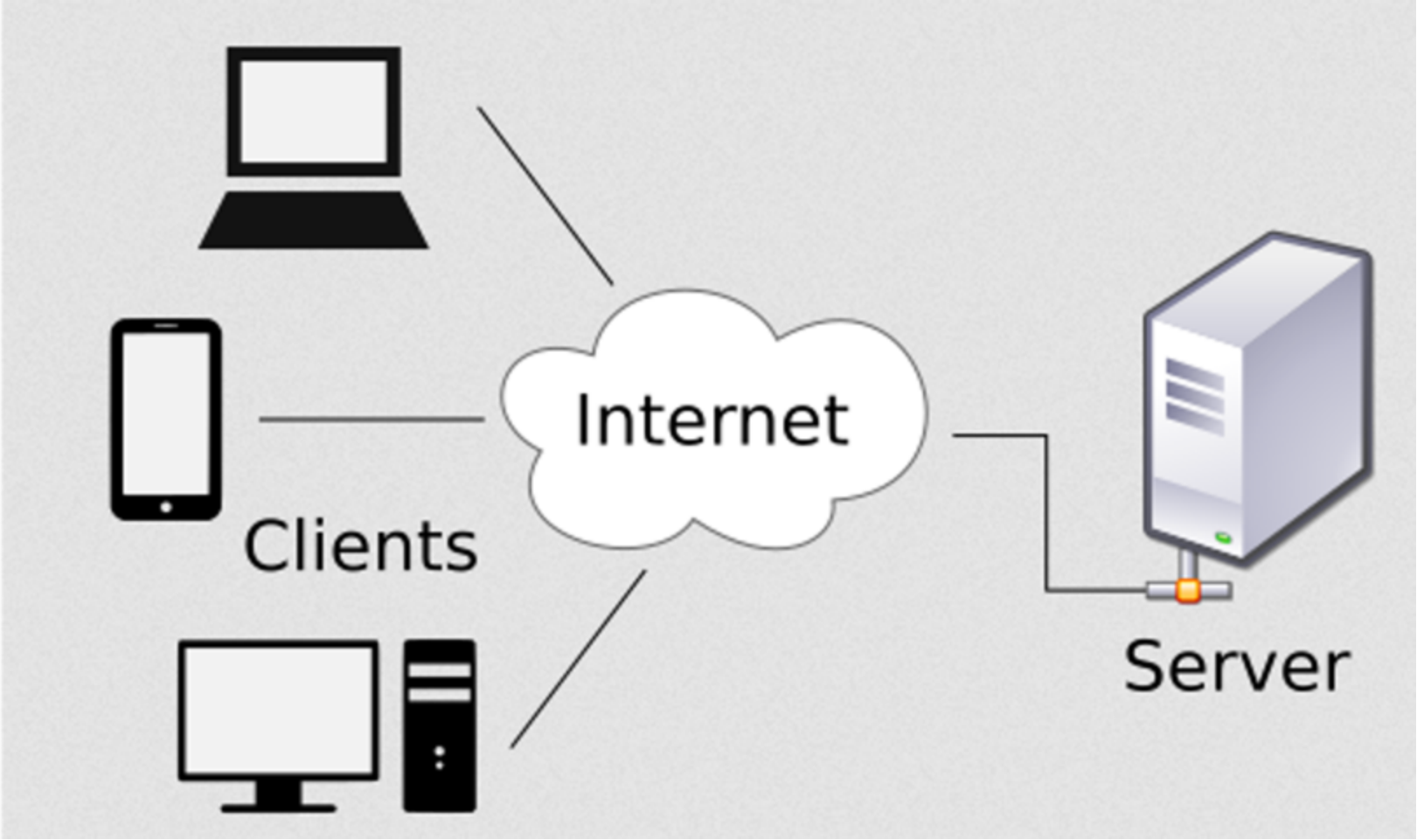
Grundlagen

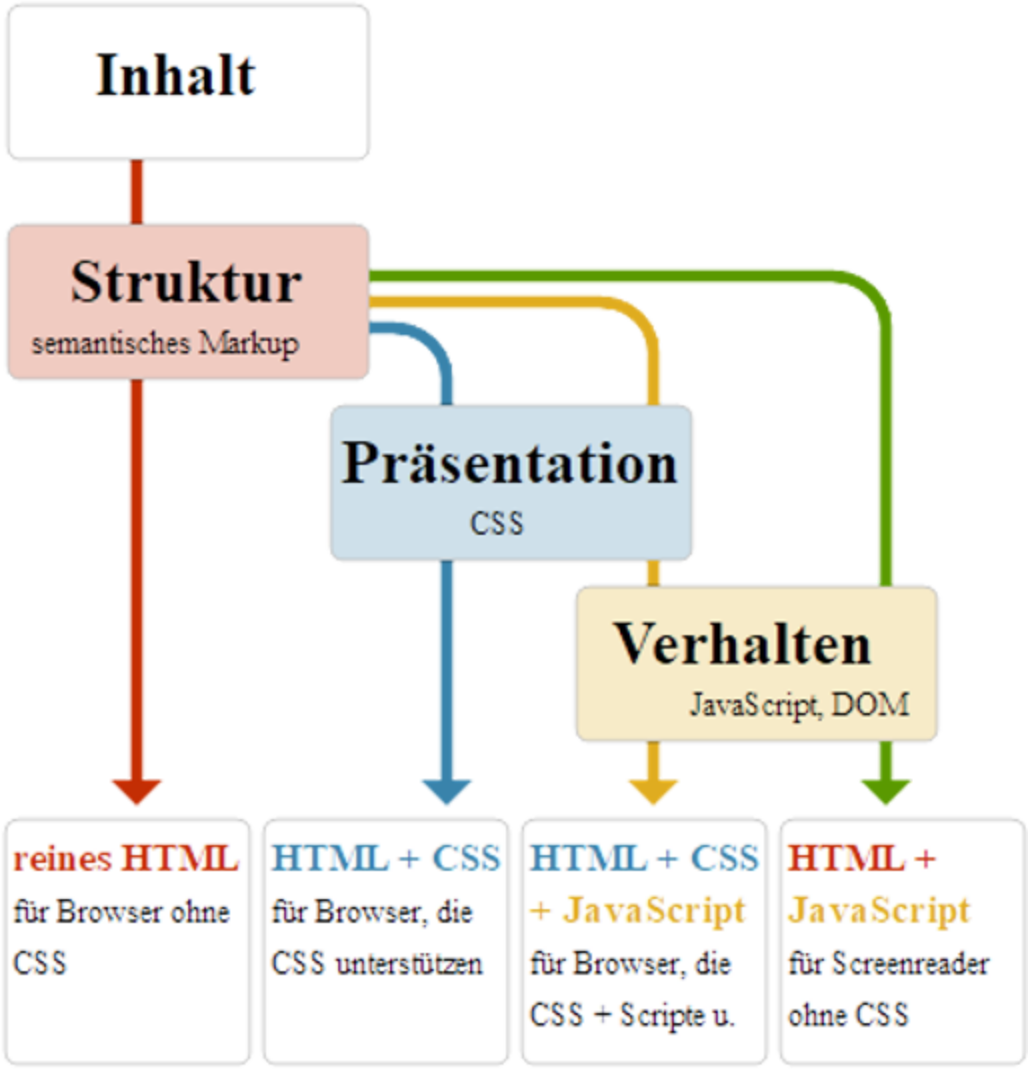
Client - Server



URL

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

Aufbau von Webapplikationen



Linux

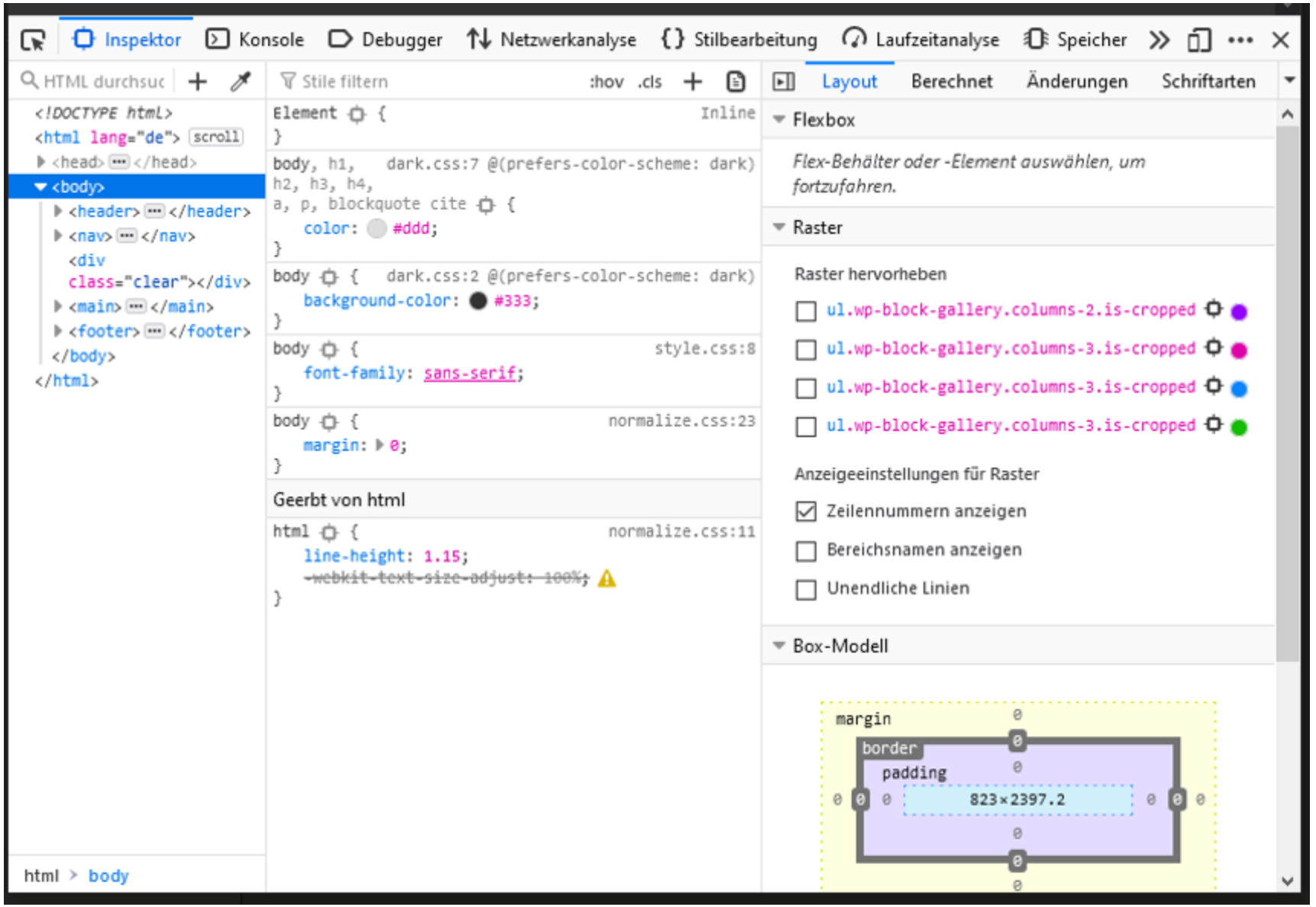
Apache

MySQL

PHP

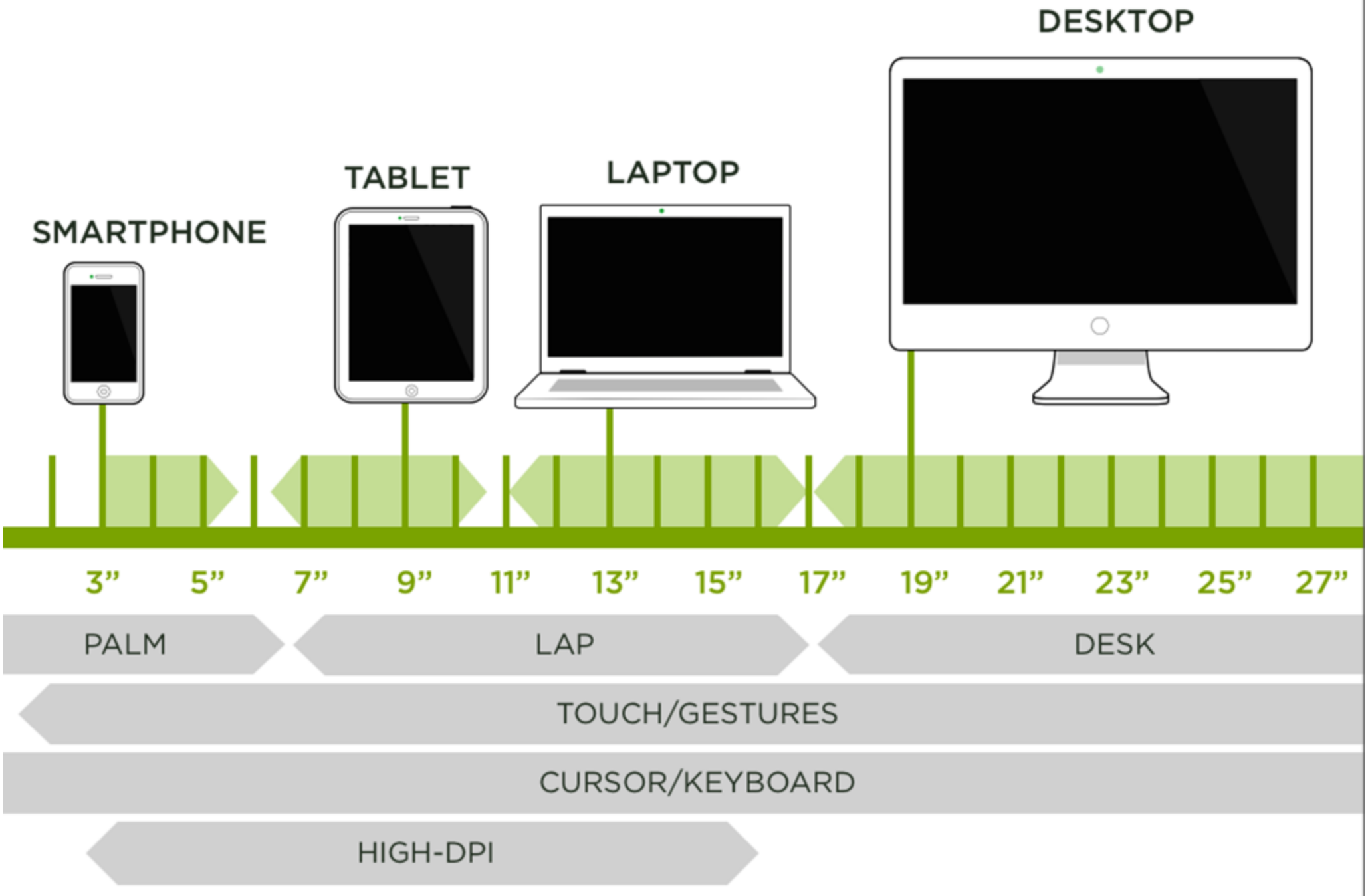
MERN

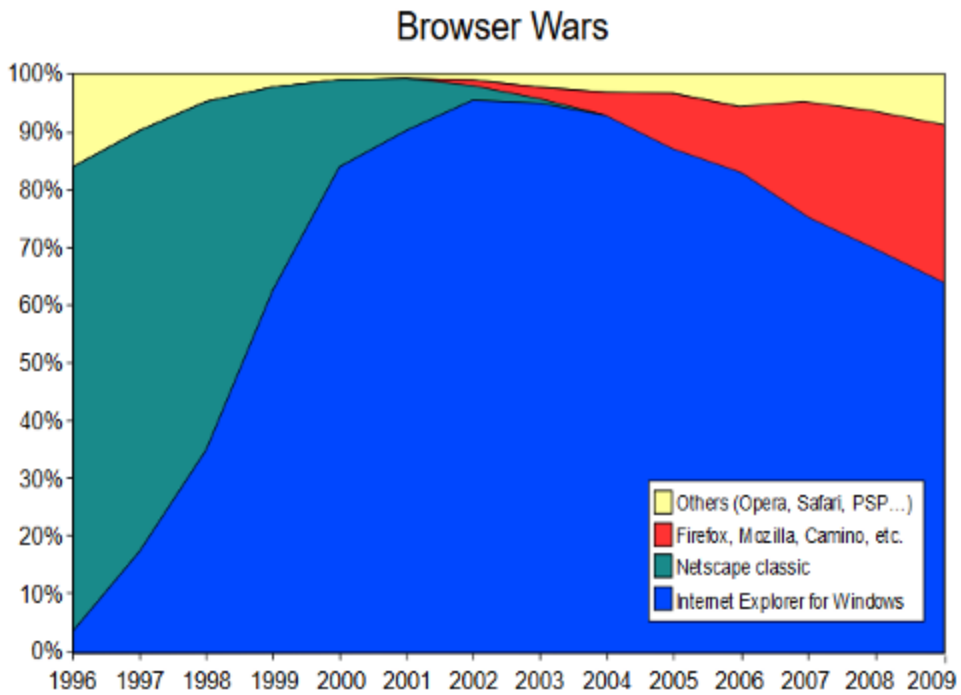
Werkzeuge

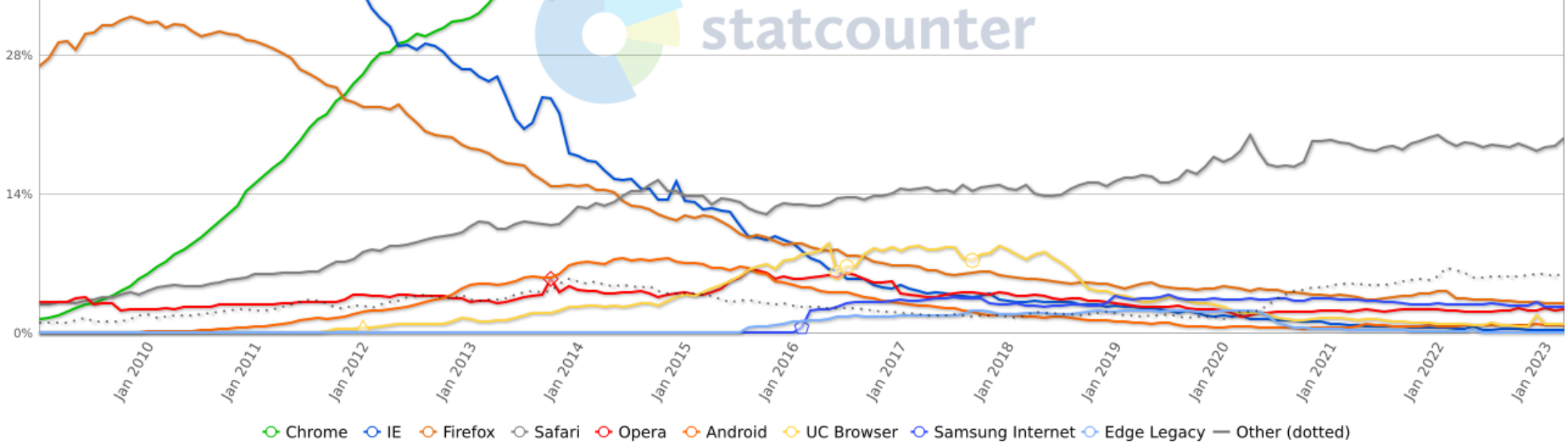

Inspektor
Konsole
Debugger
Netzwerkanalyse
Stilbearbeitung
Laufzeitanalyse
Speicher
HTML durchsuc
Stile filtern
:hov .cls
<!DOCTYPE html>
<html lang="de"> scroll
<head> ... </head>
<body>
<header> ... </header>
<nav> ... </nav>

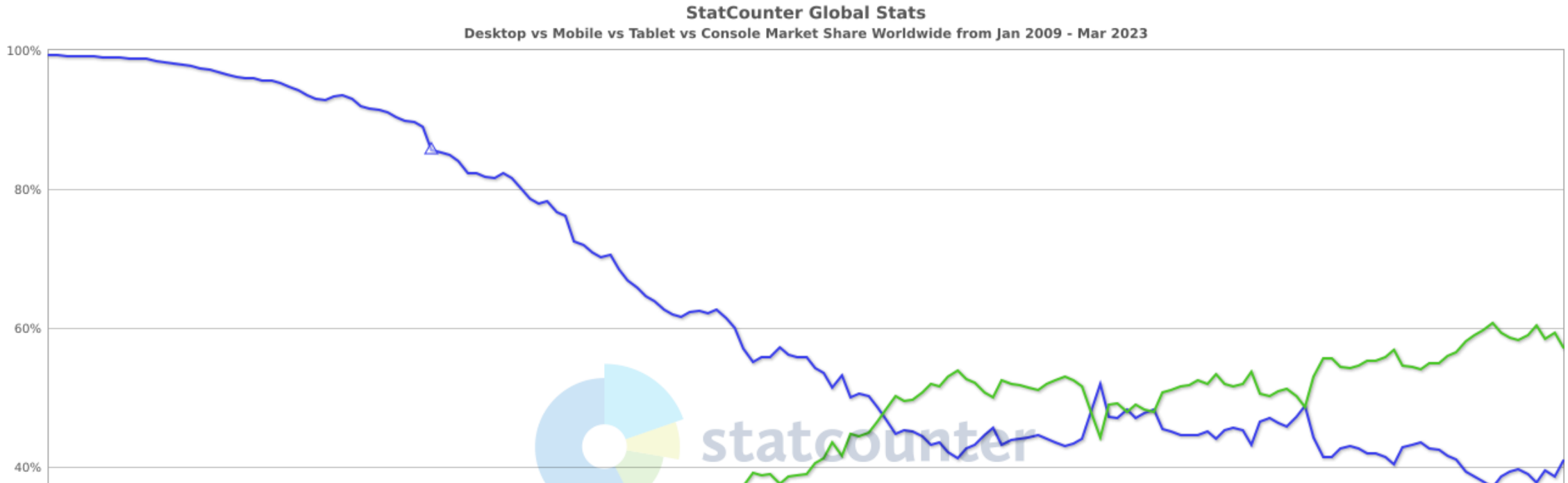
<main> ... </main>
<footer> ... </footer>
</body>
</html>
Element { Inline
}
body, h1, h2, h3, h4, a, p, blockquote cite { dark.css:7 @(prefers-color-scheme: dark)
color: #ddd;
}
body { dark.css:2 @(prefers-color-scheme: dark)
background-color: #333;
}
body { style.css:8
font-family: sans-serif;
}
body { normalize.css:23
margin: 0;
}
Geerbt von html
html { normalize.css:11
line-height: 1.15;
-webkit-text-size-adjust: 100%;
}
html > body
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
border
padding
823×2397.2

Webseiten strukturieren mit HTML


DESKTOP
TABLET
LAPTOP
SMARTPHONE
3”
5”
7”
9”
11”
13”
15”
17”
19”
21”
23”
25”
27”
PALM
LAP
DESK
TOUCH/GESTURES
CURSOR/KEYBOARD
HIGH-DPI


Browser Wars
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Others (Opera, Safari, PSP...)
Firefox, Mozilla, Camino, etc.
Netscape classic
Internet Explorer for Windows


28%
14%
0%
Jan 2010
Jan 2011
Jan 2012
Jan 2013
Jan 2014
Jan 2015
Jan 2016
Jan 2017
Jan 2018
Jan 2019
Jan 2020
Jan 2021
Jan 2022
Jan 2023
Chrome
IE
Firefox
Safari
Opera
Android
UC Browser
Samsung Internet
Edge Legacy
Other (dotted)


StatCounter Global Stats
Desktop vs Mobile vs Tablet vs Console Market Share Worldwide from Jan 2009 - Mar 2023
100%
80%
60%
40%

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

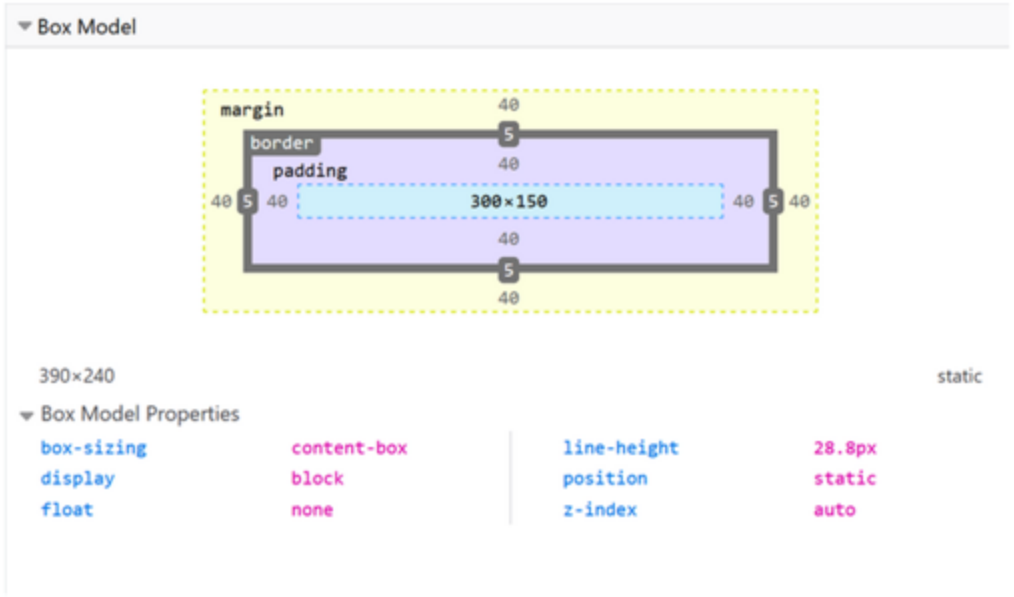
Grundstruktur

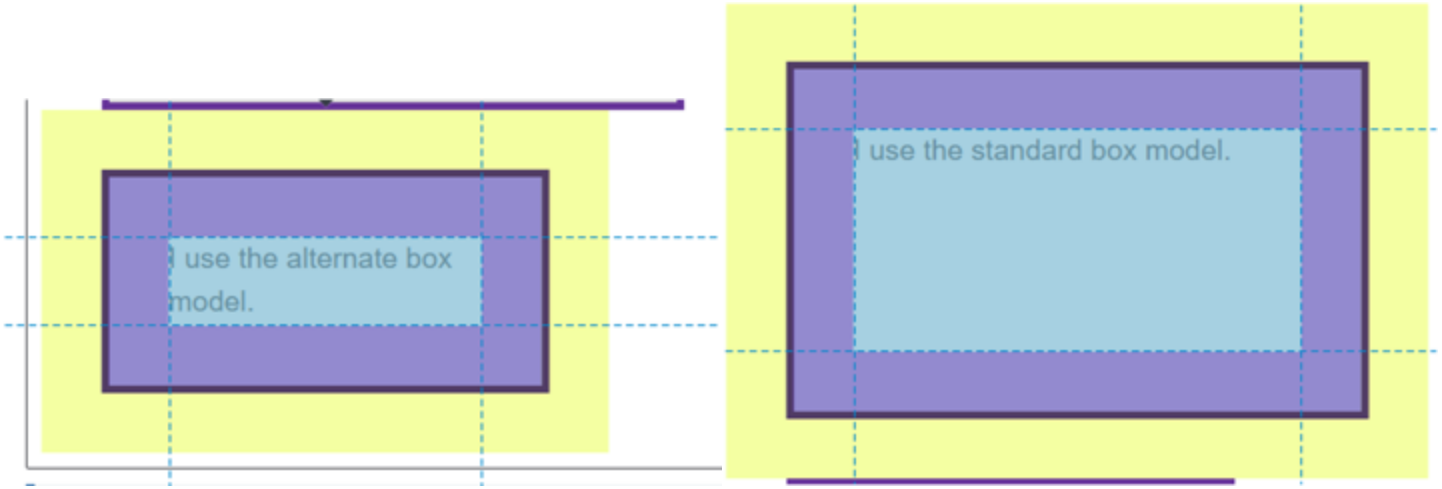
```
<!DOCTYPE html>
<html lang="de">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Titel</title>
  </head>
  <body>

  </body>
</html>
```

Webseiten gestalten mit CSS

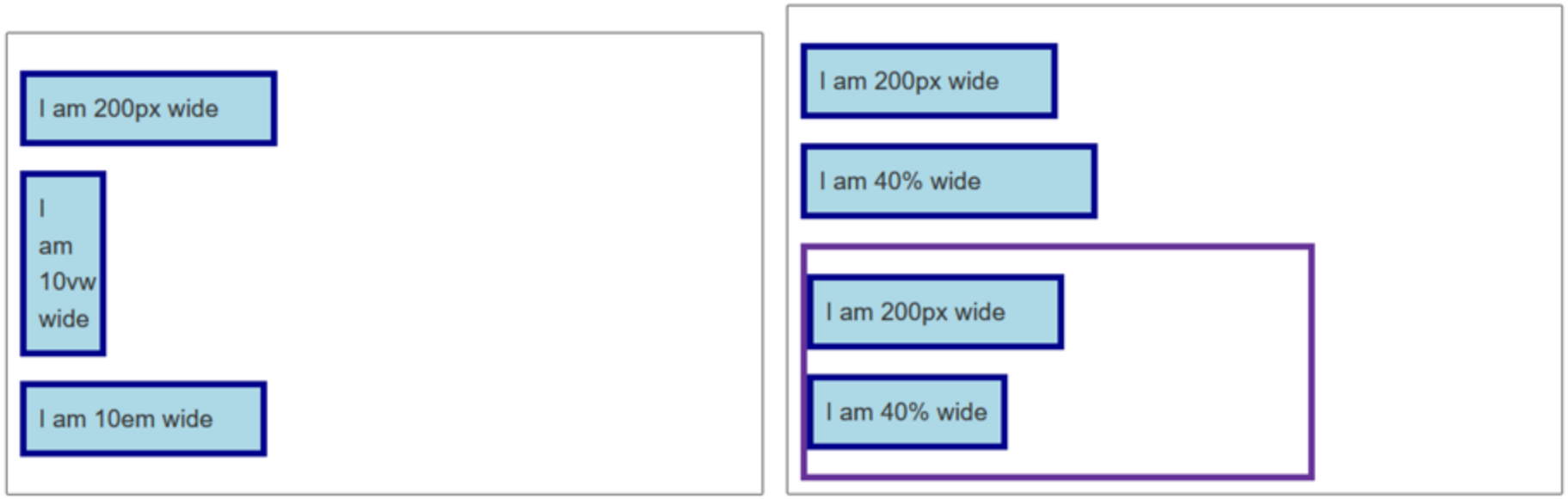
Box Model


Box Model
margin
40
border
5
padding
40
40
40
300×150
40
5
40
40
5
40
390×240
static
Box Model Properties
box-sizing
content-box
display
block
float
none
line-height
28.8px
position
static
z-index
auto


use the alternate box model.
use the standard box model.

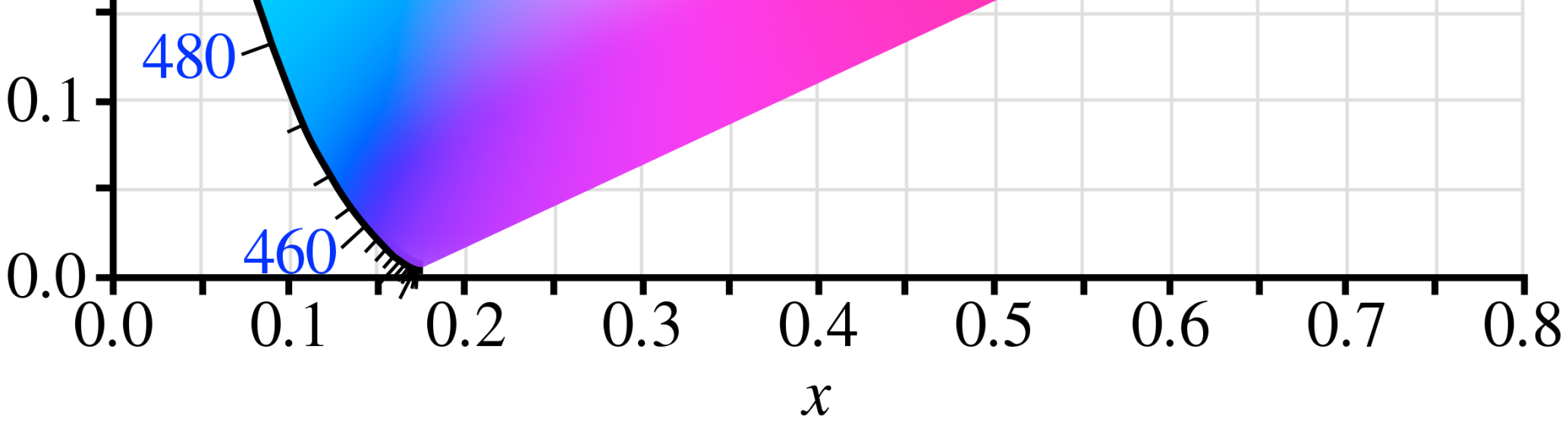
Einheiten

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

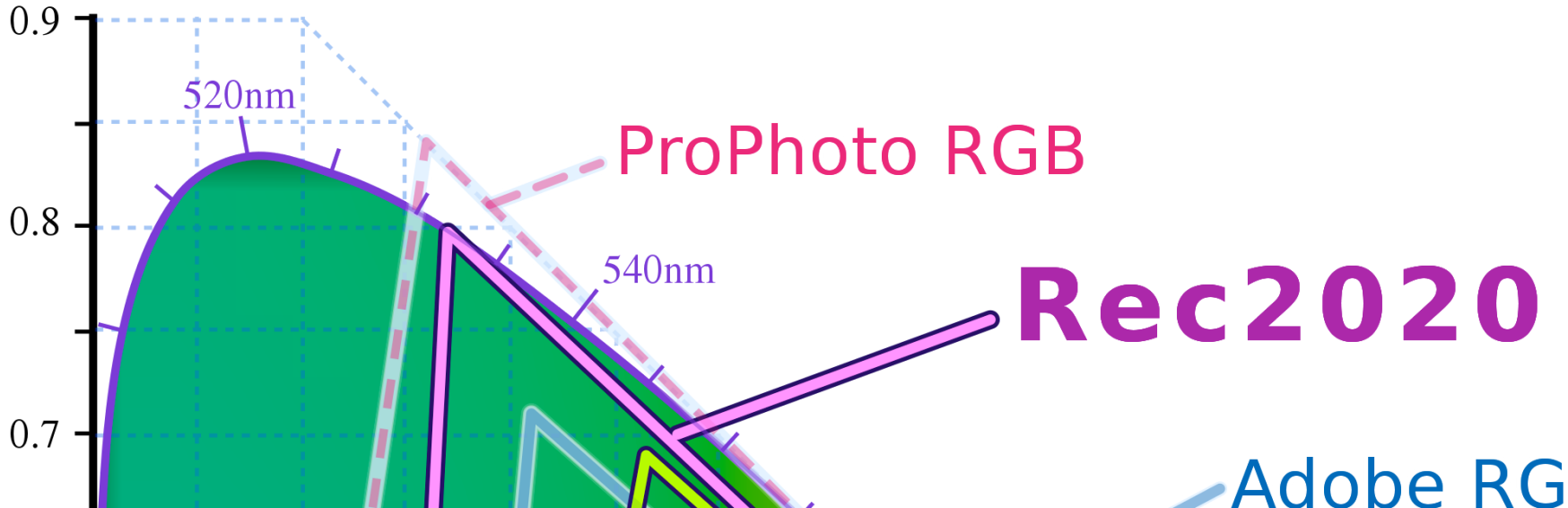


Farben

CIE 1931 Farbraum



Vergleich Farbräume



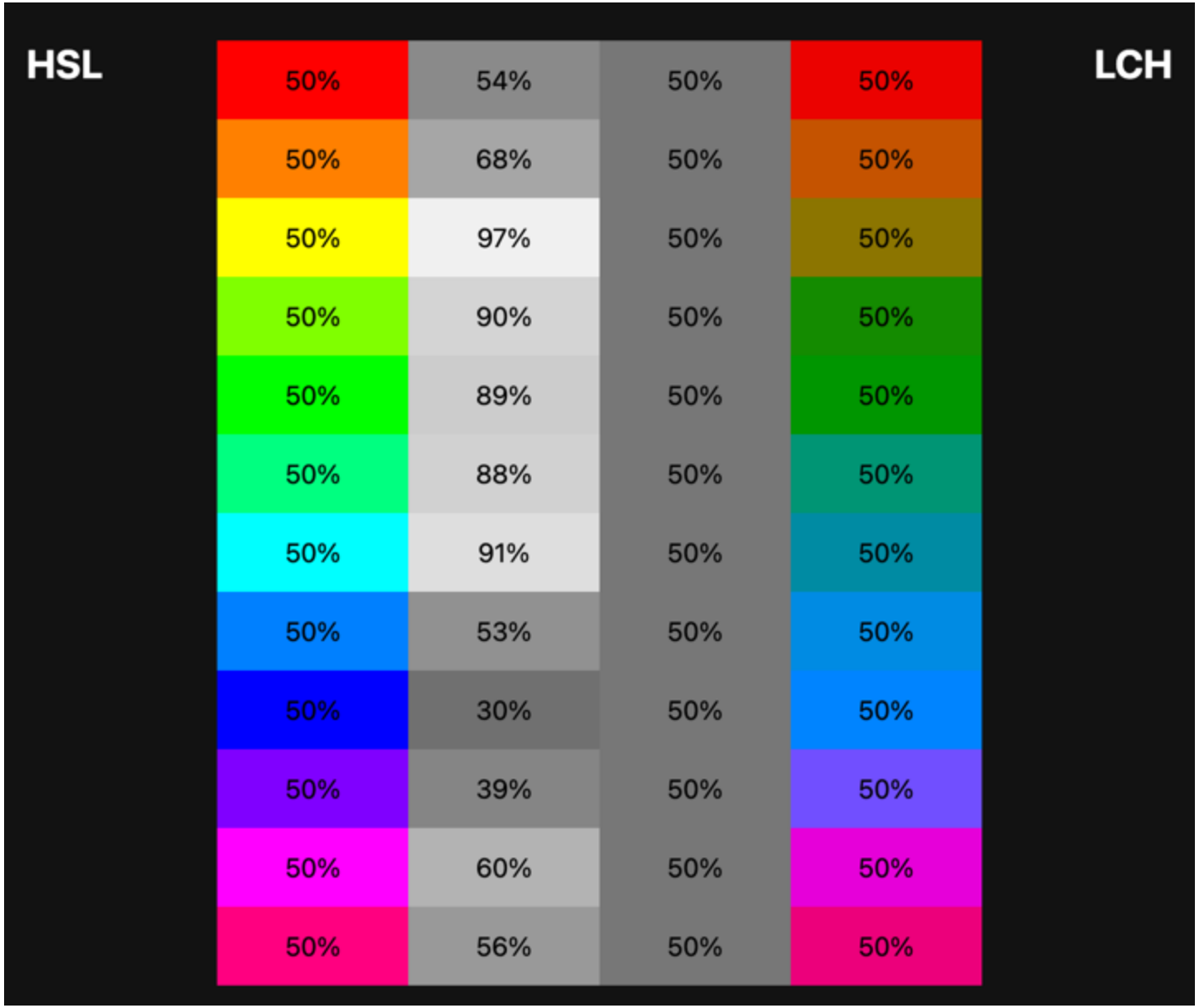
Farben in CSS

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

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