

# **Size** in web typography

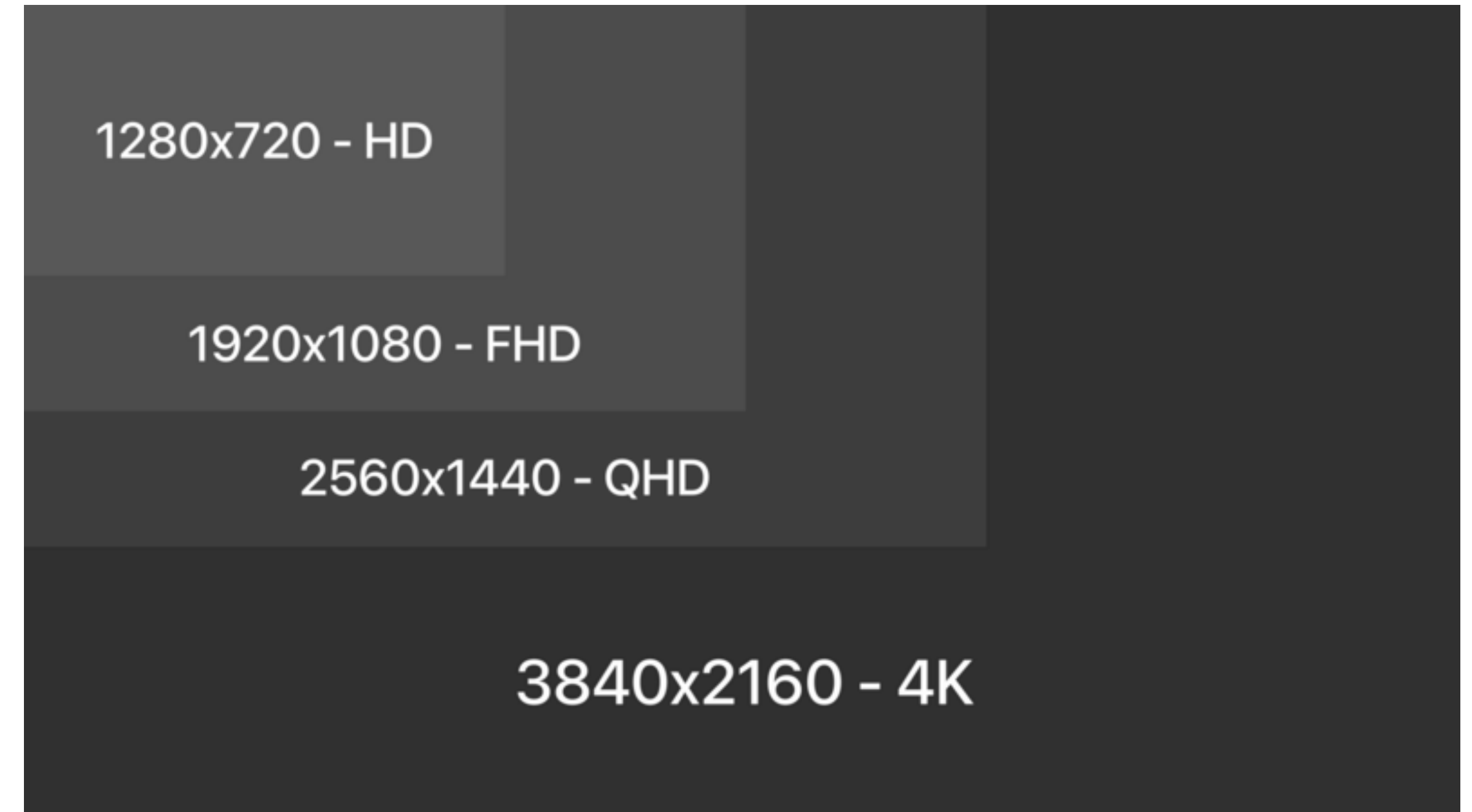
**Helping my disabled father, as well as my own aging eyes cope.**

**Shimi Halperin, v1 - August, 17, 2024**

# Physical PPI

(Pixels Per Inch)

- Find the diagonal Pixels ( $a^2 + b^2 = c^2$ )
- Divide by the physical diagonal dimension of the monitor
- e.g. for a 27" 4k monitor:
  - diagonal pixels  
 $(3840^2 + 2160^2)^{1/2} = 4405\text{px}$
  - Divided by 27" = **163PPI**



# Effective PPI (ePPI)

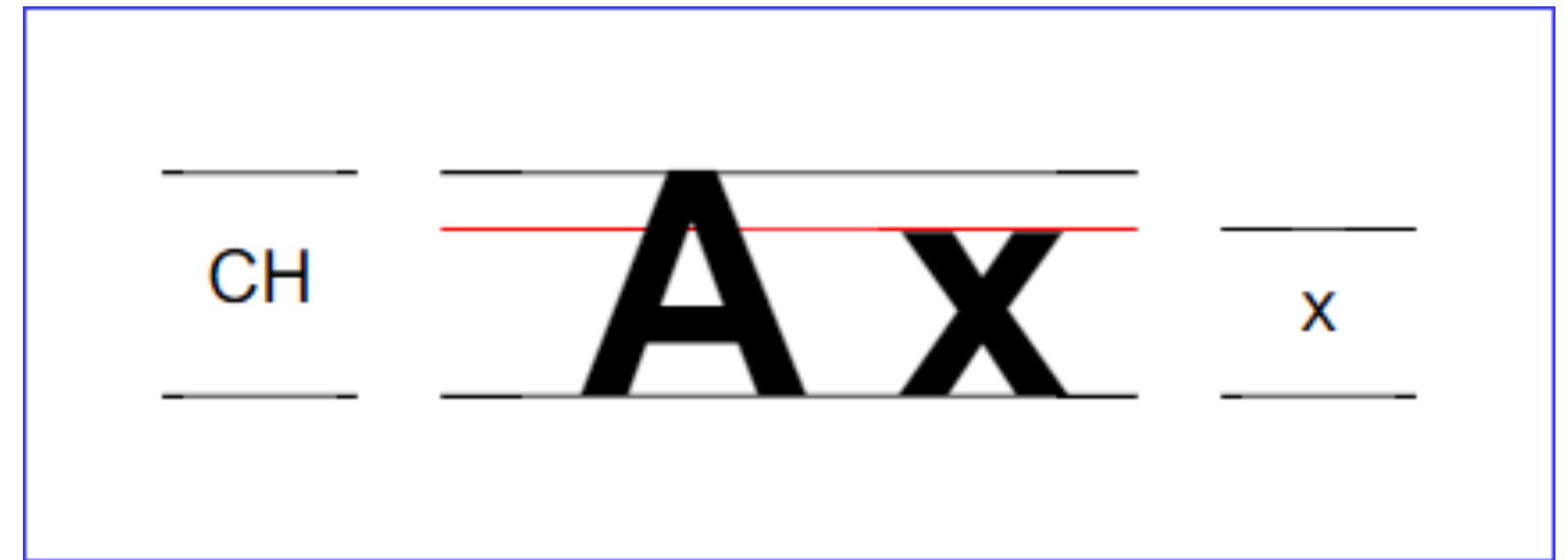
## The result of scaling, physical PPI, and monitor size

- At 163PPI, 16px text will be very, very hard to read
- Most people use some level of scaling with high resolution monitors
- Example with **27" 4K monitor at 200%** scaling
  - Physical resolution 3840x2160
  - Effective resolution @ 200% scaling = 1920 x 1080
  - Same math as before yields **82ePPI**

# cap-Height (or x-height)

..if you put a ruler up to the screen...

- The cap-height for a 16px font is 16px, or about .2" @ 82ePPI
- The x-height ratio for Times New Roman is about 47%, which is about 7.5px, or .092" @ 82ePPI



# HTML Root Element

Un-styled is **16px**.

```
<html>
  <head>

</head>
<body>
  <p>What size font is this?</p>
</body>
</html>
```

rems are “root ems”,  
not “relative ems”

The “root” in this case is **the <html> element**

```
1  html {
2    |   font-size: 16px; /* Insure that the root element is 16px */
3  }
4
5  body {
6    |   font-size: 1rem; /* 16px */
7  }
8
9  h1 {
10   |   font-size: 2rem; /* 32px */
11 }
12
13 p {
14   |   font-size: 1rem; /* 16px */
15 }
16
17 .small-text {
18   |   font-size: 0.75rem; /* 12px */
19 }
20
21
```

# Older than dirt? Give yourself a break.

At age 46, I use **SwitchResX** to run my 27” monitor at 1504x846, yielding a **ePPI of 64.**

This yields a 16px **cap-height of a quarter inch!!**

(I usually keep my monitor at 19”)

<u>27" Monitor</u>				
W(px)	H(px)	Diag (px)	Diag (in)	Effective PPI
1504	846	1725.610617	27	63.91150432
1600	900	1835.755975	27	67.99096204
1920	1080	2202.90717	27	81.58915445

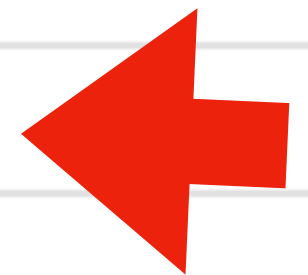


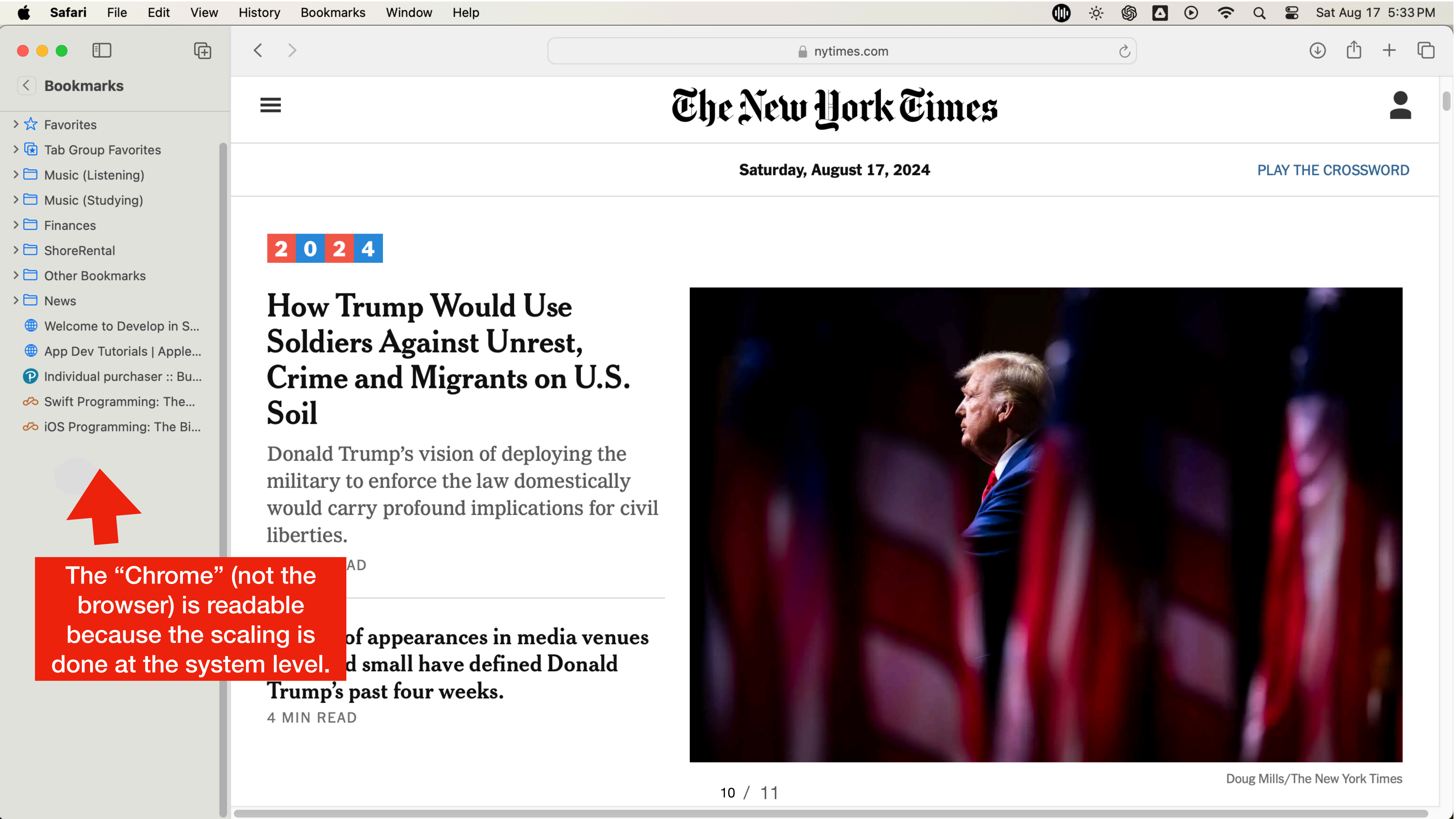
# Be mindful of **breakpoints.**

**With my monitor at this level of scaling, I still see responsive layouts geared towards large desktops.**

*(Notice that the “chrome” on the next slide is also readable.)*

<u>Standard Breakpoints</u>
Large Desktops 1440px and above
Desktops and Laptops 1024-1440px
Tablets 768-1024px
Phones below 768px





- Bookmarks
- > Favorites
- > Tab Group Favorites
- > Music (Listening)
- > Music (Studying)
- > Finances
- > ShoreRental
- > Other Bookmarks
- > News
  - Welcome to Develop in S...
  - App Dev Tutorials | Apple...
  - Individual purchaser :: Bu...
  - Swift Programming: The...
  - iOS Programming: The Bi...



The "Chrome" (not the browser) is readable because the scaling is done at the system level.



# The New York Times



Saturday, August 17, 2024

PLAY THE CROSSWORD

2 0 2 4

## How Trump Would Use Soldiers Against Unrest, Crime and Migrants on U.S. Soil

Donald Trump's vision of deploying the military to enforce the law domestically would carry profound implications for civil liberties.



AD

of appearances in media venues and small have defined Donald Trump's past four weeks.

4 MIN READ



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