

Responsive Design

Set of techniques used to create documents that adapt to the devices on which they are viewed



Responsive Design

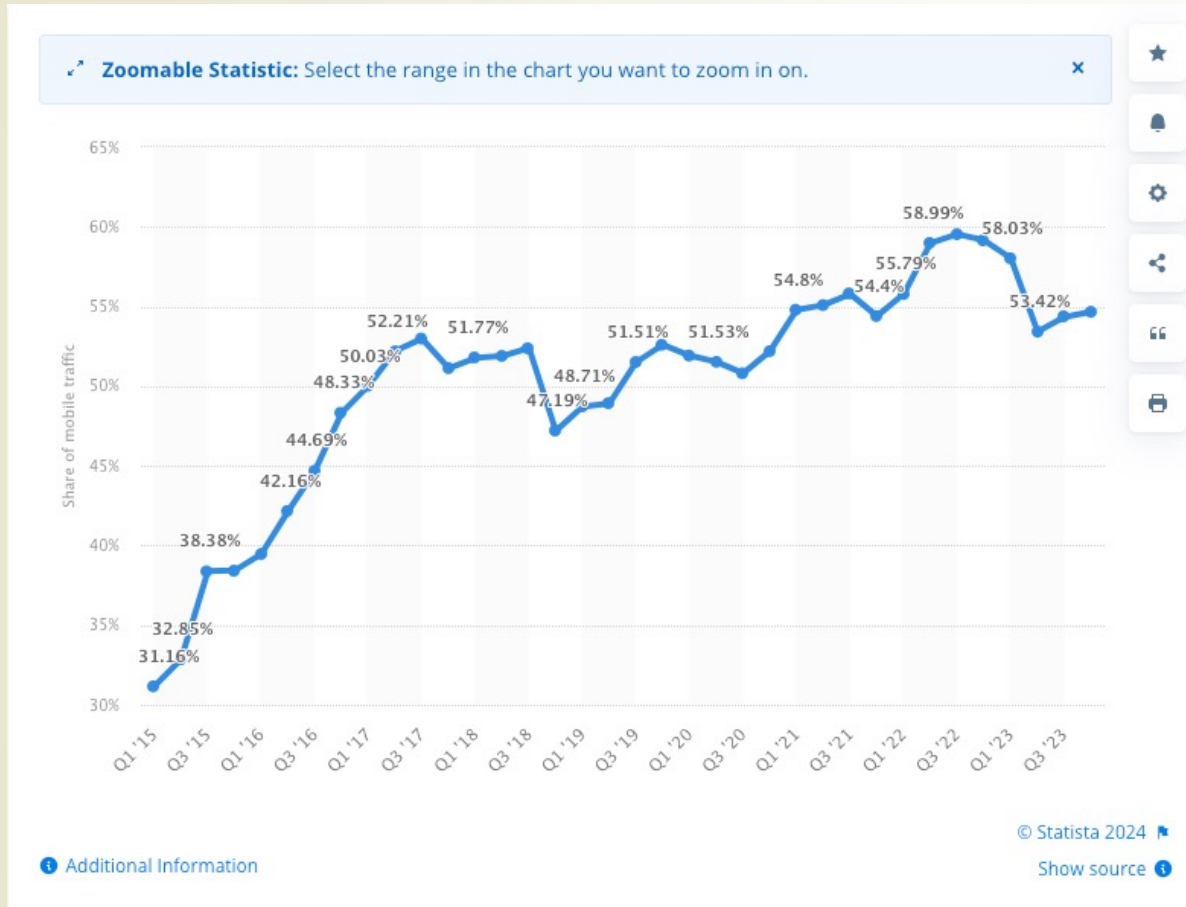
Examples



Why Responsive Design?



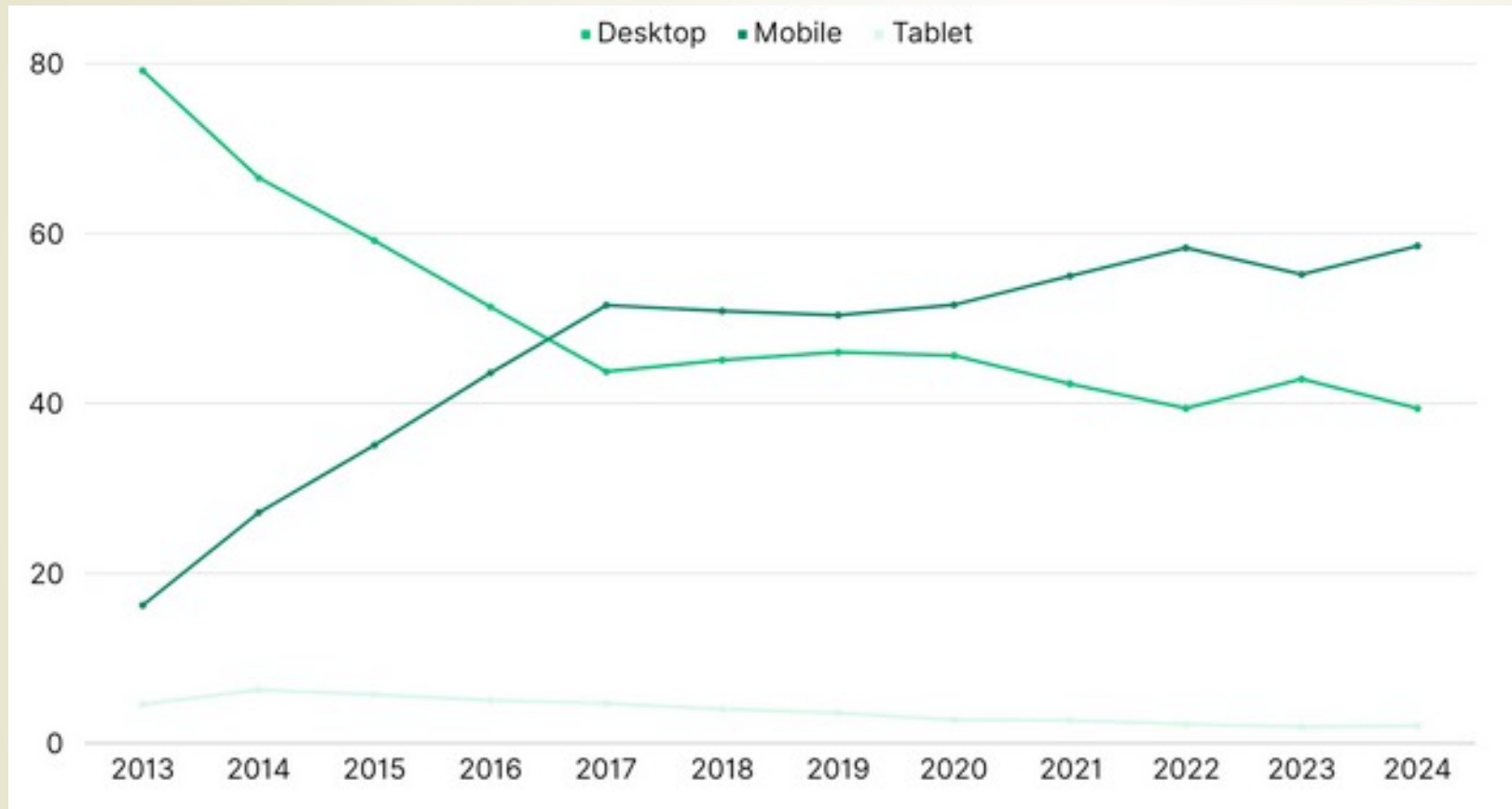
Mobile Devices - % of Global Internet Traffic



<https://www.statista.com/statistics/277125/share-of-website-traffic-coming-from-mobile-devices/>



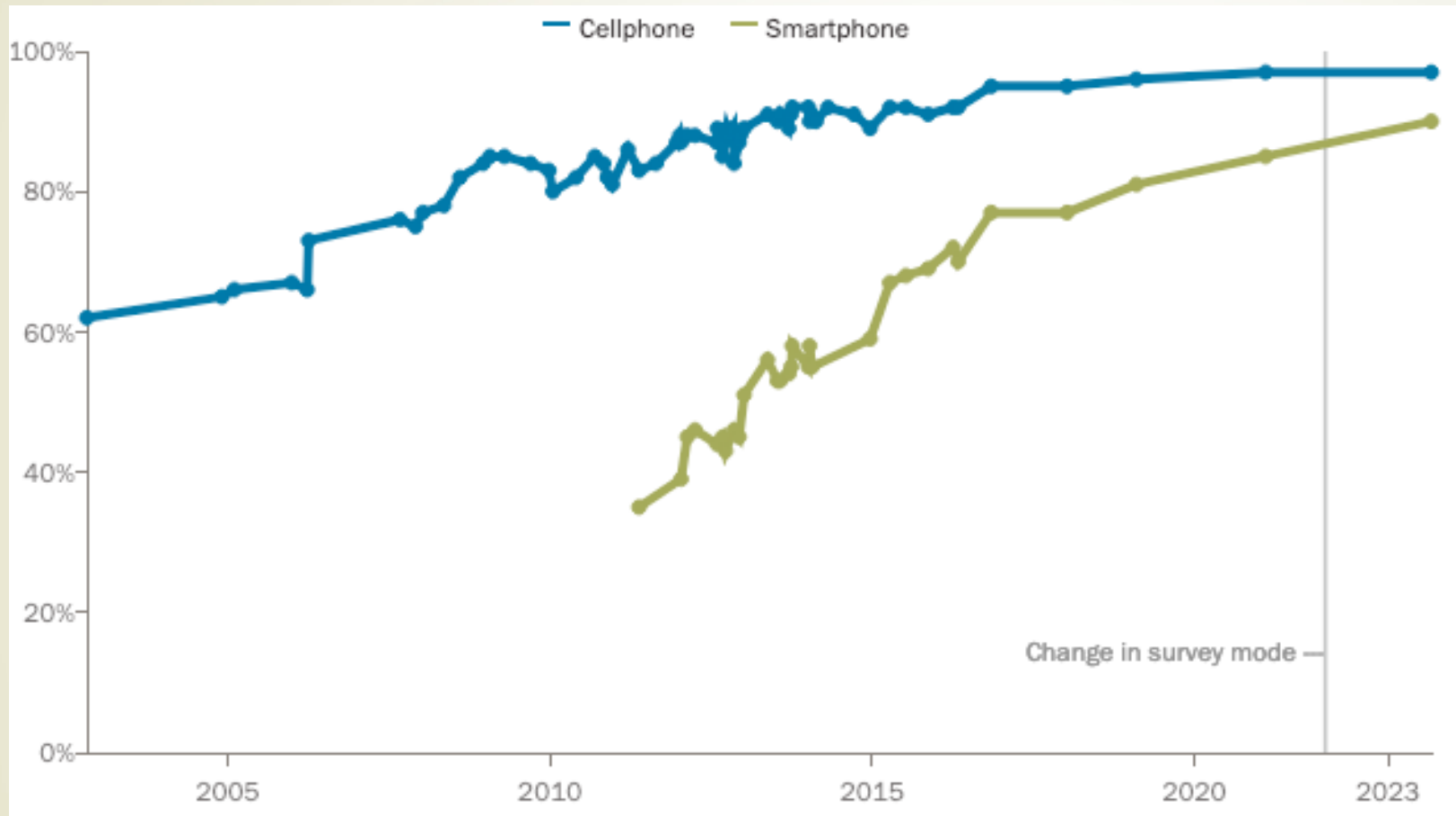
Mobile Devices - % of USA Internet Traffic



<https://www.mobiloud.com/blog/what-percentage-of-internet-traffic-is-mobile>



Mobile Phone Ownership - USA



<https://www.pewresearch.org/internet/fact-sheet/mobile/>



Google's Recommendation - Responsive Design

- Sees same URL and HTML for everyone
- Easier for google to index
- Easier for others to link to
- Easier to manage SEO



Measure Monitor



<https://howbigismybrowser.com/>

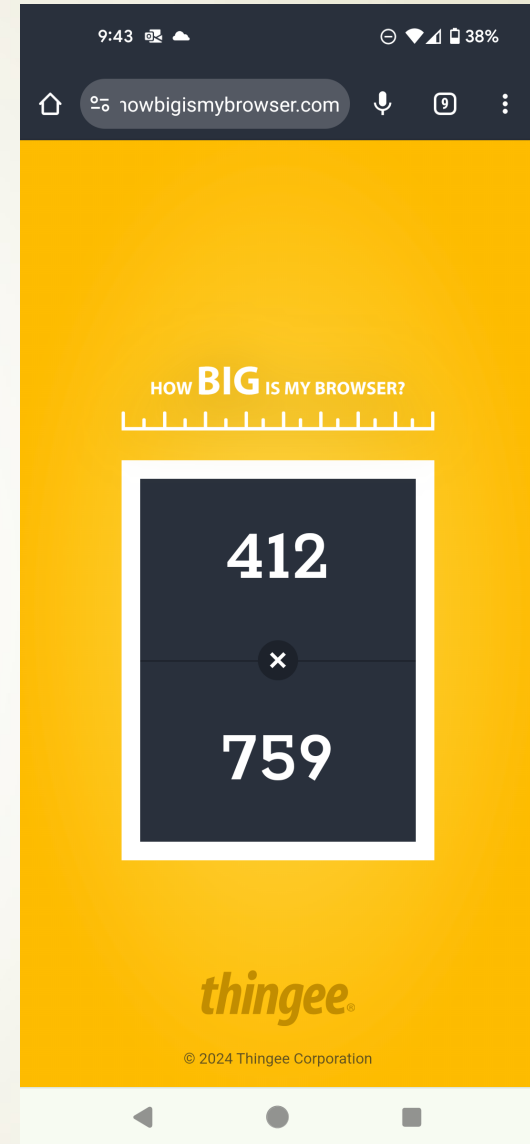
<https://www.omnicalculator.com/other/pixels-per-inch>

Screen dimensions	
Diagonal screen size	21.5 in ▼
Screen resolution	
Horizontal pixels	1,920
Vertical pixels	1,080
Total pixels	2.074 Mpx
Pixels per inch	
PPI	102.46
Dot pitch	0.00976 in ▼



Now Phone - Pixel 5a

<https://howbigismybrowser.com/>



Now Phone - Pixel 5a



Released 2021, August 26
183g, 8.8mm thickness
<> Android 11, up to Android 14
128GB storage, no card slot

6.34"
1080x2400 pixels

12MP
2160p

The image shows a dark grey Pixel 5a smartphone. The back view on the left shows the camera module with three lenses and a flash. The front view on the right shows the screen with a colorful abstract wallpaper, the date 'Monday, Sep 27', and the time '10:17'. The screen also displays a '5G' signal indicator and various app icons at the bottom.

https://www.gsmarena.com/google_pixel_5a_5g-11059.php



Now Phone - Pixel 5a



Released 2021, August 26
183g, 8.8mm thickness
<> Android 11, up to Android 14
128GB storage, no card slot

6.34"
1080x2400 pixels

12MP
2160p

Screen dimensions	
Diagonal screen size	6.34 in ▼
Screen resolution	
Horizontal pixels	1,080
Vertical pixels	2400
Total pixels	2.59 Mpx
Pixels per inch	
PPI	415.1
Dot pitch	0.00241 in ▼

https://www.gsmarena.com/google_pixel_5a_5g-11059.php

<https://www.omnicalculator.com/other/pixels-per-inch>



Virtual Resolution!

- Accounts for pixel density difference



Responsive Design Code

Doctype

```
<!doctype html>
```

Set Viewport

```
<meta name="viewport" content="width=device-width, initial-scale=1">
```



Media Queries

- Use to load external stylesheet(s)
- **Example:** jtc372.net
- `<link href="css/narrow.css" rel="stylesheet" media="only screen and (max-width:700px)">`
- Evaluates stylesheet when screen width less than 700px
- Order matters!

JTC 372

WEB DESIGN AND DEVELOPMENT



[Home](#) [Schedule](#) [Reference](#) [Assignments](#) [About](#) [Instructor](#)

[Home](#) > [Instructor](#)

Instructor

[Ben O'Connor](#) is a contract web designer/developer. He has developed dozens of web sites for corporate clients. In addition to his contract work, Ben worked for a startup internet company, Cybercrop.com, and assisted in the development of an agribusiness web-based trading application.

Ben is intimately familiar with design concepts, graphic design and optimization, Cascading Style Sheets and coding in HTML. He also has extensive experience in developing database-driven sites using Lucee, PHP and MySQL, and in administering web servers using Apache.

Some recent web sites Ben has worked on:

- www.goldhillinn.com
- www.benoconnor.com

For more of Ben's print and web design, see www.benoconnor.com/websites.

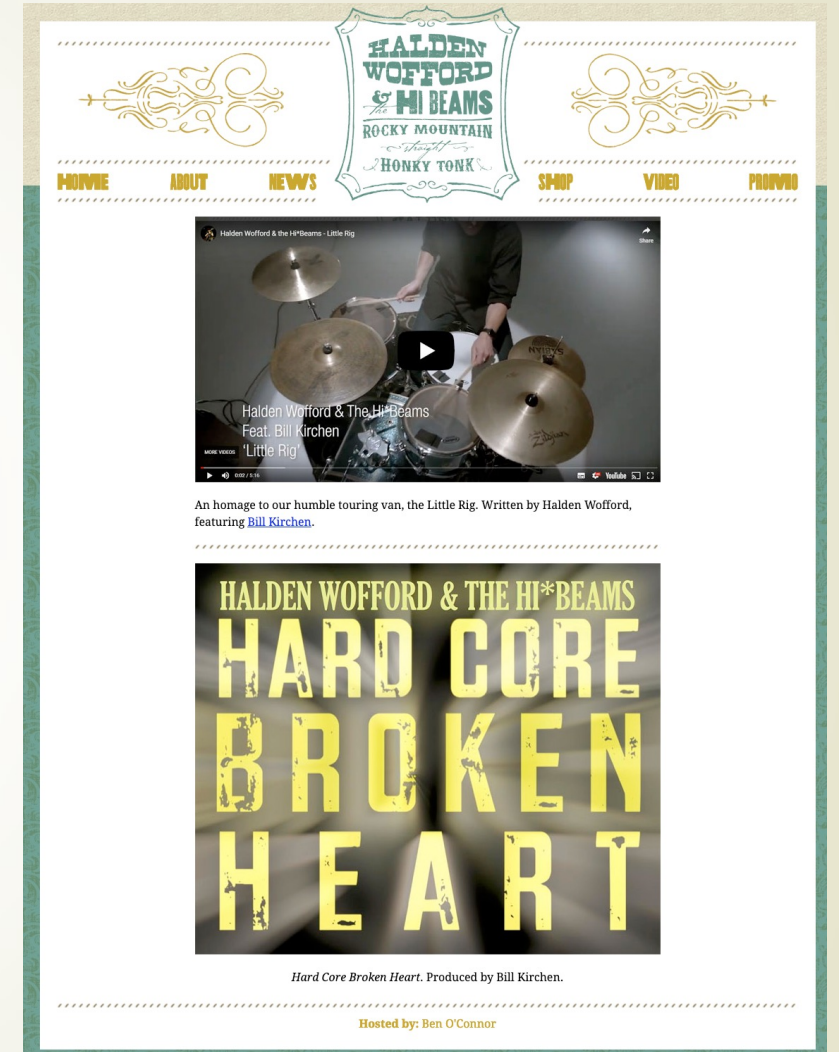
Ben is also a working musician who plays 80-100 dates in an average year in the Rocky Mountain region.





Text

- Text will not seamlessly scale - may require multiple break points
- **Example:** www.hibeams.com

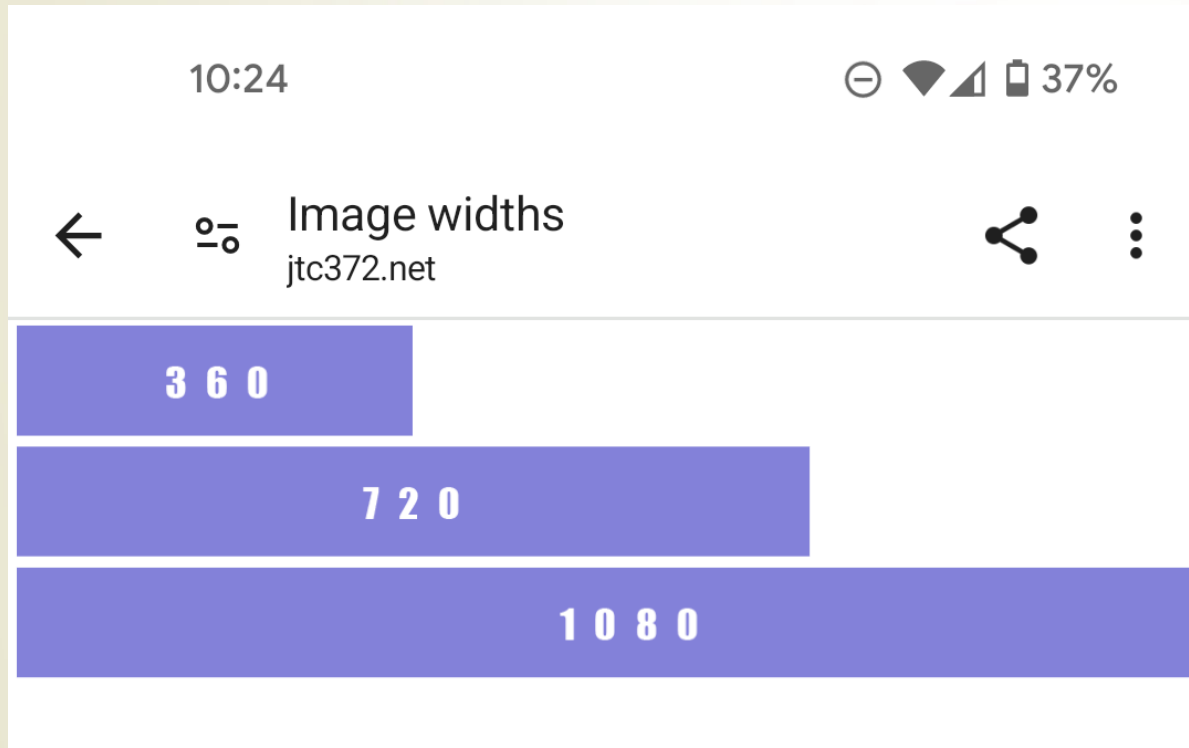


The screenshot displays the website for Halden Wofford & The Hi Beams. At the top, there is a navigation menu with links for HOME, ABOUT, NEWS, SHOP, VIDEO, and CONTACT. The main content area features a video player for the song "Little Rig" by Halden Wofford & The Hi Beams, featuring Bill Kirchen. Below the video player, there is a text graphic that reads "HALDEN WOFFORD & THE HI*BEAMS HARD CORE BROKEN HEART". At the bottom of the page, there is a caption for the text graphic: "Hard Core Broken Heart. Produced by Bill Kirchen." and a note: "Hosted by: Ben O'Connor".



Images

- Images display at native resolution, not virtual resolution
- **Example:** <https://www.jtc372.net/course/examples/image-width.html>



Navigation

- Hamburger Menu
- Collapsed box with 3 lines
- Standard
- Variations



Other...

- Load Time – Google wants 2s
- Do media query exercise together

