Colors!

Colors are an important part of visual communication

- Humans have lots of color associations
  - Emotions, moods, intent, etc
- Colors should augment, not replace, text

Colors can be HARD!

- Easy to say if we like/hate it
- Hard to create the desired result

Color Guidelines

There are entire courses taught about color theory

- And I'm not qualified to dive deep into any of it

Instead these are practical guidelines

- Starting points

As with anything

- Designers will break these rules
- Ideally when that's better
- Exceptions that prove the rule

60-30-10 rule

A good starting concept:

- 60% of your content is "one color"
    - "primary" (names will vary)
- 30% is a second color
    - "secondary" (names will vary)
- 10% is a third color
    - "accent" (names will vary)

True in most visual arts

What is a color?

The world is not 3 colors

- Trivial colors ignored by this rule
    - Could be text color!
- "Color" could be several colors
    - often hues or shades
    - but not always

The goal is to categorize

- not precision

Examples

https://president.northeastern.edu/#priorities-area

Presidential Priorities

Globalization of Higher Education

Under President Aoun's leadership, Northeastern has redefined the global university, expanding co-op and other experiential learning opportunities to more than 128 countries and creating new educational and research partnerships that align with the increasingly global nature of higher education.

Use-Inspired Research

President Aoun has strategically aligned the University's research enterprise with three global imperatives—health, security, and sustainability. Northeastern focuses on transforming research into commercial solutions that address the world's most pressing problems.

Experiential Learning

Building on Northeastern's leadership in cooperative education, President Aoun has made experiential learning the centerpiece for

Innovation In Higher Education

President Aoun is a leading voice for innovation in higher education, particularly as Artificial

Color Palette

A "color palette" is the selection of color a site uses

- Not used randomly!
- Use the 60-30-10 guideline

Palettes can be 3-8 or so colors

- Break them out into the 60/30/10 groupings

Choosing a focus color

Color has a lot of psychological associations

https://zevendesign.com/color-association/

Palette Selection

Picking colors for your palette

- Not random
- Not "gut instincts"
    - Unless your gut finds good matches

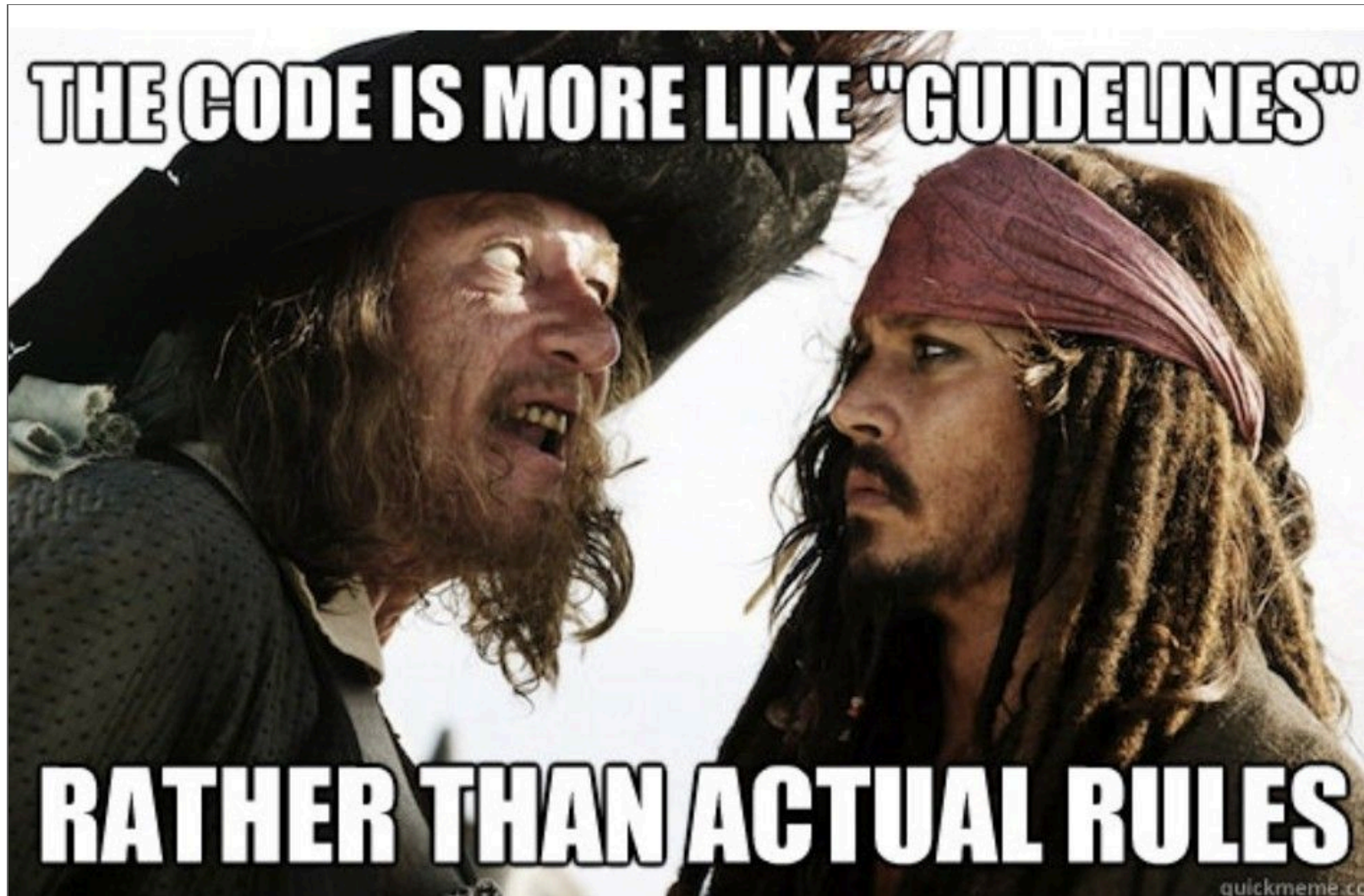We have rules and tools

Rules - So Many!

Some colors "go well together" and some do not.

- Color Harmony
- Want enough contrast (but not a lot)
- Want enough harmony (but not too much)

There are some different rules that can identify these

- Except when wrong

Like all design rules, these are guidelines

Color Wheel

Colors discussed in terms of the "color wheel"

- Spectrum in a circle
- Primary: red, green, blue
  - Light-based or Pigment-based

Analagous Colors

Analagous colors are "adjacent"

- Simple: 3 colors on a 12-part wheel
    - Primary colors (3)
    - Secondary colors (+3)
    - Tertiary colors (+6)

Analagous colors can "pop" a lot

- Good for "energetic, cheerful" sites
- Garish on more serious or analytical sites

Complementary Colors

Complementary Colors are "opposite" on color wheel

- Use shades to fill in the rest of the palette
- Great for contrast without getting too "busy"

Monochromatic Colors

Everything is just a variation on one primary color

- Shades and hues
- Often lacks contrast, a11y problem
    - But may be mixed with "neutral" colors

Neutral Colors

Designers aren't consistent

- Is text color part of the palette?
- Is a dark/light background part of the palette?

These may be considered "neutral" colors

- "Neutral" colors may not be part of the palette
- White/Black often used even when not in palette
  - But sometimes ARE in the palette
  - I did say that designers love exceptions

Tools

There are many tools to help select/find a palette

- **https://coolors.co/**
- **https://mycolor.space/**
- **https://paletton.com/**
- **https://color.adobe.com/create/color-wheel**

Demo Sheet

Hard to predict how all your colors work together

A demo sheet (my term) helps

- Gives a preview of the color interactions
- Without writing an entire actual site

Similar to the Paletton "Example" page

You can try different palettes

- And different roles (accent/cta, etc) for the colors

Demo Sheet Creation

You have options:

- Visual tools (Figma, Photoshop, etc)
- Simple HTML and CSS
- (Later) Simple HTML and CSS + some JS

I will cover the HTML/CSS approach

Demo Sheet Goal

You want to see the color interactions

- Is there enough contrast?
- Does it look "good"?

Examples

- header/footer
- menus
- buttons/links
    - including hover
    - CTA and non-CTA
- cards (commonly)

Images and the Colors

Real Designers insist:

- You need your images to build a palette
- Particular any Hero images
- Our palette tools can extract from images

They are correct

- And yet, we often have to
- Images often come after site built
- Images often change over time
- UX Engineering is **right here**
    - Between needs of design and needs of devs

Skeleton Page

A Page with:

- Header/Footer
- Headings/titles
- Text w/Links
- Menu
- Card
- CTA button
- non-CTA button
- Controls
    - optional; if you plan for carousel or similar

Changing Colors

Just swapping out colors in the CSS can be tedious

- Lots of duplicates in many positions
- Search/Replace is hard if moving a color

Try defining "roles" for the colors

- Using CSS custom properties
- Then define colors to those roles
  - In one place

Custom Props Example

```css
:root {
  /* base palette — extend/change as needed */
  --primary-color:  #F49CBB; /*amaranth pink*/
  --primary-contrast-color: black;
  --secondary-color: burlywood;
  --secondary-contrast-color: black;
  --accent-color: #885053; /*rose taupe*/
  --accent-contrast-color: white;
  --neutral-color: papayawhip;
  --neutral-contrast-color: black;

  /* role color assignment */
  --header-bg-color: var(--secondary-color);
  --header-highlight-color: var(--accent-color);
  --page-bg-color: var(--neutral-color);
  --page-text-color: var(--neutral-contrast-color);
  /*... and so forth */
}

body { /* below doesn't change as we experiment w/colors */
    background-color: var(--page-bg-color);
}
```

Color Guidelines

Finding colors for roles that aren't garish is HARD

- Expect a lot of tweaking
- Here are some vague tips
- But they are VAGUE
- Lots of exceptions

Rough Guidelines (per designers)

- Move towards neutral on rollover/hover effects
    - Darker or Lighter of same "color"
    - "minimal value shift"
- Soften explicit white/black when helpful
- Balance big color blocks left/right top/bottom
- Always remember to have enough contrast
    - Terrible to have to start over