

Color Theory

How colors influence our interactions with interfaces

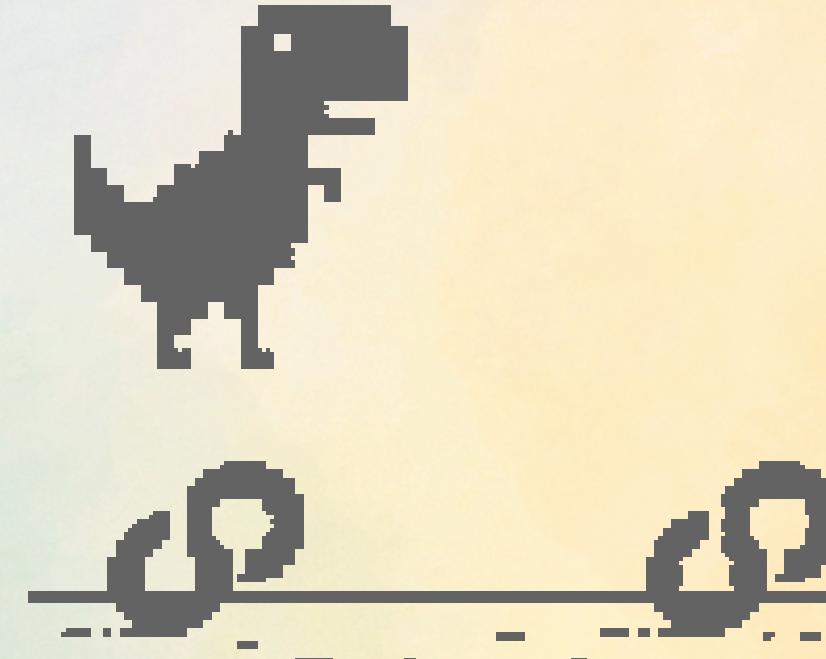
Club Meeting - 9/15

Please Sign In!



This will be shown again at the end of the meeting too!

While you wait, enjoy this chrome dino :)

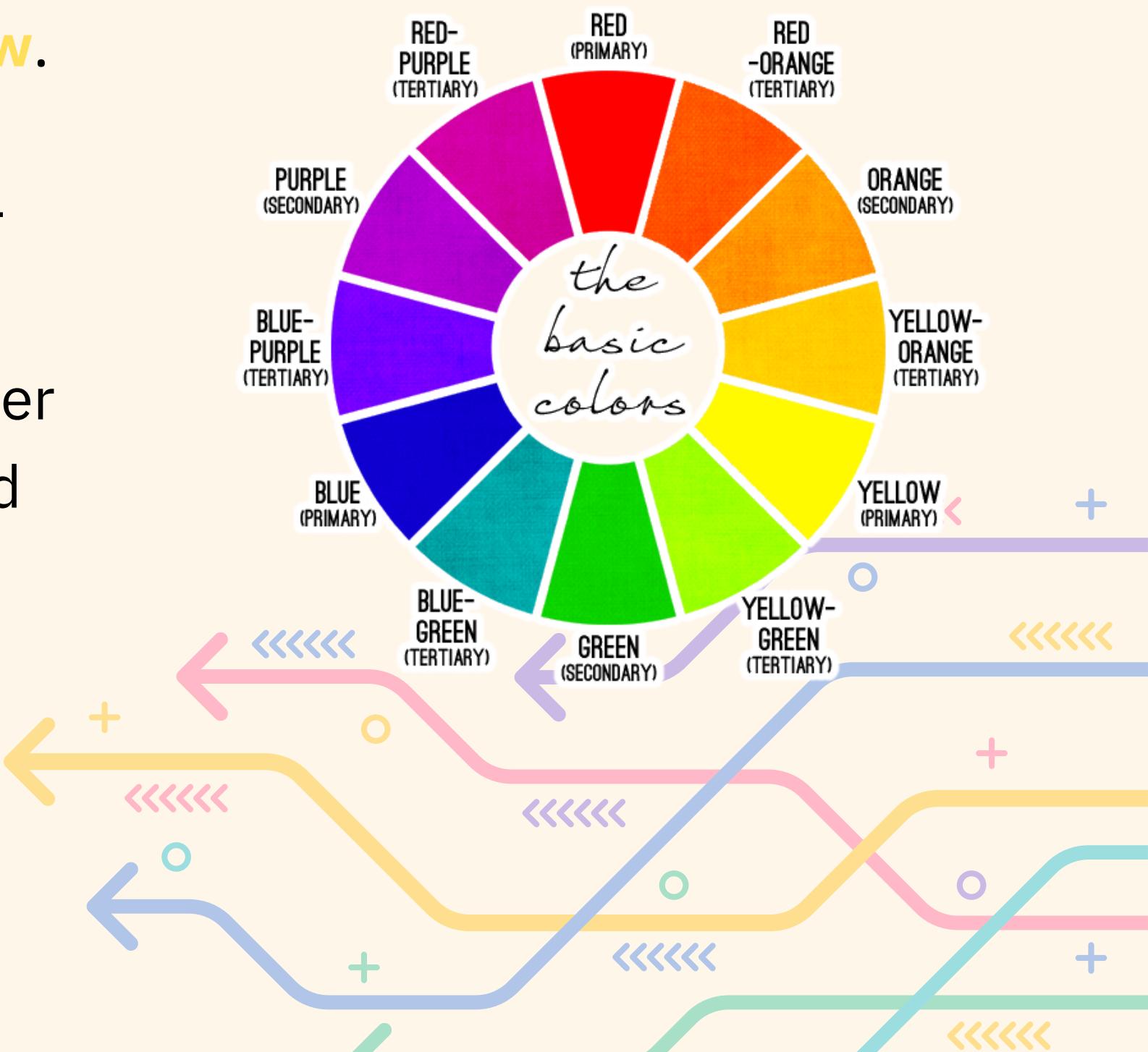


It all stems from the color wheel

(Review)

We start with the **Primary Colors**, **Red**, **Blue**, and **Yellow**.

- These three are the *starting points* for building other colors
- **Note:** Each of these are **equidistant** from one another on the color wheel. This makes this system balanced and predictable. They are our *anchors*.

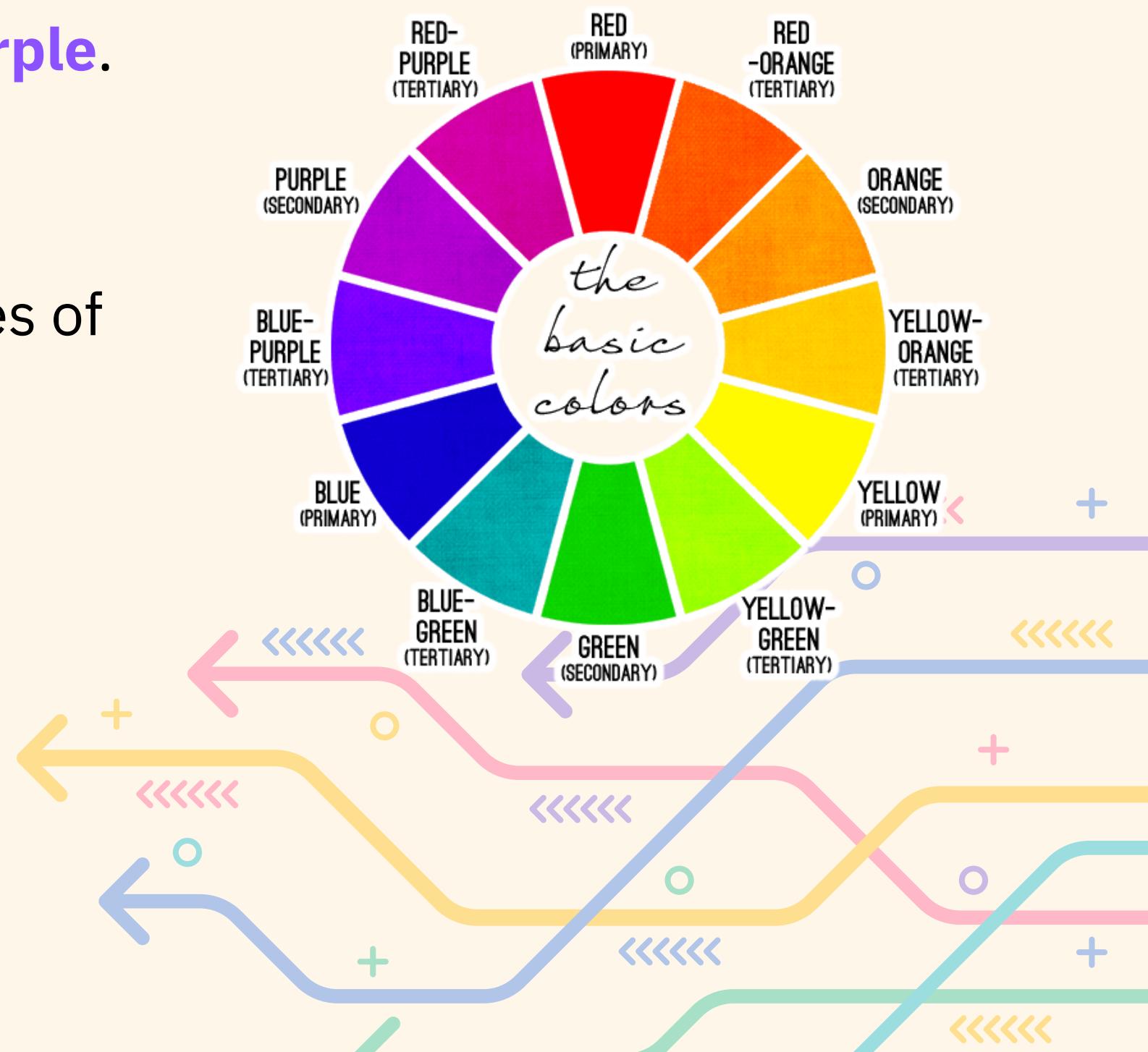


It all stems from the color wheel

(Review)

Next comes **Secondary Colors**, **Orange**, **Green**, and **Purple**.

- Created by **exclusively** mixing primaries
- They are visually balanced by containing the qualities of both of their neighbors
 - **Orange** contains **Red** and **Yellow**
 - **Purple** contains **Blue** and **Red**
 - ... et cetera

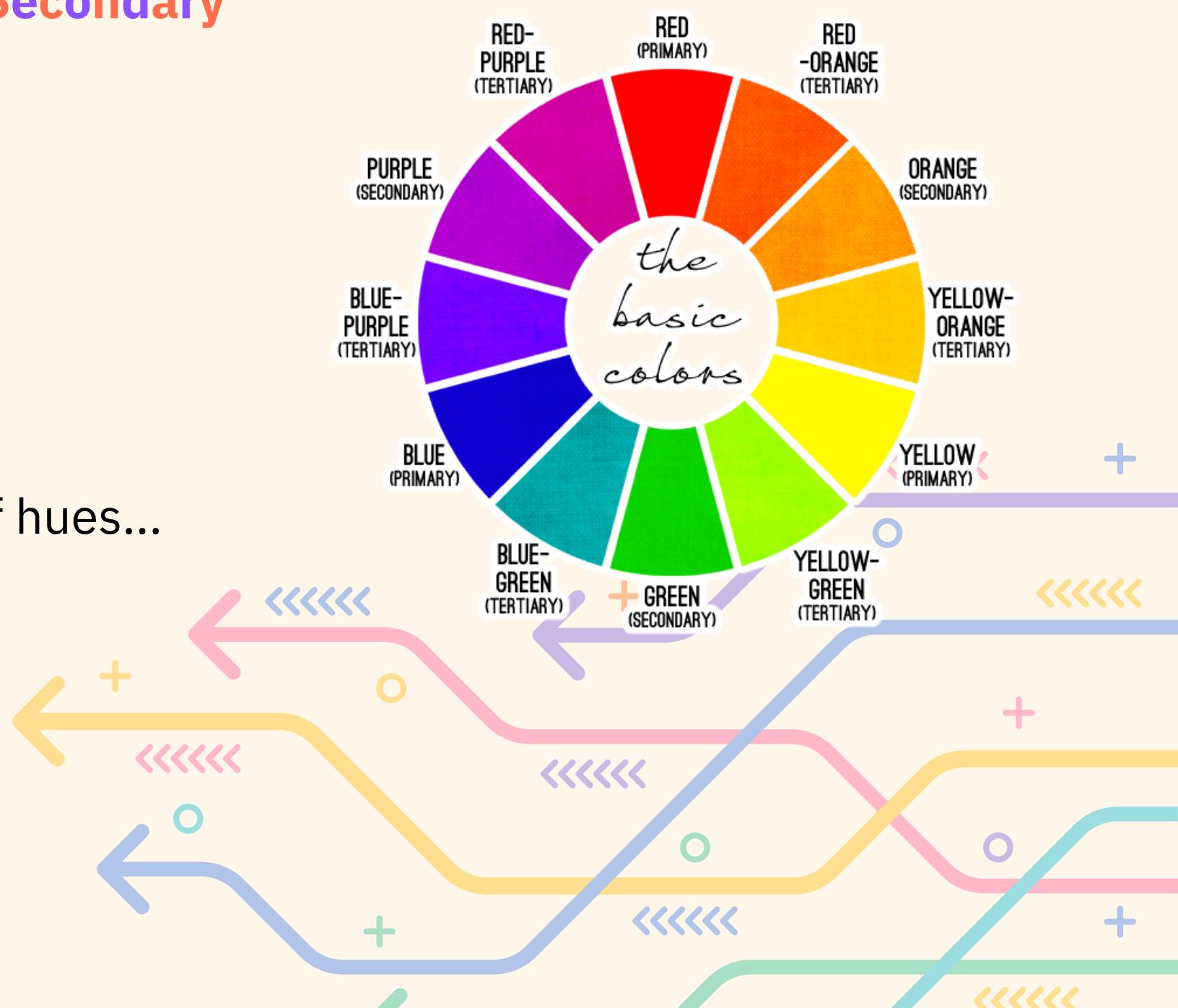


It all stems from the color wheel

(Review)

Tertiary Colors come from mixing **Primaries** with a neighboring **Secondary**

- They *complete* the spectrum
- Typically a little harder to describe
 - **Blue-Purple?**
 - **Yellow-Green?**
 - **Red-Orange?**
- So, designers often use shorthands to describe these types of hues...
 - **Indigo**
 - **Lime**
 - **Coral**



Obviously, there are far more than these...

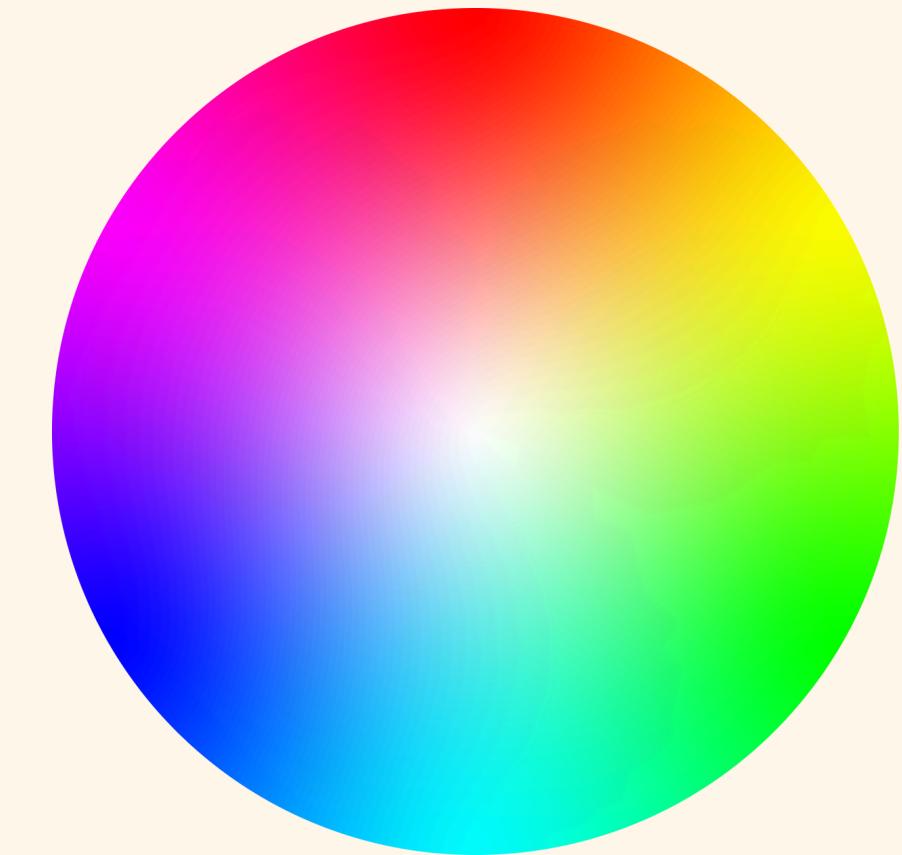
But you can create *most* visible colors just by combining variations
of the three primaries!

Now, let's flip this on its head!

The Real Color Spectrum

But you know better than to believe what you've heard in art class...

- In **UX**, the real primaries are **Red**, **Green**, and **Blue**!
 - This is why computers work on the **RGB** spectrum
 - sRGB (Standard RGB) is the most popular colorspace, and has become the standard for web content
- A combination of these three can successfully reproduce **16 million** distinct colors
- You'll see them displayed in forms like:
 - **Hexadecimal:** #0000ff
 - Numbers range from 0-255 in each category, moving in **sequential order** (#RRGGBB)
 - **RGB:** rgb(0, 0, 255)
 - **HSL:** hsl(240, 100%, 50%)
 - Stands for **hue**, **saturation**, and **luminance**.



So Why Should I Care?

Users rely on color to determine where to direct their attention, and which conclusions they need to draw.

Colors do a lot of the heavy lifting (in UIs)

- They can establish a sense of **branding**
 - Using a consistent color palette can establish consistency in your interface and make the experience feel *cohesive*
- They are essential for **accessibility**
 - Good contrast ratios are necessary so people can actually read the information you're presenting them
 - This is *doubly* true for people with poor eyesight



Colors do a lot of the heavy lifting (in UIs)

- But they are the *most* useful for communicating the **state** of a given system
 - **Green: Success**
 - An action was completed. Yay!
 - **Yellow: Warning**
 - A matter requires attention, but is not *catastrophic*
 - **Red: Error**
 - Used for failed actions, invalid inputs
 - Signals *danger*
 - **Blue: General Information**
 - Something that is helpful to be aware of
 - **Grey: Disabled**
 - *Low contrast* relative to the rest of the interactive elements signifies non-interactivity
- Sticking to these established conventions is *extremely* important to keep users smoothly navigating your interface



Some Examples

Log in or sign up

You'll get smarter responses and can upload files, images, and more.

Email address
sdadasdasd

! Email is not valid.

Continue

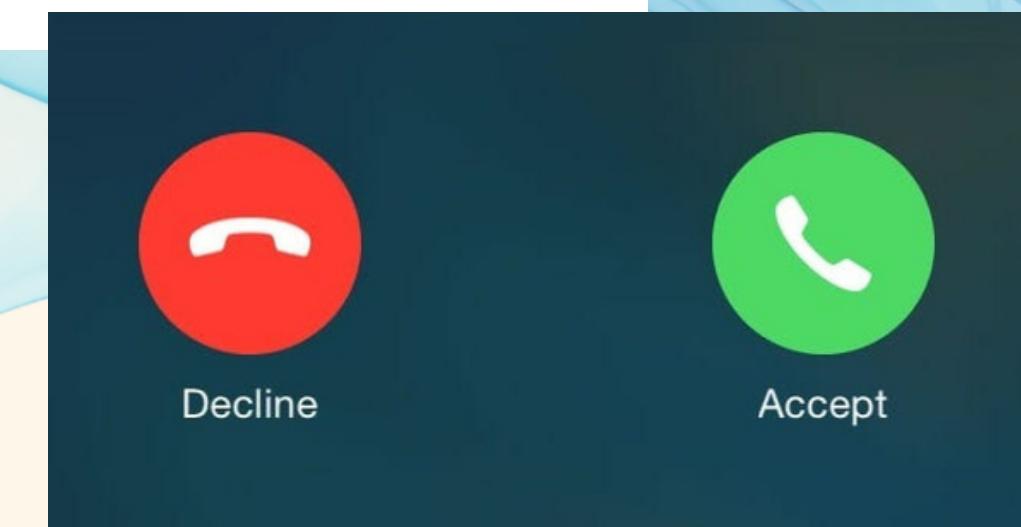
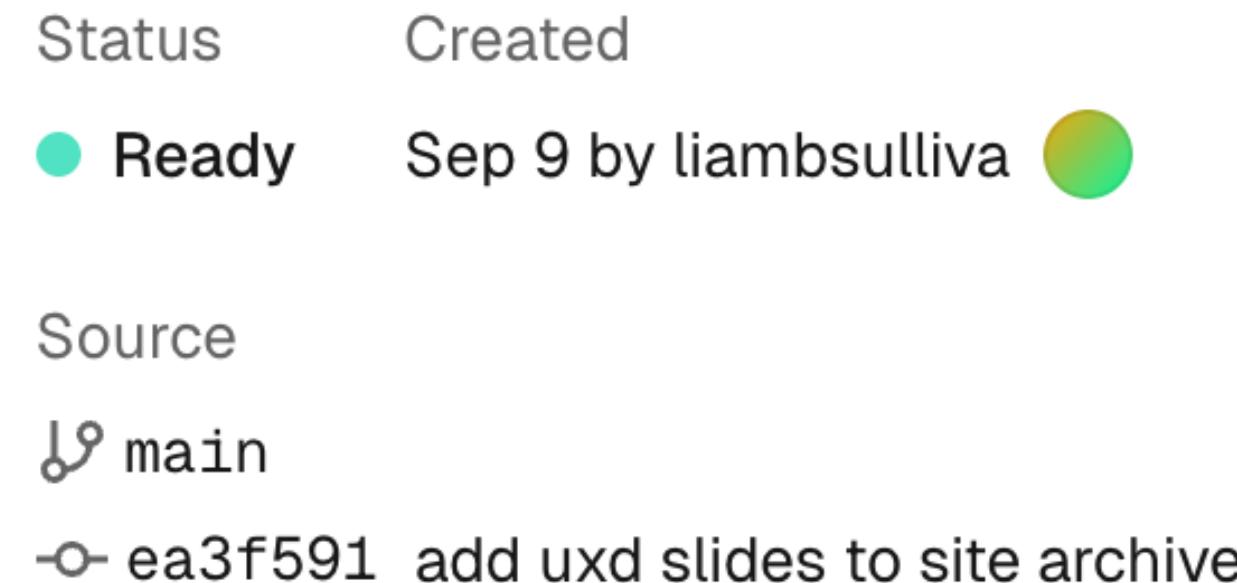
Sign in to GitHub

Username or email address

Password

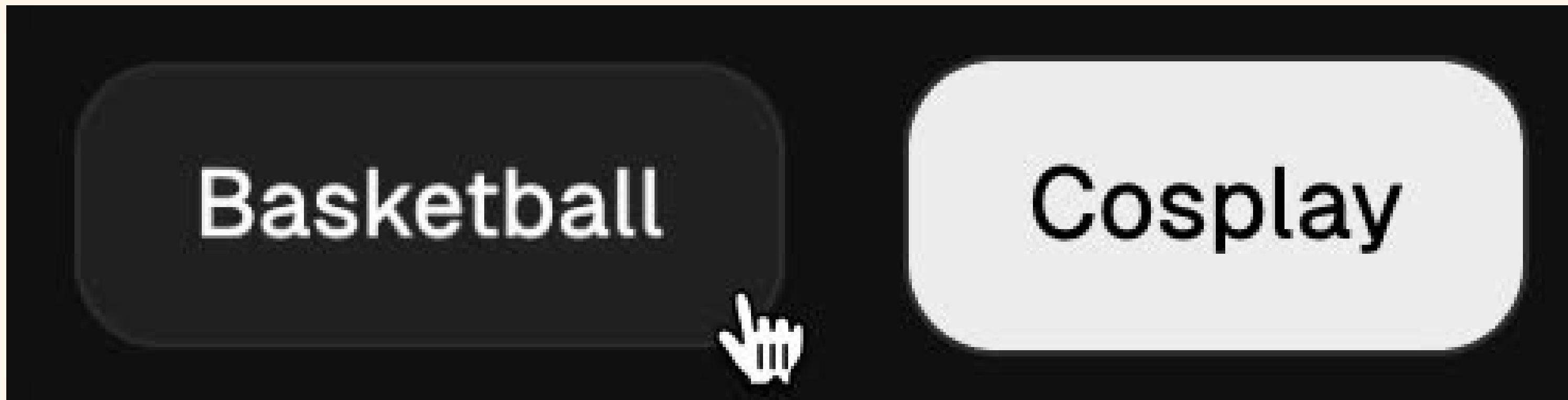
[Forgot password?](#)

Sign in



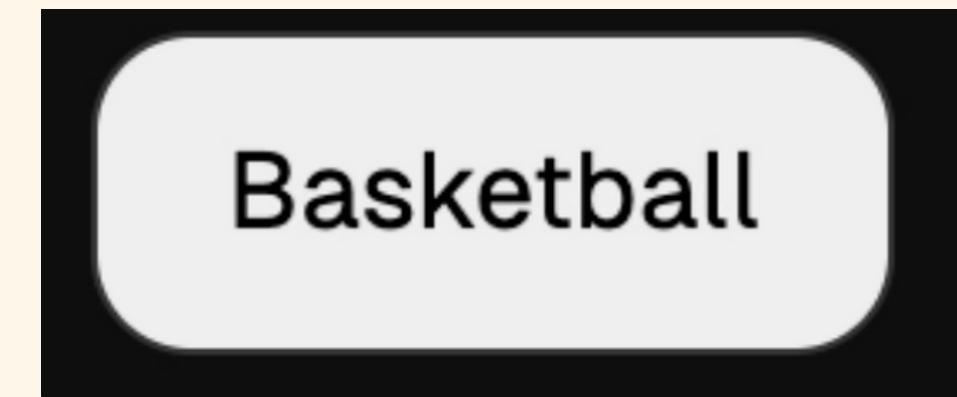
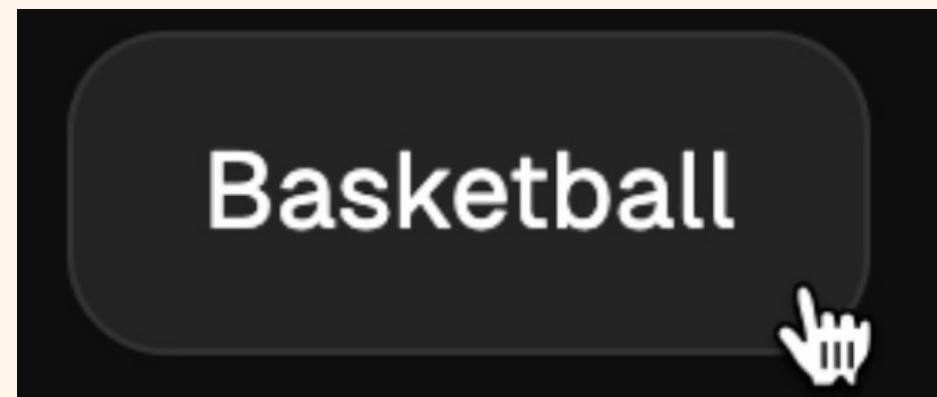
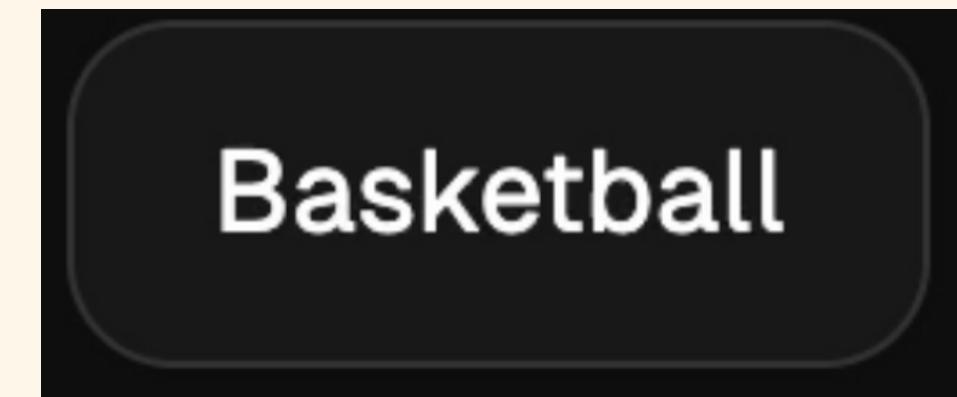
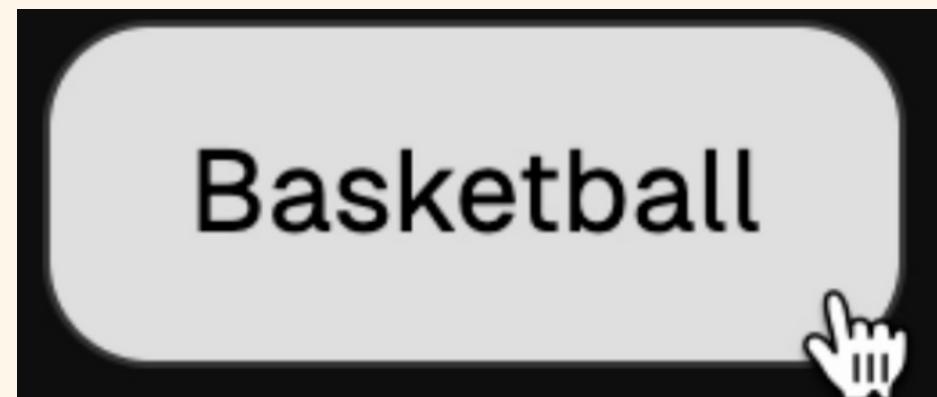
This remains true on a component-level

Think about this in the context of a **button**



This remains true on a component-level

Think about this in the context of a **button**



Hover: Color slightly lightens/darkens depending on whether the button is *active* or not

Active: Color shifts from black to white to signify that the given option is *selected*

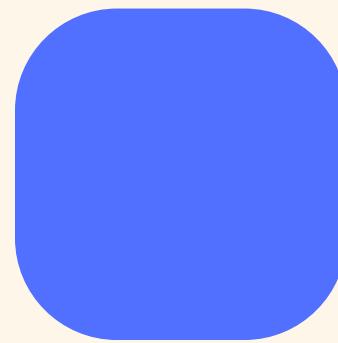
Color is also emotionally charged

(Western Standards)



Red

Passion, Strength



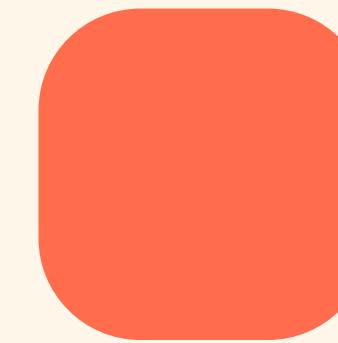
Blue

Peace, Trust



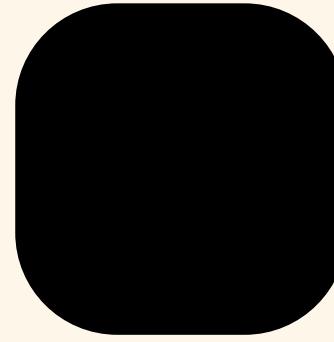
Yellow

Creativity, Joy



Orange

Confidence, Bravery



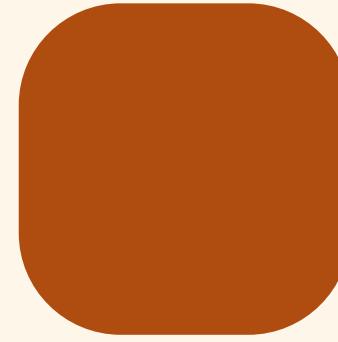
Black

Sophistication, Luxury



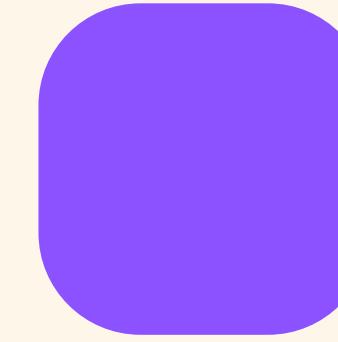
White

Purity, Innocence



Brown

Grounded, Nature-y



Purple

Spirituality, Mystique

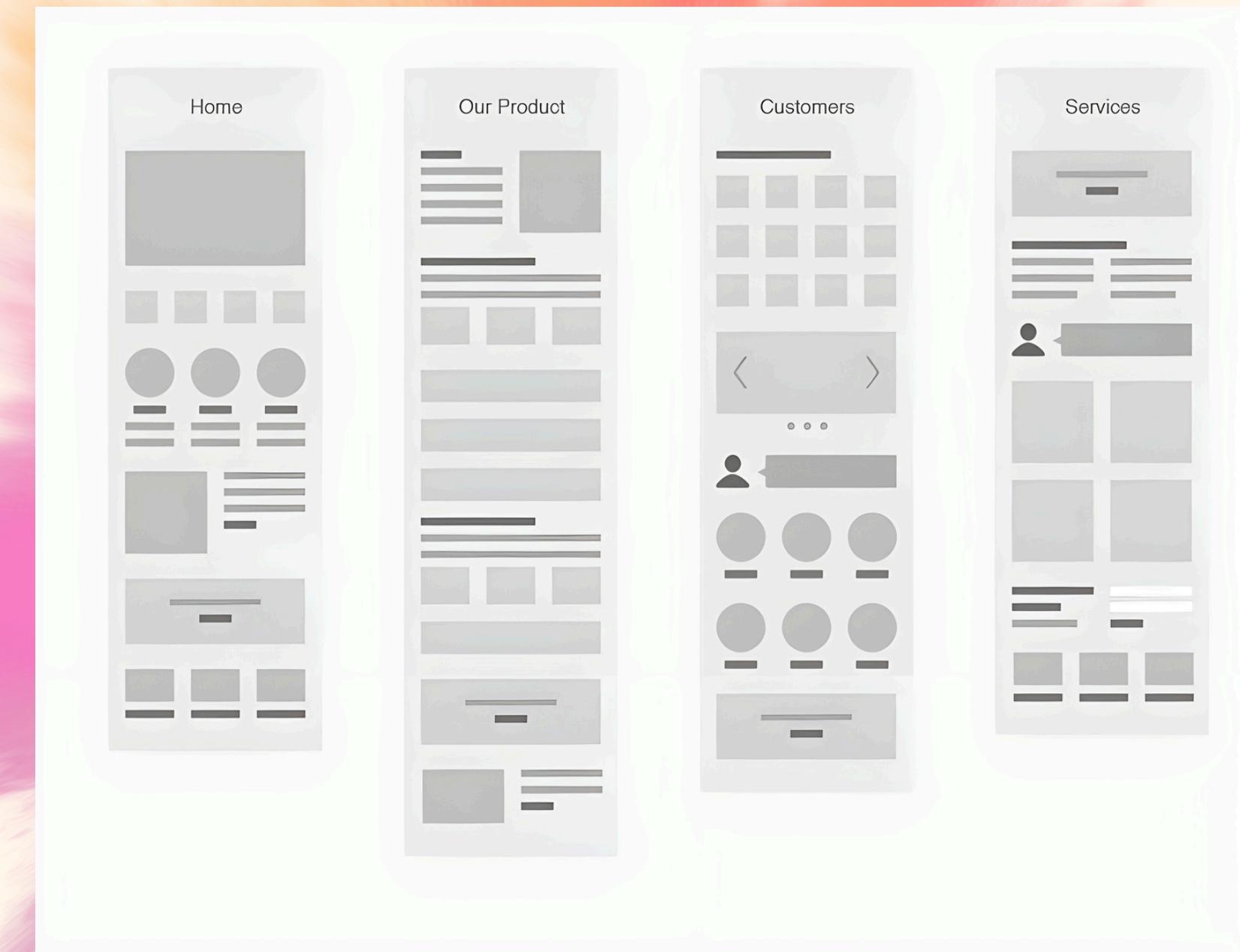
Some Best Practices...

- Limit your initial palette to 3-5 core colors
 - This will help with establishing a **brand**
- Introduce additional colors for application states when they are needed
 - This is an **accessibility concern**, so please take it seriously
- Test with users for *cultural differences*
 - If you are building a globally accessible app, some users might have different associations with color than you're used to!
 - **Example:** The Chinese often see **Red** as a symbol of luck and prosperity (Think: Chinese New Year)



Workshop Time!

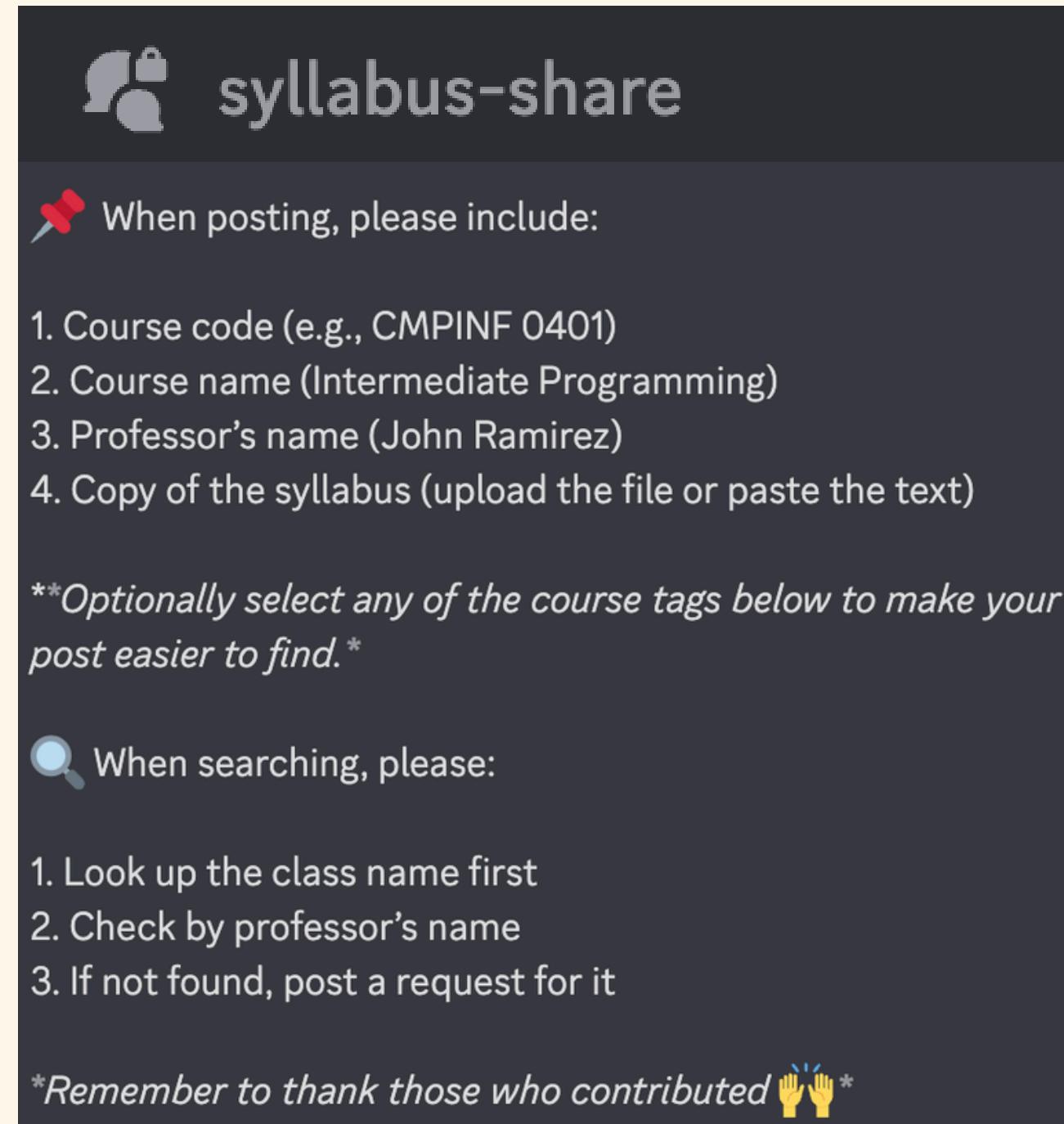
Let's do a bit of coloring!



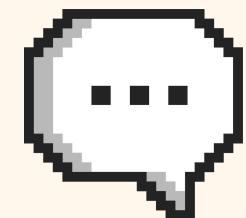
(yes, I know it's AI upscaled, have mercy pls)

Quick Shoutout

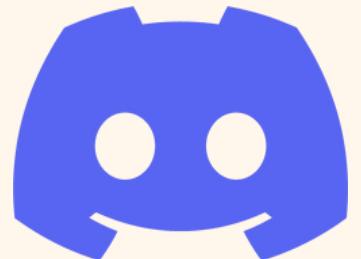
Syllabus Sharing forum in the UXD Discord!



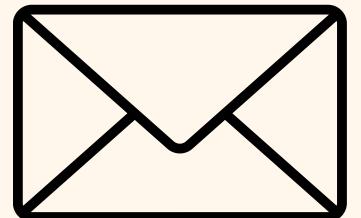
Ways to Contact Us!



@uxdpitt



UXD Discord Server



lbs57@pitt.edu

Thank you for coming!

Sign In Form



Discord Server

