

# SOFTWARE ENGINEERING

***Chapter 3.3: Graphic Design Insights for GUI and  
Usability Design***

# MOTIVATION...

Graphical user interfaces are stories about Simplicity



# WARNING!

A lot of the images that I'll user here are stolen from the books!

# Software Processes

- Do you remember all of them?



Requirements



Design



Implementation



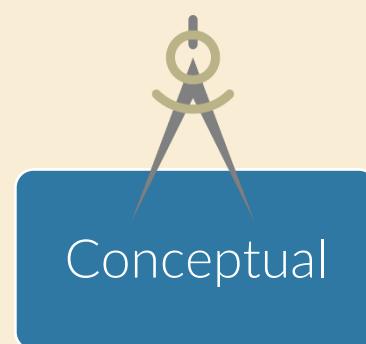
Testing



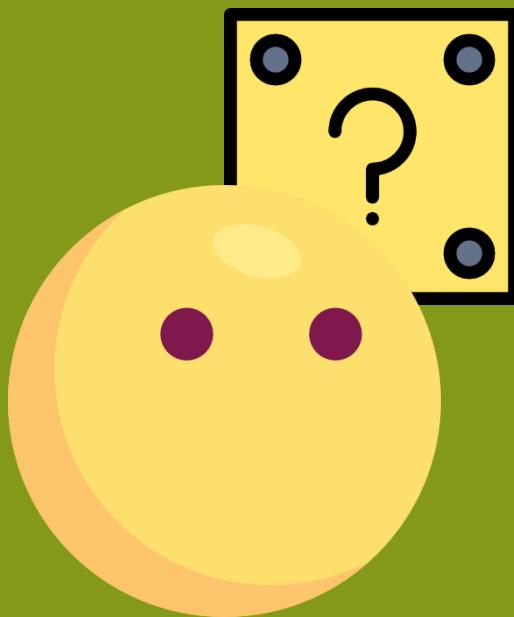
Deployment

# Something's Different

- Think about this:



# Are they the same?



# Design

The human power to conceive, plan, and realize products that serve human beings in the accomplishment of any individual or collective purpose.

*Dick Buchanan*

A photograph of a light-colored wooden desk. On the desk, from left to right, is a white ceramic cup filled with dark coffee, a white Samsung smartphone lying horizontally, a dark wood fountain pen standing vertically, and a white rectangular notepad. The background shows more of the wooden desk surface and some green leaves in the top right corner.

# Starting clean...

## UI Design:

Crafts Interaction

Brings Functionality to  
life... (Color, Screens...)

## UX Design:

They create that 'Feeling'  
with the product

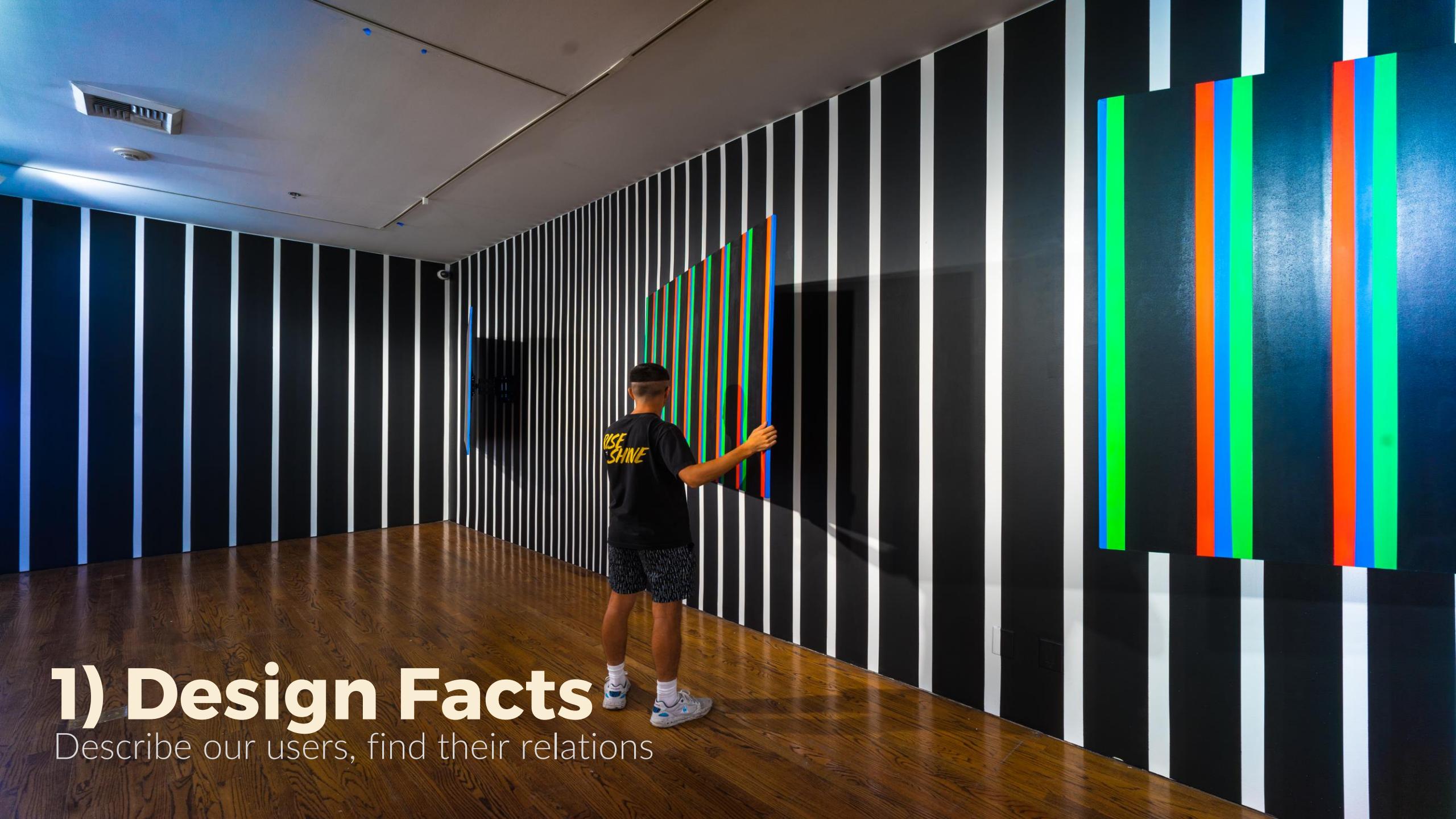
*(Think about apple)*



**BOTH ARE USEFUL!**  
Let's try to think like them for today

# 1) Design Facts

Describe our users, find their relations



# Users...

You need to do some deep observations in order to see their behavior and what can do!



# Users...



Observe users where you know  
they can be!

Look for interruptions, draw their  
story  
*(they won't notice)*

# 2) Design Concept

Let the picture talk by itself!



# SIMPLICITY

Products need not to be  
intimidating or too complex  
*(if you want to go mainstream)*

Products can be adaptable,  
reliable, easy to use



**Why should setting up  
a printer be any harder  
than plugging it in?**



# SIMPLICITY

- Adding too much complex and heavy features on your software can make them **less valuable** for users.
- Just do what's needed to suit those needs

Hint: Leave room for improvements!

# SIMPLICITY

- Don't overdo it!
- Keep in mind that design is also functional, *you need to keep complex features*, just be selective on which ones are you going to keep!



**Simpler than a bike.  
Until you try to ride it.**

Remove



Organize



Hide



Displace

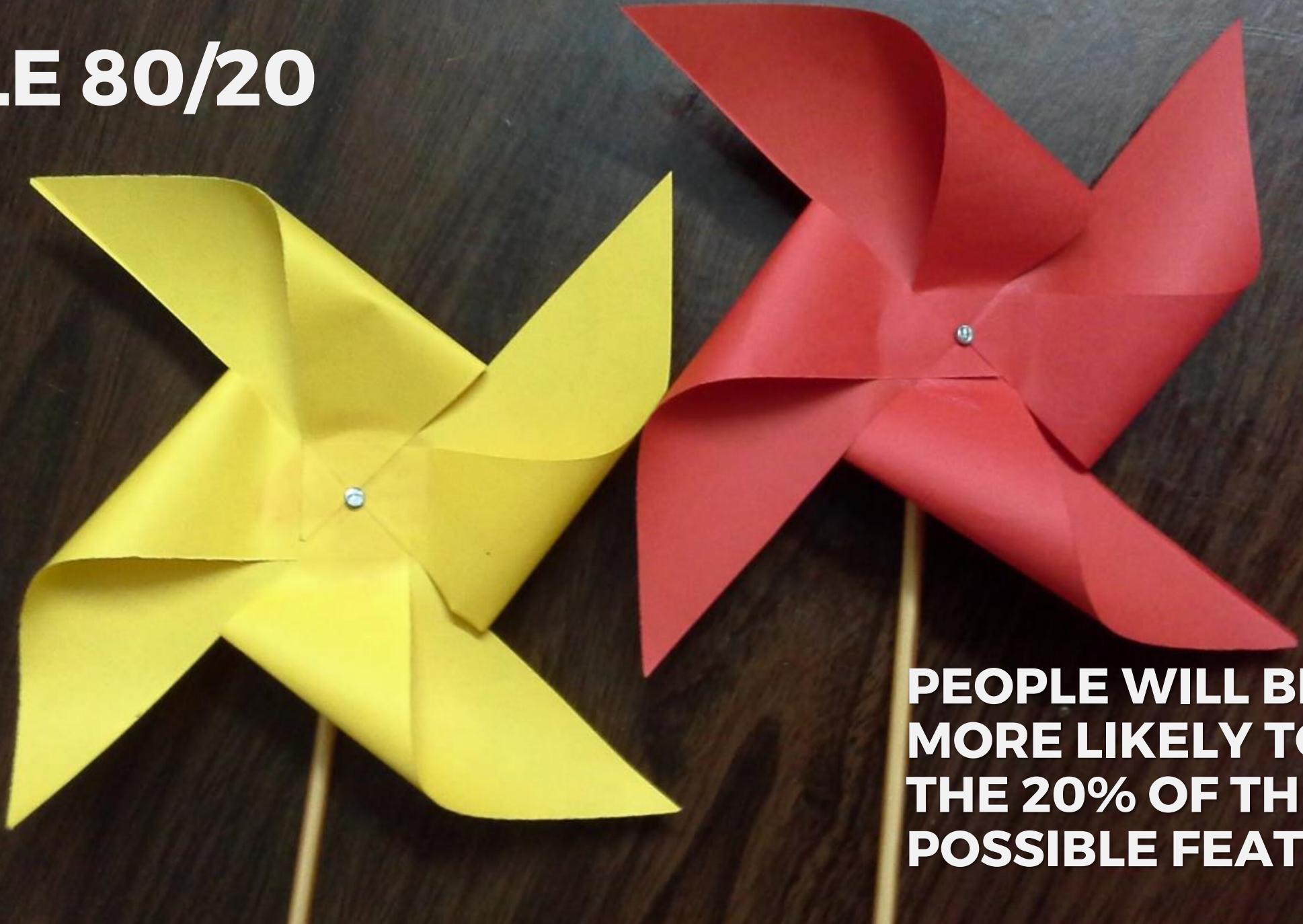


# SIMPLICITY

4 Key elements to achieve this!

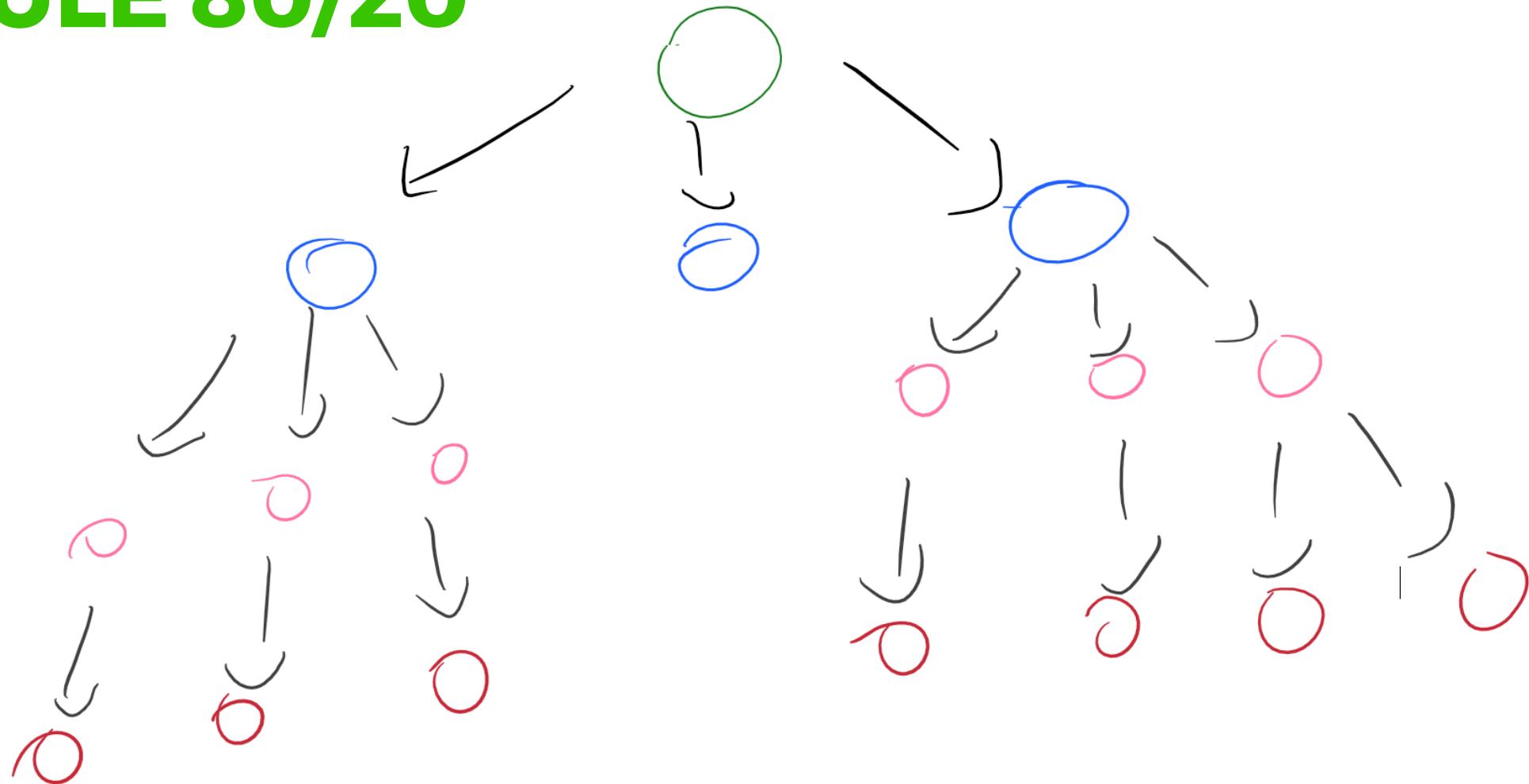
- Remove (are you showing too much?)
- Organize (priorities)
- Hide (adding more layers)
- Displace (simplifies)

# RULE 80/20



**PEOPLE WILL BE  
MORE LIKELY TO USE  
THE 20% OF THE  
POSSIBLE FEATURES**

# RULE 80/20



- Sketch functionality trees and try to identify that 20%

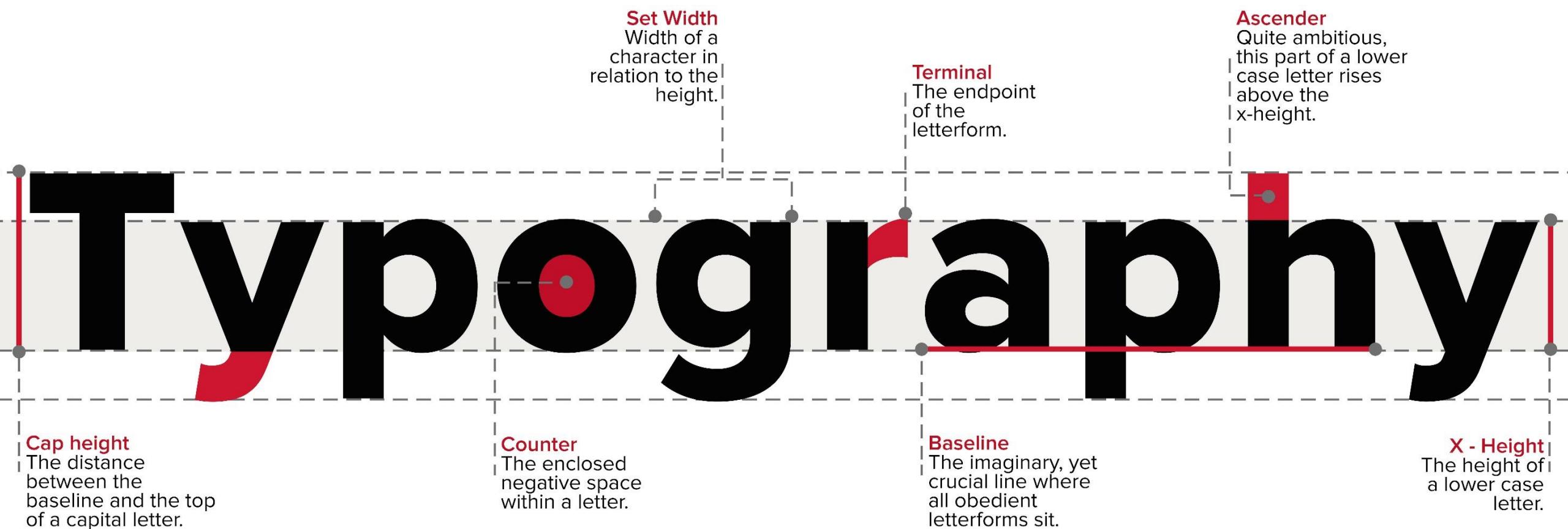
# DESIGN PATTERNS



Lineups and useful tips for UX Design  
We'll discuss them with more detail



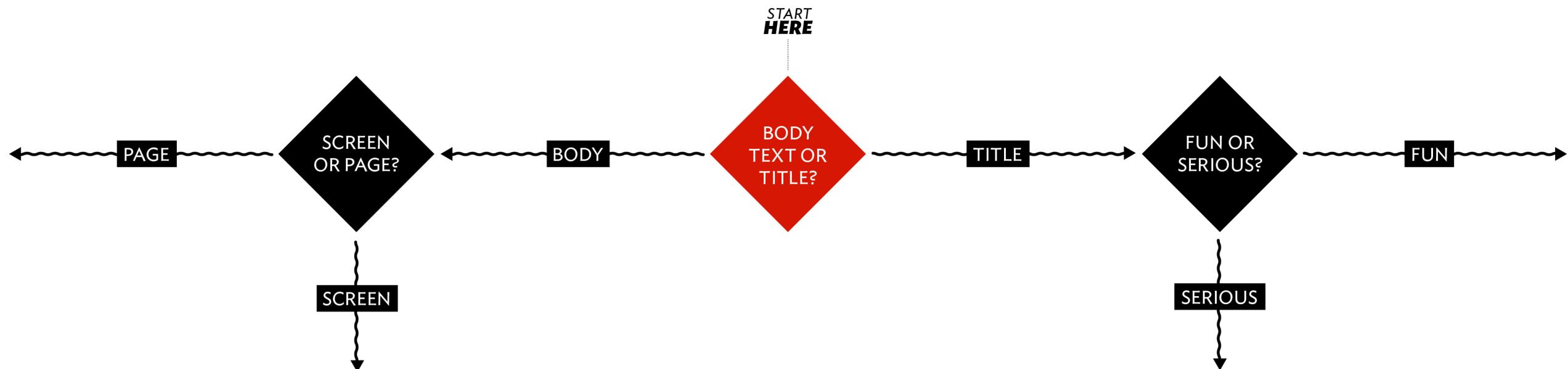
3) AESTHETICS



**Every typeface has it's own use... choose wisely!**

# HOW TO CHOOSE A TYPEFACE

A guide to picking the right font by Ben Barrett-Forrest



# Simple Guide

- Don't use more than 3-4 fonts on any one page.
- If you don't have any intention don't **change the font** in the middle of the sentence!

That looked weird right?



# Simple Guide

{Serif}

**Not the best one for presentations!**

**This excels at printed documents or scientific web (LaTEX...)**

{Sans - Serif}

This one looks better here!

This are the most used typefaces on web and mobile design

But in some cases you can replace some of this typefaces with serif ones

# Varying sizes



| Am Bold and big \*TITLES

| Am big \*Subtitles / Sections

| Am light \*Content, huge amounts of text

# THINGS TO AVOID (Comic Sans)

This fonts are not that bad either  
(Aclonica)



# Simple Guide

{Serif} {Sans-Serif}

I Am a collapsed text example, I know this fonts are nice to read.

But here I'm not leaving room for the audience to breathe, this is heavy

I can leave you some space to breathe

Things doesn't always need to be collapsed, cleaner designs are a lot more appreciated most of the time

The background of the slide features a dynamic, abstract pattern of swirling, translucent liquid. The colors transition through a full spectrum, including red, orange, yellow, green, blue, and purple, creating a sense of motion and depth. The liquid appears to be flowing from the left side of the frame towards the right.

# COLOR

Practical introduction to Color – Theory  
Choose the right palettes and use them properly, use contrasts and temperature

# Color Palettes

Are sets of colors that you can use in your designs.

[www.colorlisa.com](http://www.colorlisa.com) is an example of the mix between typography and colour palettes

Elegant



Young sassy



Fresh



Tech



Firenze



Luxury



# STANDARD COLOR WHEEL

## PRIMARY COLORS

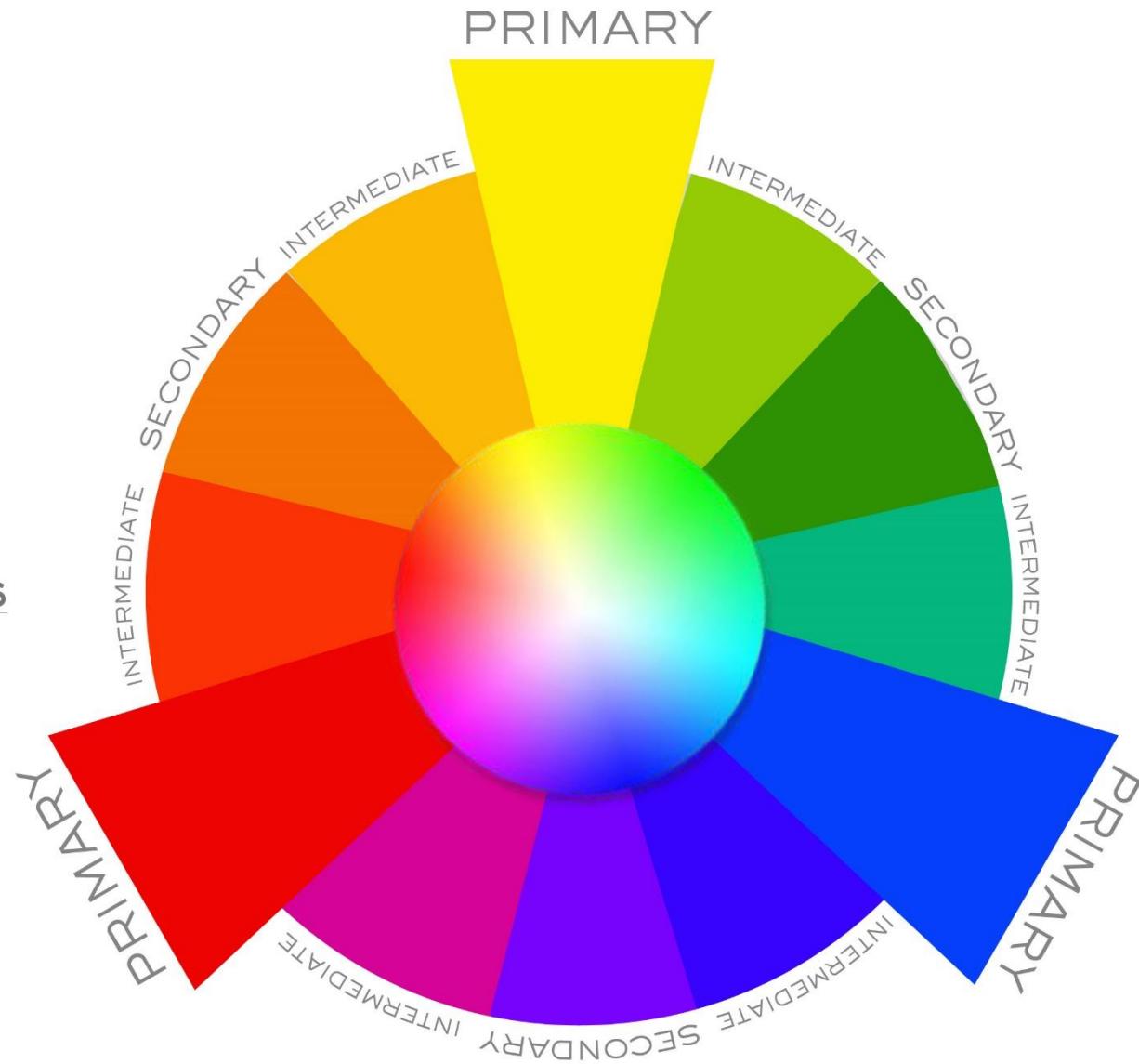
RED  
YELLOW  
BLUE

## SECONDARY COLORS

ORANGE  
GREEN  
PURPLE

## INTERMEDIATE COLORS

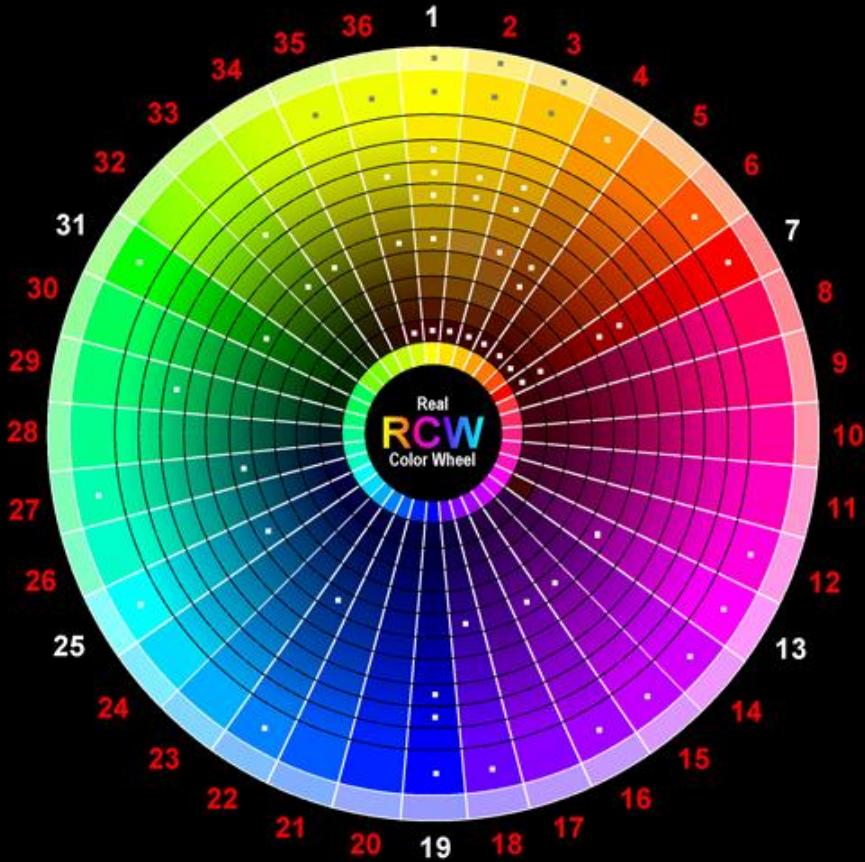
YELLOW-ORANGE  
YELLOW-GREEN  
BLUE-GREEN  
BLUE-VIOLET  
RED-VIOLET  
RED-ORANGE



# Complementary Colors



Use the wheel to pair each color with the one that's in front of it



# The Web Color Wheel

Use it to create contrast for a given set of colours (you don't need to know everything about this!)

Adobe Kuler is a free web tool that provides such sets and contrasts

# References

- Designer's Cheat Sheet: <http://www.hongkiat.com/blog/cheatsheet-graphic-designers/>
- Tidwell, J. (2010). *Designing interfaces: Patterns for effective interaction design.* " O'Reilly Media, Inc.".
- Colborne, G. (2010). *Simple and usable web, mobile, and interaction design.* New Riders.
- Abras, C., Maloney-Krichmar, D., & Preece, J. (2004). User-centered design. Bainbridge, W. *Encyclopedia of Human-Computer Interaction.* Thousand Oaks: Sage Publications, 37(4), 445-456.
- Apple's Human Interface Guidelines: <https://developer.apple.com/ios/human-interface-guidelines/visual-design/color/>
- Google's Material Design Guideline: <https://webcourse.cs.technion.ac.il/236504/Winter2014-2015/ho/WCFiles/10.%20Material%20design.pdf>



*Class has died... for today!*