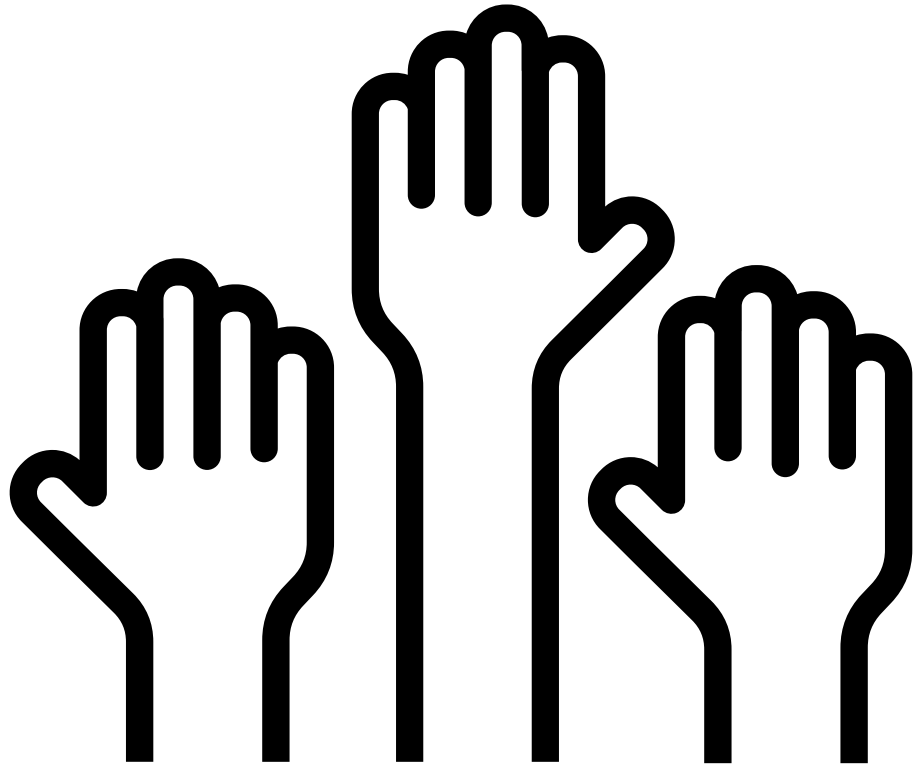
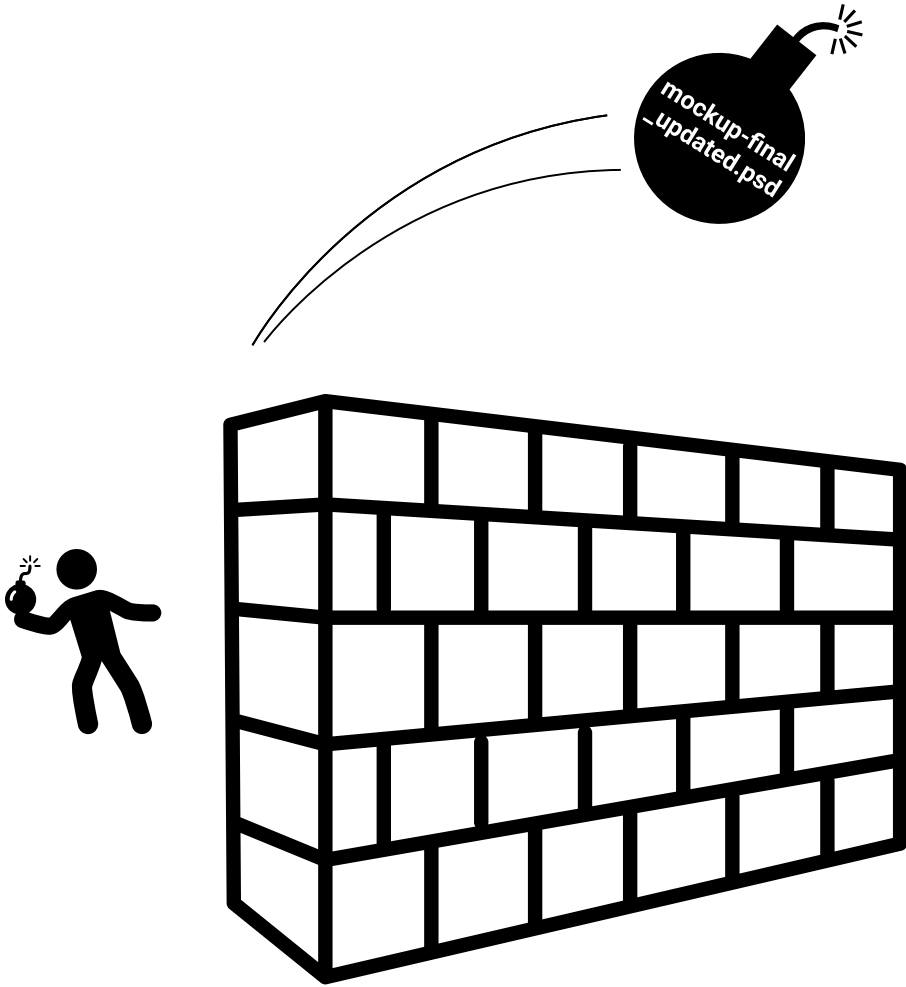


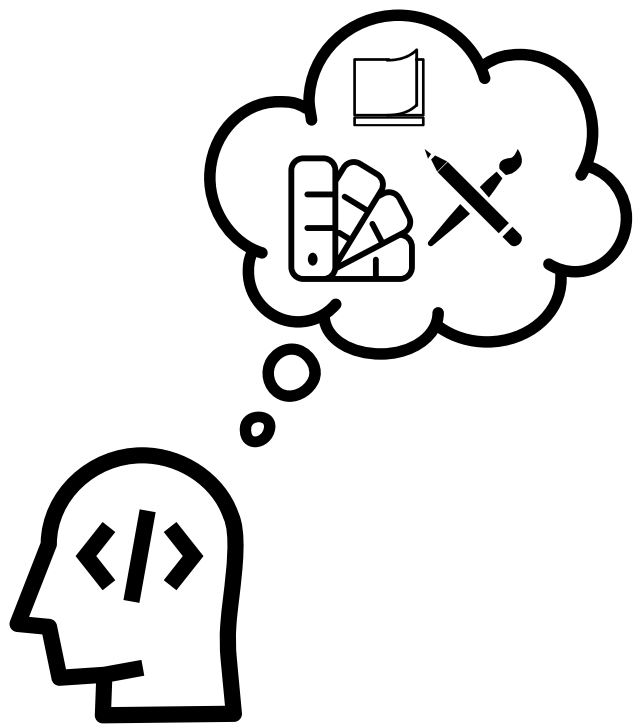
# Things Designers and Developers Should Know

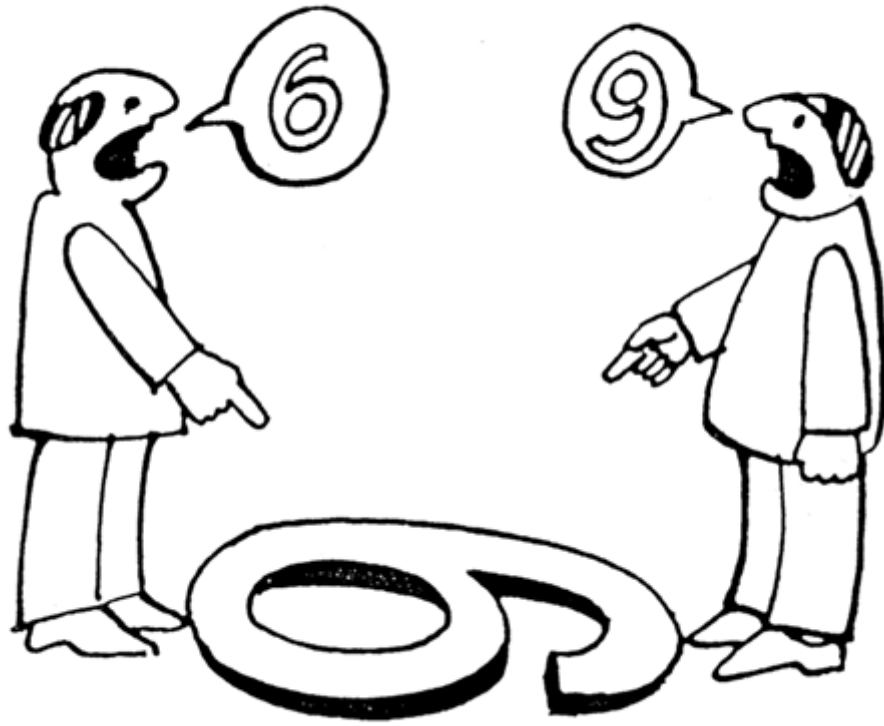
Ben Buchanan

@200okpublic, designops.expert









<b>Design</b>		<b>Dev</b>
Creativity, problem solving	↔	Creativity, problem solving
Design critique	↔	Code review
Sketching, discovery	↔	Spikes, PoC
Oh it's easy, my nephew designed a website!	↔	Oh it's easy, my nephew built a website!

**Knowing to understand** empathy and respect

**Knowing to do** execution

初心



Golden rule of collaborative knowledge

Learn about others as you'd  
have them learn about you.

Corollary

Be a guide for others to  
find the joy you found.

## **The inevitable question...**

Should designers code?

Should developers design?

**It's nonsense!**

Design and development are interlinked.

## **Would we ask...?**

Should we be good at our jobs?

Should we build empathy with coworkers?

## **To what level should you code/design?**

- None at all
- Understand but don't do
- Do to non-production standard
- Do to production standard

## Levels of knowledge

- ~~None at all~~ part of the job
- Understand but don't do
- Do to non-production standard
- Do to production standard

## Levels of knowledge

- ~~None at all~~ part of the job
- Understand but don't do
- Do to non-production standard
- ~~Do to production standard~~ career change



## Opinions...

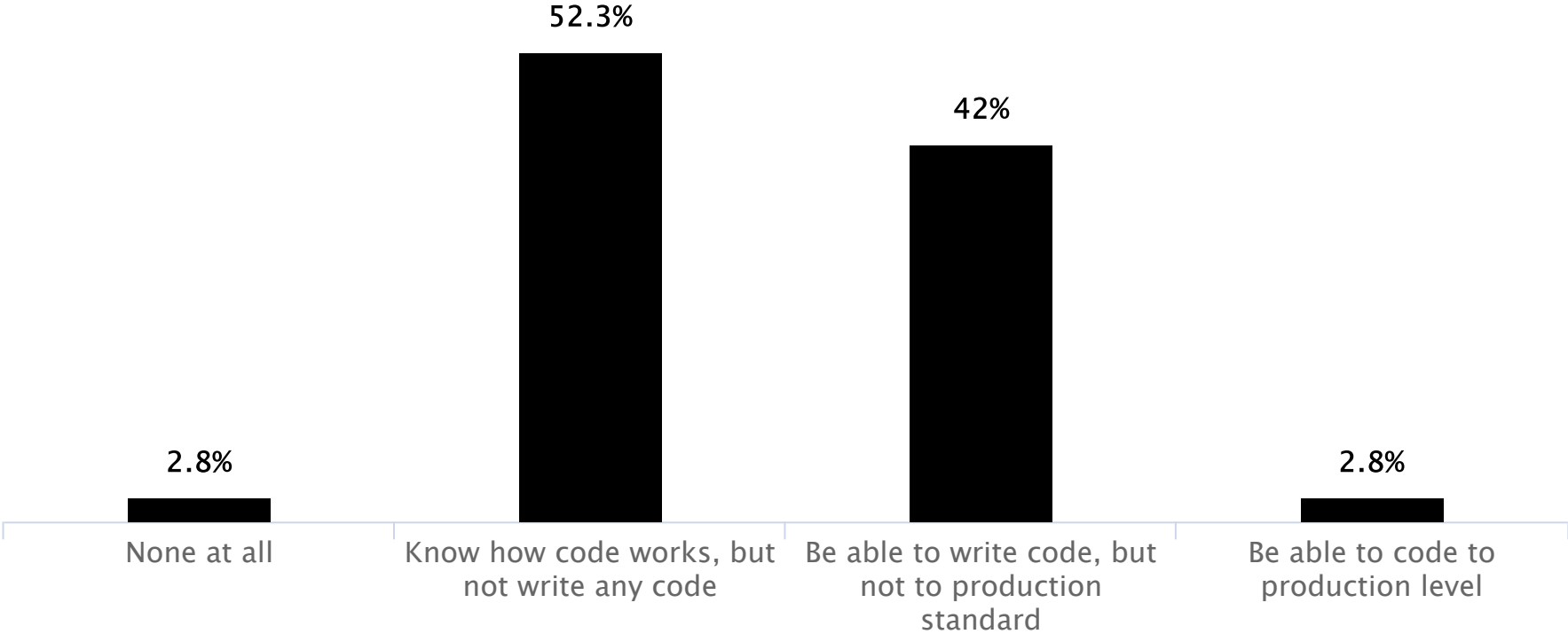


## **Data!**

Surveyed 176 people on design  
and development collaboration.

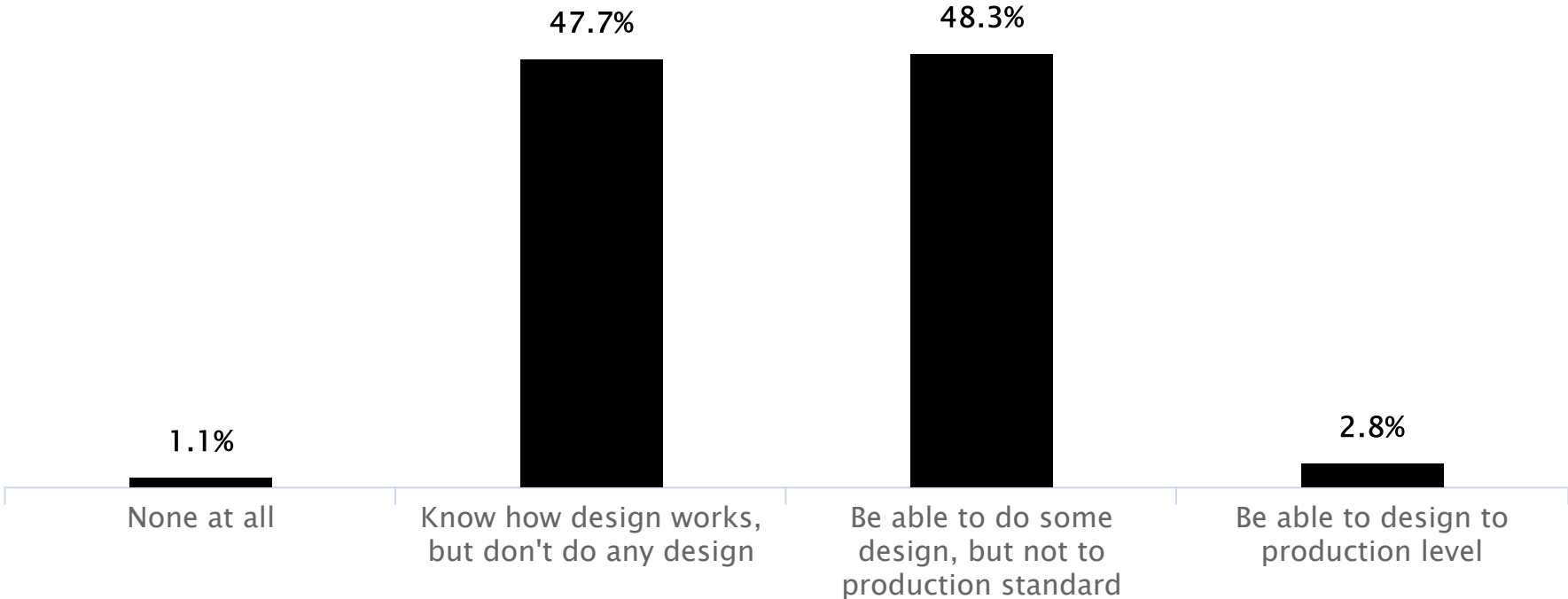
# Results

How much code should designers know or do?



# Results

How much design should developers know or do?



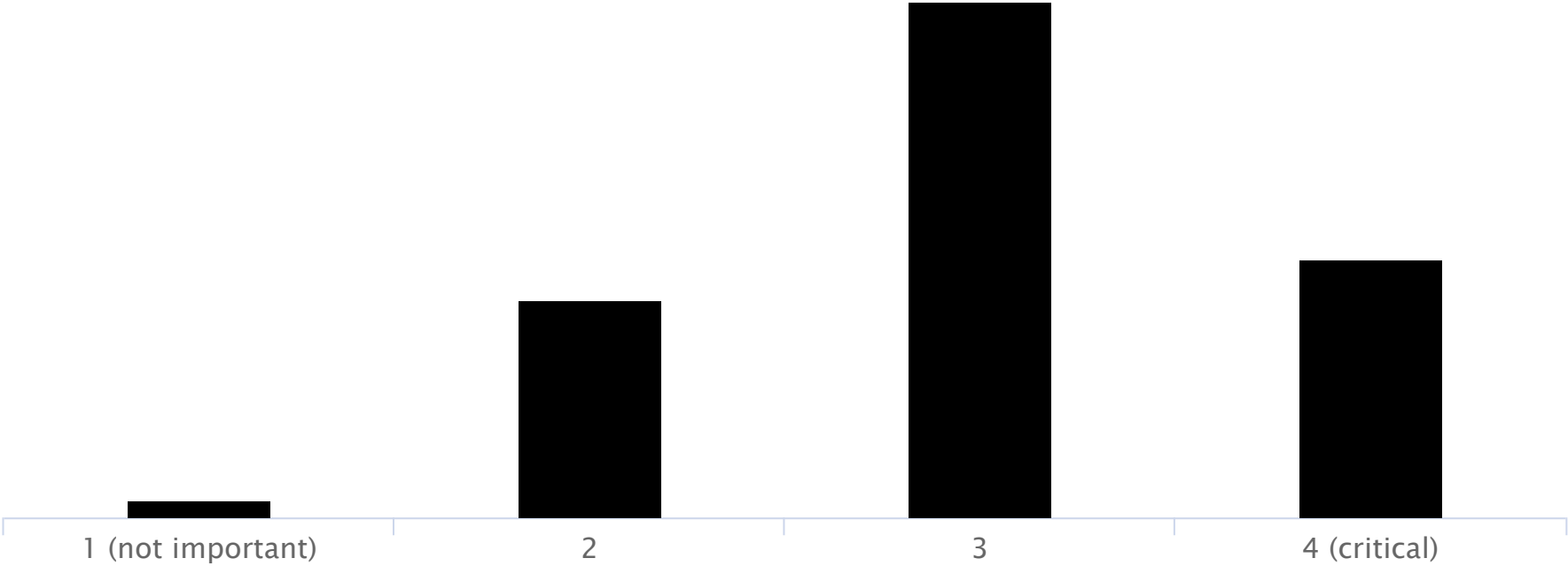
## **Levels (now with data for extra shine!)**

- ~~None at all~~
- Understand but don't do
- Do to non-production standard
- ~~Do to production standard~~

## **What should you learn, then?**

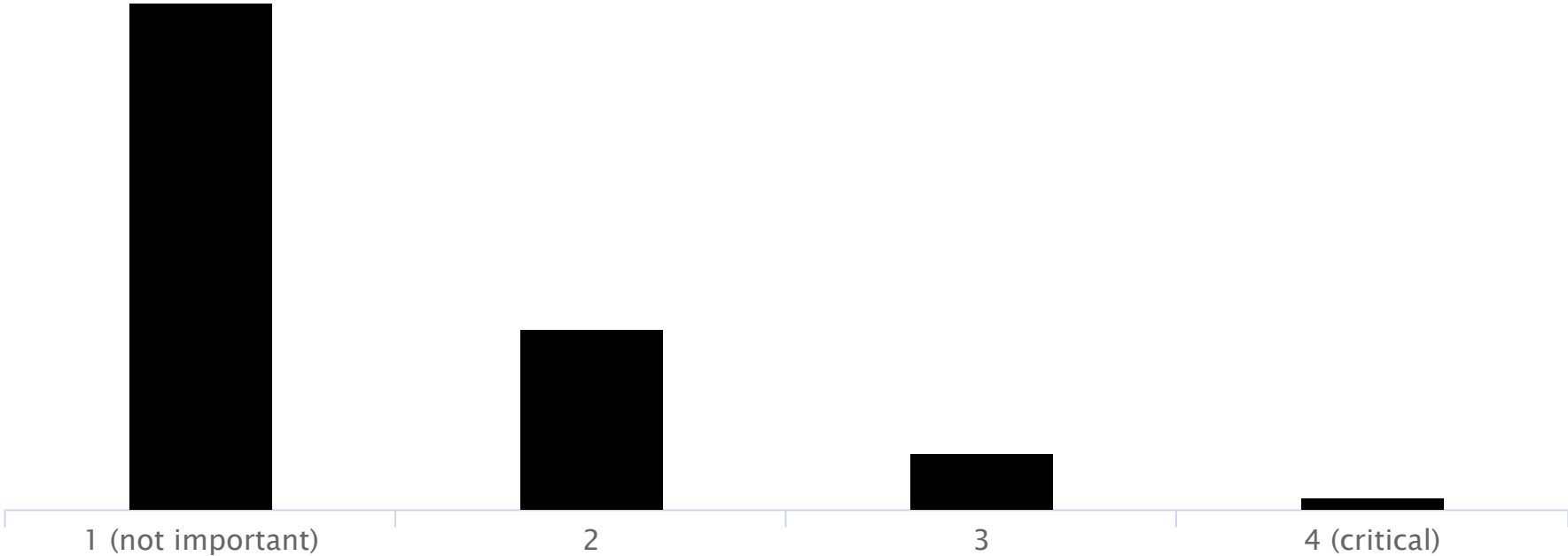
- Roles and process
- 'The basics'
- History and schools of the craft

How important is it to understand roles, process and principles?



# Results

How important is it to understand history and schools?





# We are part of history



𠃉 1	𠃉 11	𠃉 21	𠃉 31	𠃉 41	𠃉 51
𠃉 2	𠃉 12	𠃉 22	𠃉 32	𠃉 42	𠃉 52
𠃉 3	𠃉 13	𠃉 23	𠃉 33	𠃉 43	𠃉 53
𠃉 4	𠃉 14	𠃉 24	𠃉 34	𠃉 44	𠃉 54
𠃉 5	𠃉 15	𠃉 25	𠃉 35	𠃉 45	𠃉 55
𠃉 6	𠃉 16	𠃉 26	𠃉 36	𠃉 46	𠃉 56
𠃉 7	𠃉 17	𠃉 27	𠃉 37	𠃉 47	𠃉 57
𠃉 8	𠃉 18	𠃉 28	𠃉 38	𠃉 48	𠃉 58
𠃉 9	𠃉 19	𠃉 29	𠃉 39	𠃉 49	𠃉 59
𠃉 10	𠃉 20	𠃉 30	𠃉 40	𠃉 50	

# Recent history



Diagram for the computation by the Engine of the Numbers of Bernoulli. See Note G. (page 722 et seq.)

Number of Operations. Number of Operations.	Variables used receiving results.	Indication of change in the value of any Variable.	Statement of Results.	Data								Working Variables.				Result Variables.			
				V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	V <sub>6</sub>	V <sub>7</sub>	V <sub>8</sub>	V <sub>9</sub>	V <sub>10</sub>	V <sub>11</sub>	V <sub>12</sub>	V <sub>13</sub>	V <sub>14</sub>	V <sub>15</sub>	V <sub>16</sub>
1	X	V <sub>1</sub> × V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n	2	n	2n	2n	2n										
2	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
3	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
4	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
5	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
6	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
7	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
8	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
9	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
10	X	V <sub>1</sub> × V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n	2	n	2n	2n	2n										
11	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
12	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
13	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
14	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
15	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
16	X	V <sub>1</sub> × V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n	2	n	2n	2n	2n										
17	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
18	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
19	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
20	X	V <sub>1</sub> × V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n	2	n	2n	2n	2n										
21	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
22	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
23	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												
24	-	V <sub>1</sub> - V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n-1	1		2n-1												
25	+	V <sub>1</sub> + V <sub>1</sub>	{V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub> V <sub>1</sub> = V <sub>1</sub>	-2n+1	1		2n+1												

Here follows a repetition of Operations thirteen to twenty-three.

# Schools

## Design Movements

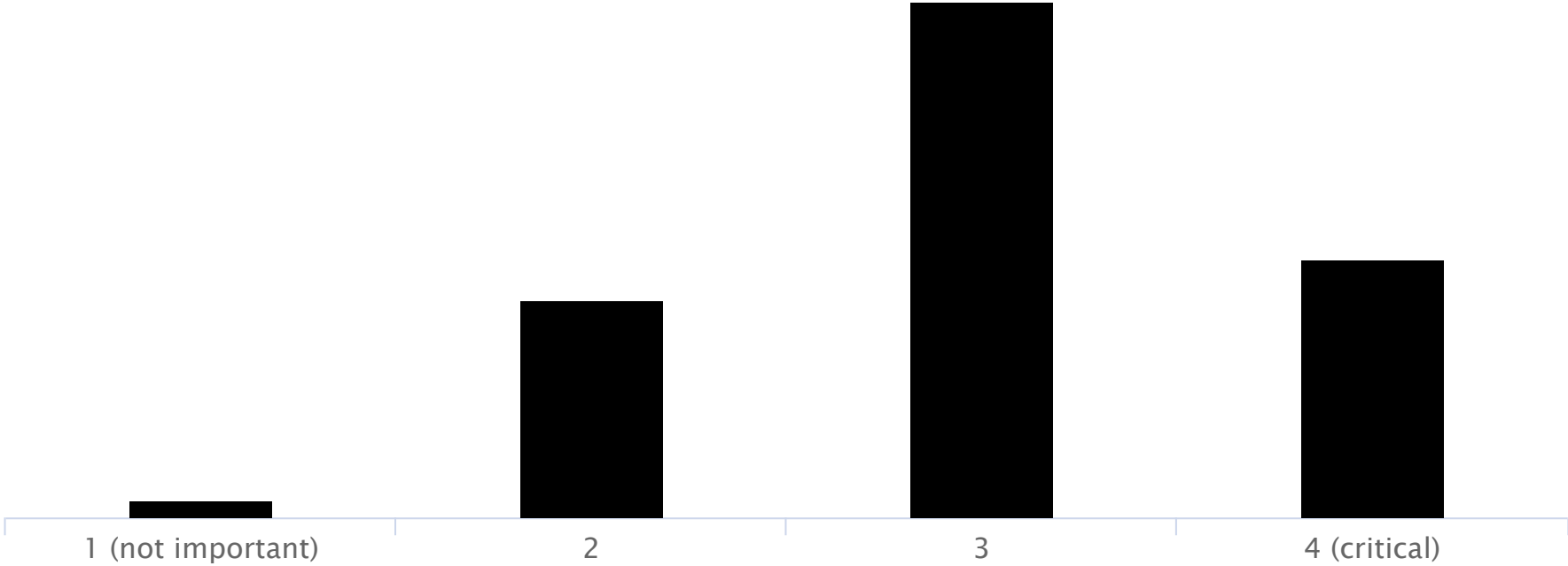
---

Minimalism, Bauhaus, Modernism,  
Postmodernism

## Programming Paradigms

Procedural, Literate, Object  
Oriented, Functional

Back to roles, process, basics

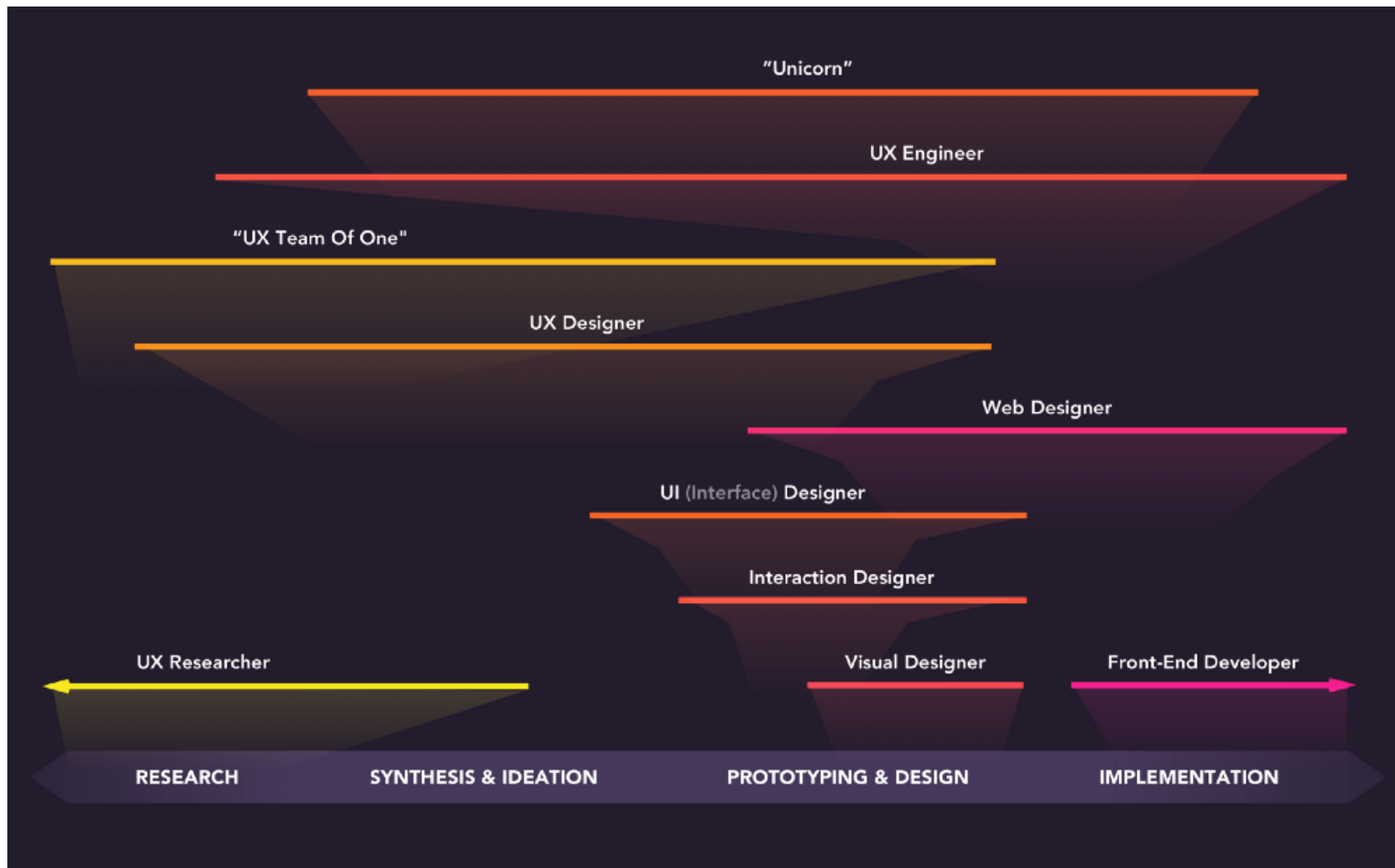


## Roles & Process



# Design Roles

- **Research** does it solve the problem?
- **UX** how it feels and flows
- **Interaction design** how it behaves
- **Visual design** how it looks



<https://uxdesign.cc/the-spectrum-of-digital-design-roles-in-2018-3286390a9966>





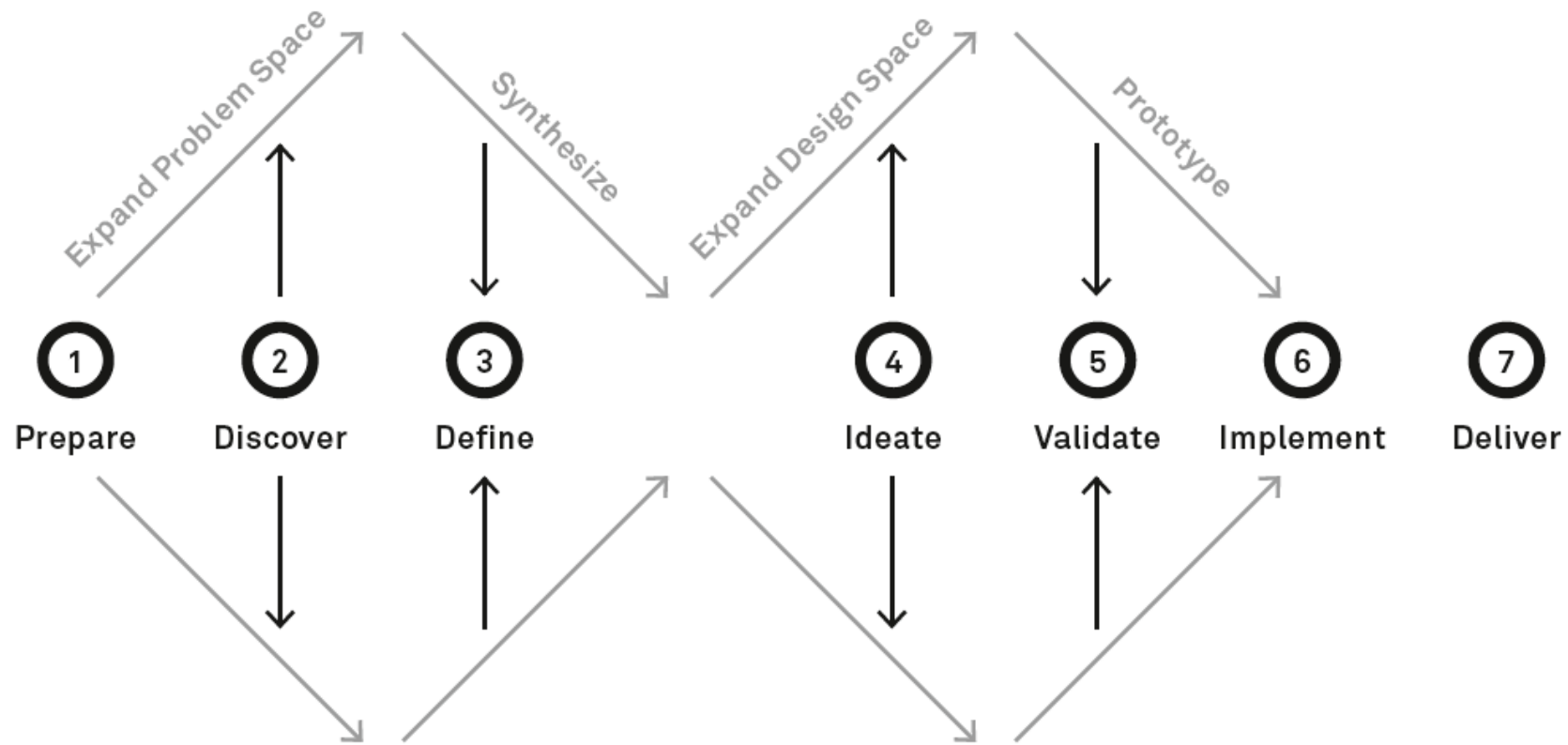
# Development Roles

- **Frontend/UI** code for rendering things
- **Backend/Application** code to apply business rules
- **Data** code to supply content
- **DevOps** code to deploy the other code
- **QA** code to make sure the other code is still working

Would you believe developers haven't produced lovely infographics about their roles?

# Process

While every team differs,  
there are common shapes.



from *Intersection* by Milan Guenther, [www.intersectionbook.com](http://www.intersectionbook.com)  
based on a model by the UK Design Council

Noise / Uncertainty / Patterns / Insights

Clarity / Focus

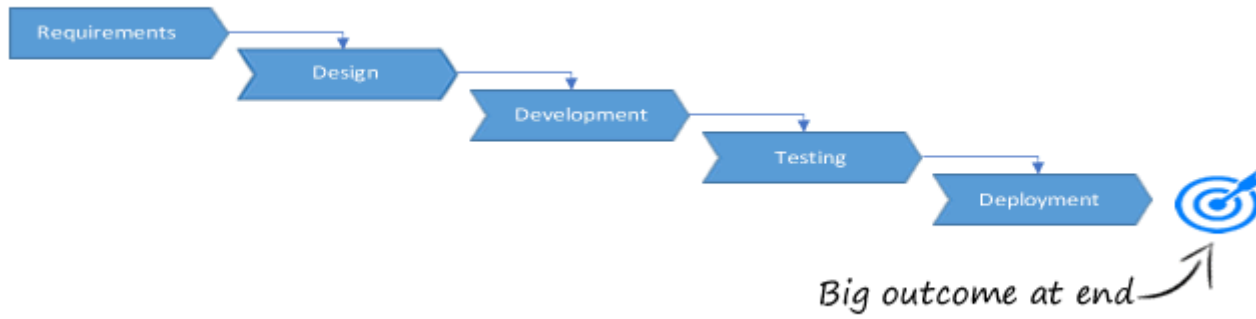


Research & Synthesis

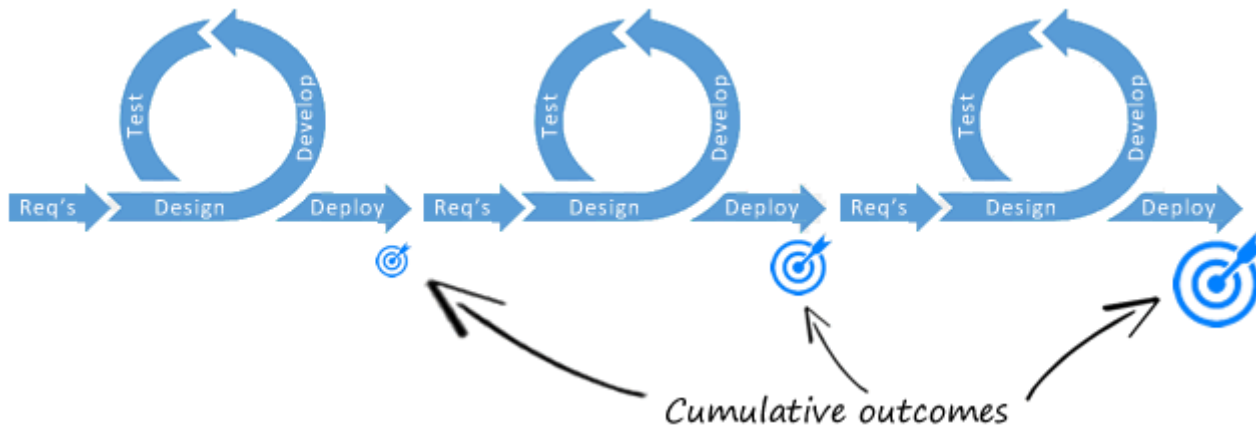
Concept / Prototype

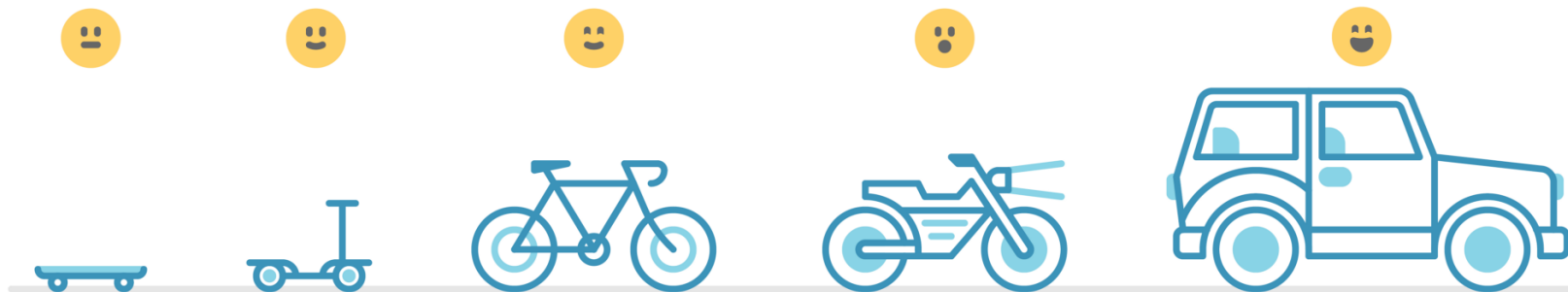
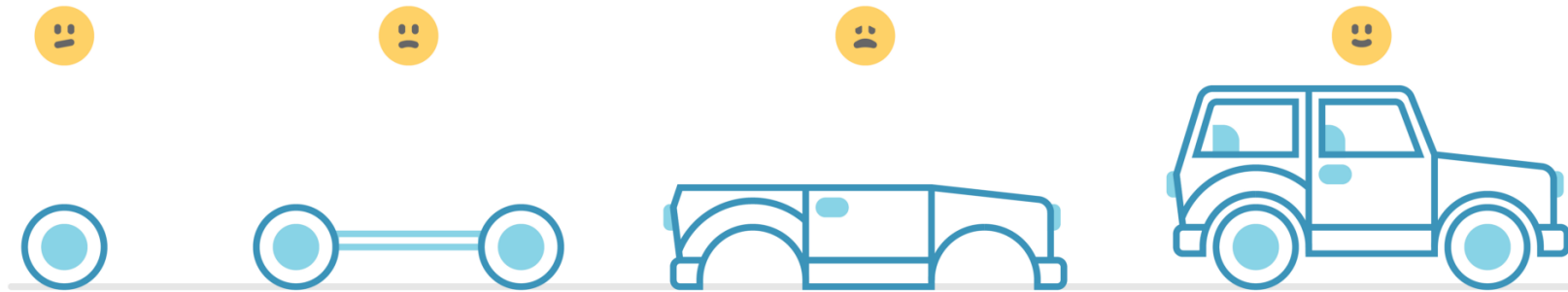
Design

## Waterfall



## Agile





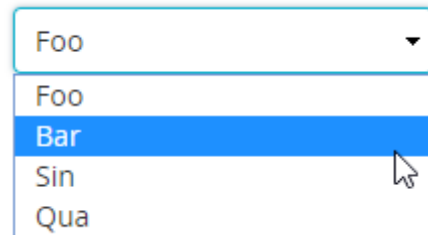
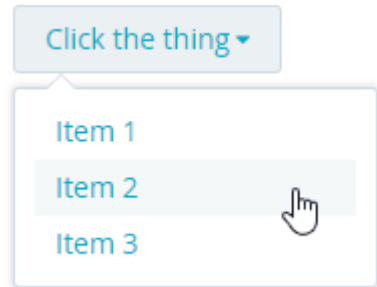
<https://medium.com/@awilkinson/skateboard-bike-car-6bec841ed96e>

# The Basics™ for designers

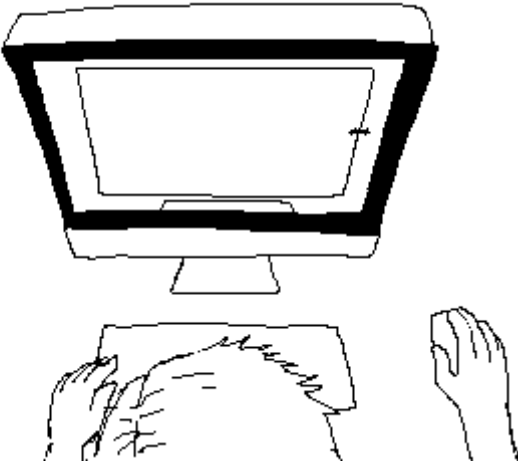
- The medium HTML, CSS, JS
- Where design breaks code accessibility, performance
- Working together versioning



# HTML



# CSS layout

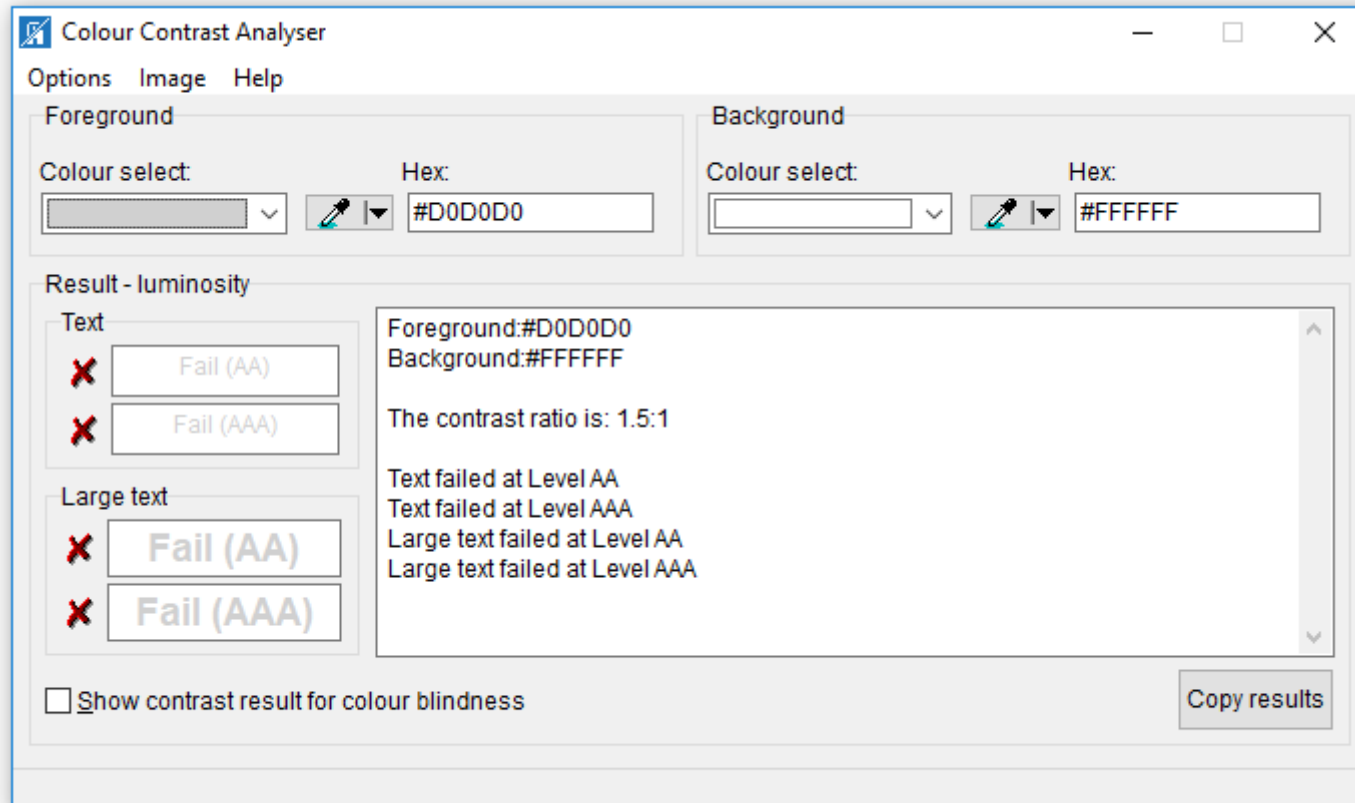


# JavaScript

Got an idea?



# Accessibility



# Performance

## PERFORMANCE BUDGET CALCULATOR

Calculate A Performance Budget For Your Site.

Your performance budget is 375KB



Total: 375KB

Finish

© Jonathan Fielding @jonthanfielding

## **"Versions"**

draft\_2.psd

draft\_2\_right-font.psd

final.psd

final\_fixed-colour.psd

final\_fixed-colour\_updates-from-client.psd

first\_draft.psd

## **"Versions"**

draft\_2.sketch

draft\_2\_right-font.sketch

final.sketch

final\_fixed-colour.sketch

final\_fixed-colour\_updates-from-client.sketch

first\_draft.sketch

## **Datestamps**

20181020\_first\_draft.sketch

20181021\_draft\_2.sketch

20181022\_fix-font.sketch

20181023.1\_final.sketch

20181023.2\_fixed-colour.sketch

20181023.3\_client-updates.sketch



## SemVer

project\_0.1.0.sketch

project\_0.2.0.sketch

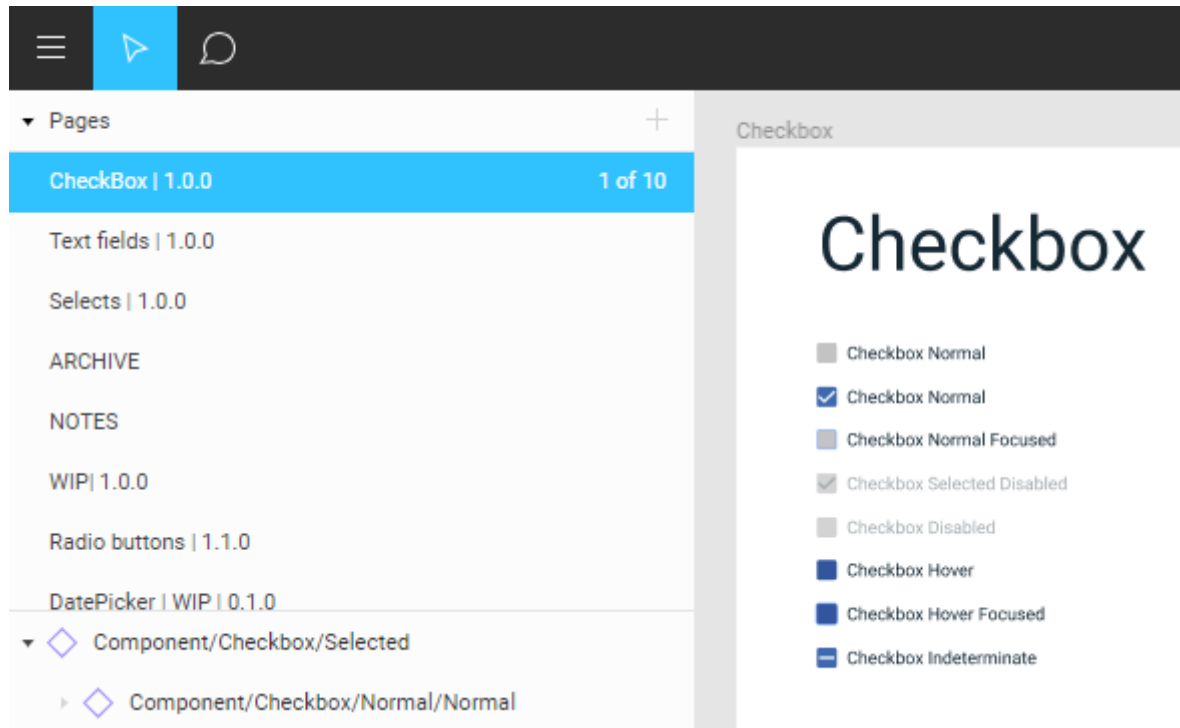
project\_0.2.1.sketch

project\_1.0.0.sketch

project\_1.0.1.sketch

project\_1.2.0.sketch

# Cloud systems need versions too



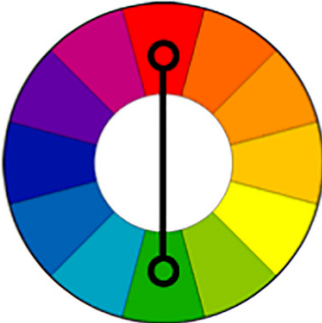
## Then...

- Keep learning code!
- CLI basics
- Data structures
- AI concepts

# The Basics™ for developers

- Design is not random fundamentals
- Design language fundamentals
- Design as problem solving research, Design Thinking

# Colour theory



Complementary



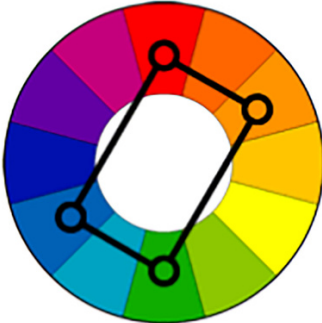
Analogous



Triadic



Split Complementary



Tetradic

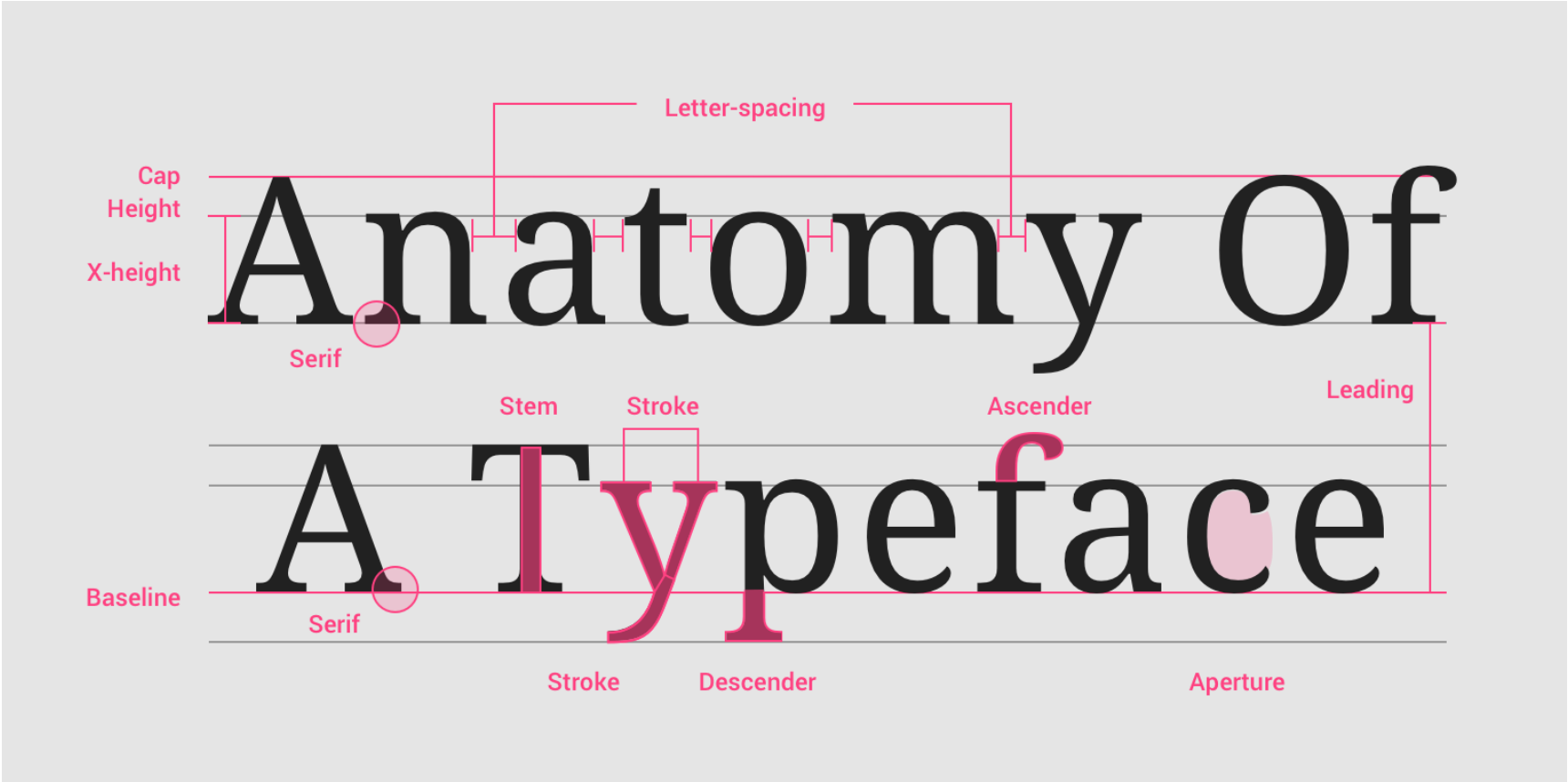
# Colour psychology

## COLOR EMOTION GUIDE

The infographic is a large, colorful graphic divided into horizontal bands of color, each representing an emotion and its associated psychological traits. The bands are: OPTIMISM (yellow), FRIENDLY (orange), EXCITEMENT (red), CREATIVE (purple), TRUST (blue), PEACEFUL (green), and BALANCE (grey). Each band lists related emotions and traits. The graphic is filled with a dense collage of brand logos and icons, including: Nikon, UPS, NBC, Google, IMDB, Amazon, Sprint, Payless, SUBWAY, eBay, Syfy, Coca-Cola, CNN, Virgin, Exxon, ACE, stanz, BEST BUY, Target, Hertz, DHL, HP, Intel, Lynx, Lays, Oreo, Welch's, Prego, Canon, Avis, Shutterfly, McDonald's, Walmart, Oral-B, TACO BELL, Heinz, and many others. At the bottom, there are several icons: a megaphone, a yin-yang symbol, a peace sign, a fist, a lightbulb, a lightning bolt, a smiley face, and a thumbs up.

Color	Emotion	Associated Traits
Yellow	Optimism	Clarity, Warmth
Orange	Friendly	Cheerful, Confidence
Red	Excitement	Youthful, Bold
Purple	Creative	Imaginative, Wise
Blue	Trust	Dependable, Strength
Green	Peaceful	Growth, Health
Grey	Balance	Neutral, Calm

# Typography



# Type psychology





# C.R.A.P.

**CONTRAST**

**COLOR**

Unique elements in a design should stand apart from one another. One way to do this is to use contrast. Good contrast in a design – which can be achieved using elements like color, tone, size, and more – allows the viewer's eye to flow naturally.

**TO NE/VALUE**

**SIZE/SHAPE**

To the left, you can see 4 ways to create contrast in your design.

**DIRECTION**

**REPETITION**

Repetition breeds cohesiveness in a design. Once a design pattern has been established – for example, a dotted border or a specific typographic styling – repeat this pattern to establish consistency.

The short version?

Establish a style for each element in a design and use it on similar elements.

**PROXIMITY**

Proximity allows for visual unity in a design. If two elements are related to each other, they should be placed in close proximity to one another. Doing so minimizes visual clutter, emphasizes organization, and increases viewer comprehension.

Imagine how ridiculous it would be if the proximity icons on this graphic were located on the other side of this document.

**ALIGNMENT**

Proper alignment in a design means that every element in it is visually connected to another element. Alignment allows for cohesiveness; nothing feels out of place or disconnected when alignment has been handled well.

*quick reference poster*

a handy *paperleaf* resource

# Animation



## Voice & Tone



## Then...

- User research
- Sketching
- Design Thinking

Golden rule of collaborative knowledge

Learn about others as you'd  
have them learn about you.

Corollary

Be a guide for others to  
find the joy you found.

**Lead** by understanding

**Lead** by doing

**Thank you.**

Thanks to all those who shared the joy of design with me.

## Links

- [Learn to Code HTML & CSS](#)
- [Chris Coyier: Hey designers, if you only know one thing about JavaScript, this is what I would recommend](#)
- [WAI: Accessibility for designers](#)
- [Webaim: Accessibility for designers](#)
- [Paciello Group CCA](#)
- [Yesenia Perez-Cruz: Design decisions through the lens of performance](#)
- [Brad Frost: performance budget builder](#)
- <https://www.performancebudget.io/>



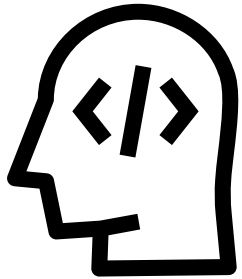
## Links

- [Understanding colour theory](#)
- [Canva: learn design](#)
- [The illusion of life \(animation\)](#)
- [Voice and Tone](#)
- [Voice and Tone guides](#)
- [Spectrum of design roles](#)

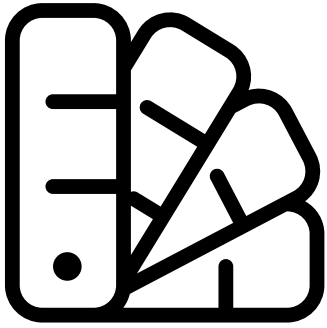
# Image credits



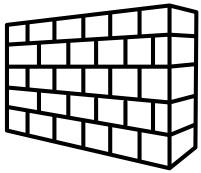
Created by Adrien Coquet  
from the Noun Project



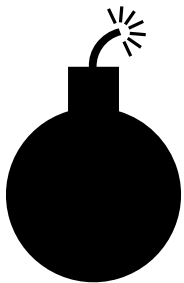
Created by Lakshisha  
from the Noun Project



Created by BomSymbols  
from the Noun Project



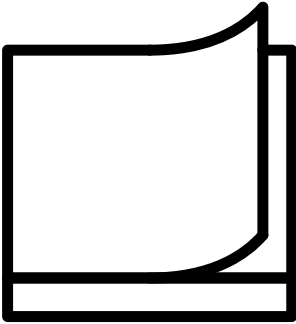
Created by Aly Dodds  
from the Noun Project



Created by B Barrett  
from the Noun Project



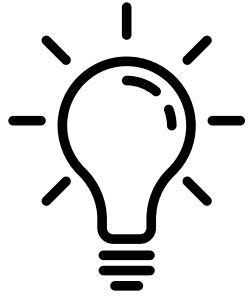
Created by Nikita Kozin  
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Created by Grégory Montigny  
from the Noun Project



Created by Trevor Dsouza  
from the Noun Project



Created by Maxim Kulikov  
from the Noun Project



Created by GD Creativ  
from the Noun Project

## Image credits

- <https://fstoppers.com/education/how-color-theory-improves-your-photography-and-retouching-215697>
- <https://thelogocompany.net/blog/infographics/psychology-color-logo-design/>
- <https://material.io/design/typography/understanding-typography.html>
- <https://www.crazyegg.com/blog/psychology-of-fonts-infographic/>
- <https://paper-leaf.com/blog/2012/10/principles-of-design-quick-reference-poster/>
- Squiggle from <https://thedesignsquiggle.com/>

Some I could not find a definitive source to credit.