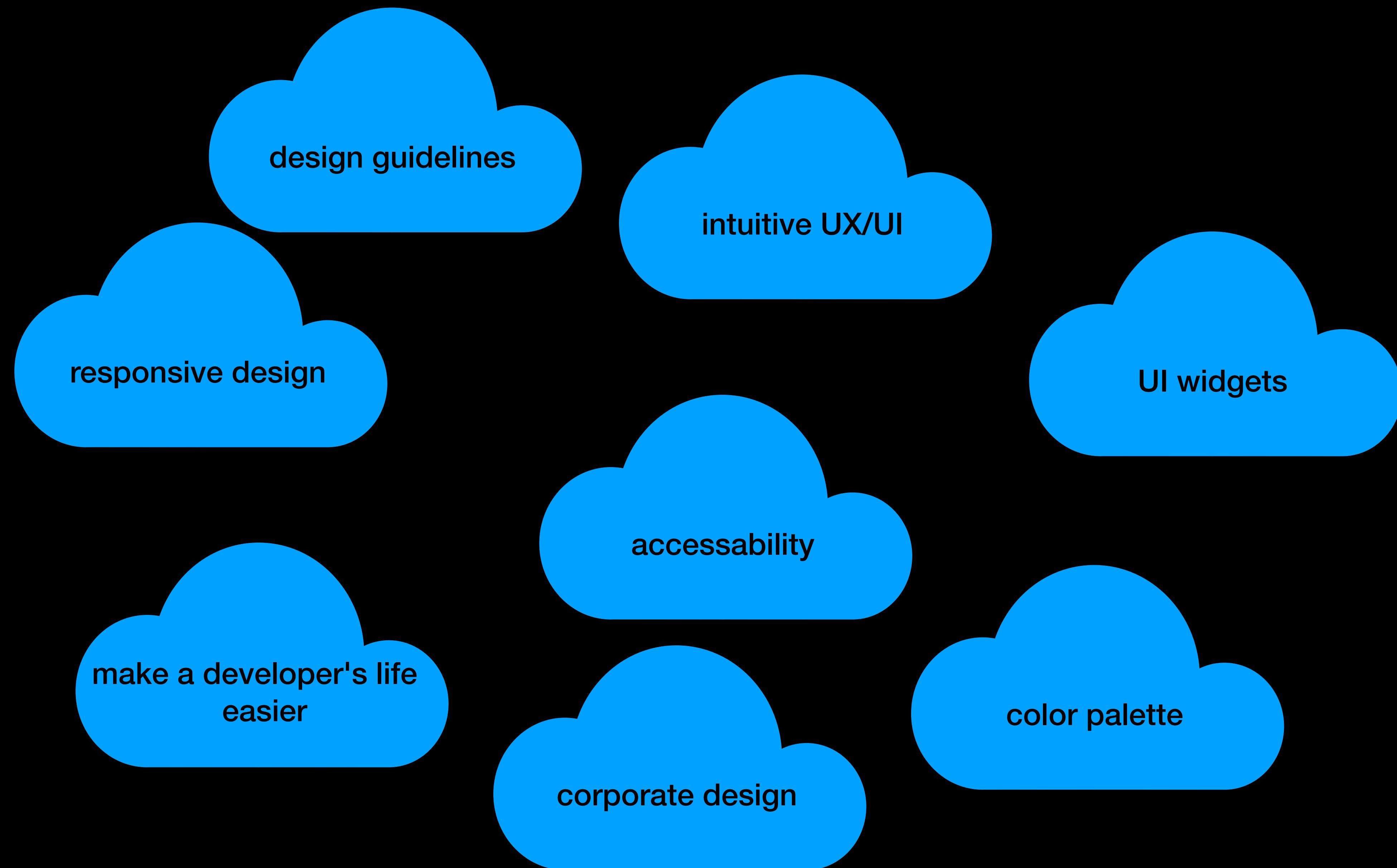
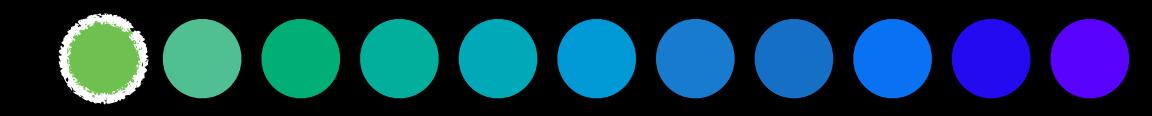


Bootstrap?  
Material Design?  
Prime{NG|Vue|React}?  
Tailwind?  
... or something else?

**Stephan Rauh**  
**April 2021**



# What's in it for you?



# Areas covered by different UI frameworks

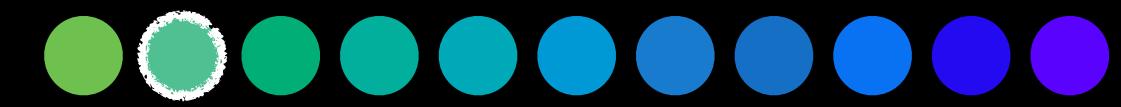


Bear with me - I know you're going to hate this slide.

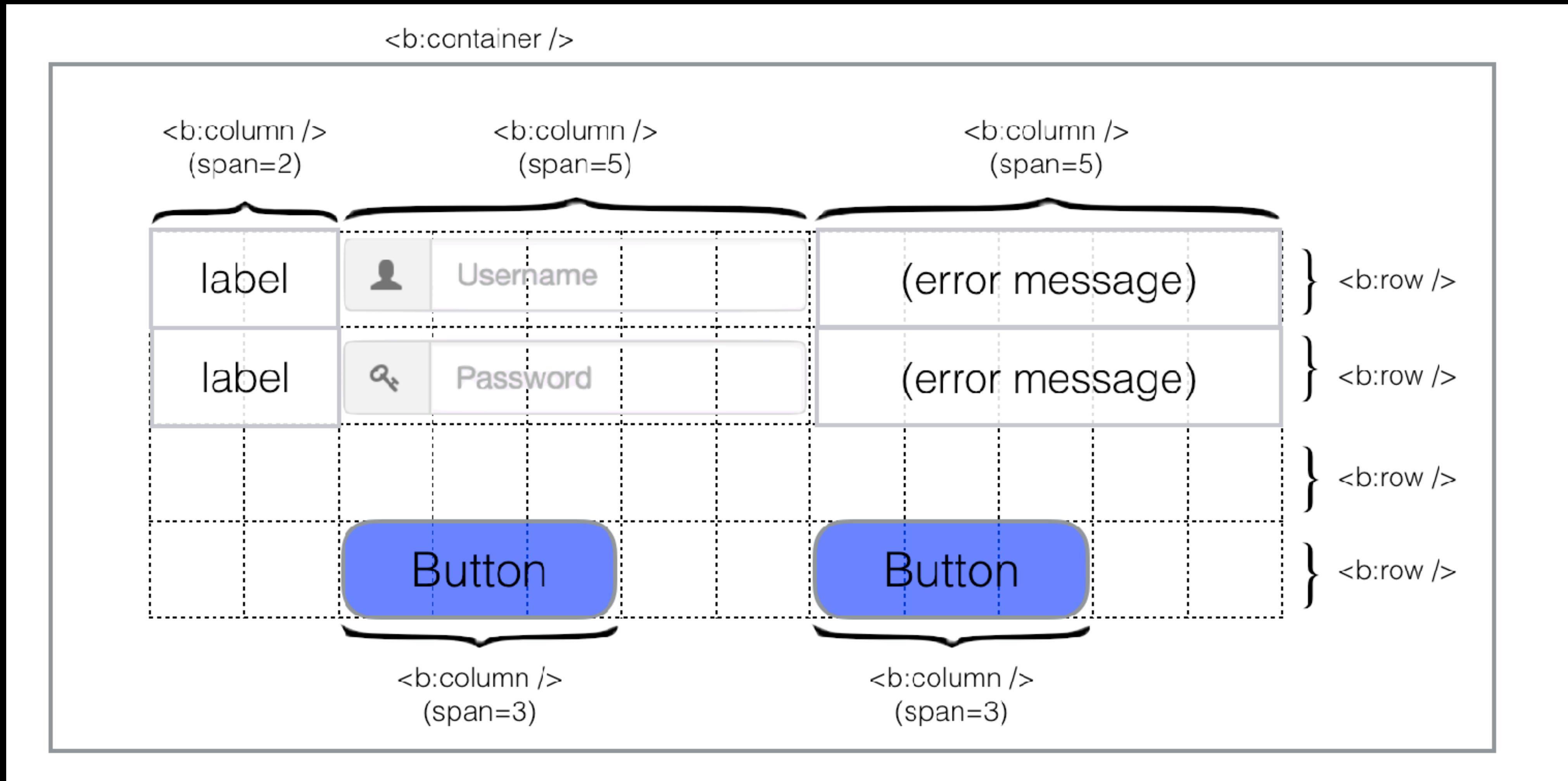
I'm still looking for the correct words describing what I have in mind!

	Tailwind	Bootstrap 5	PrimeNG	Material Design
opinionated design guidelines	no	yes	no	yes
intent	supports designers (set of CSS rules)	empower developer to implement good UIs	focuses on widgets	specification of a good UI
responsive design	yes	yes	yes	yes
UI widgets	no (commercial add-on)	yes (few, but enough)	yes (many!)	depends on the implementation
supports accessibility out-of-the-box	no	yes (documentation)	yes (widgets are accessible)	depends on the implementation
color palette guidance	some	yes	no	yes
flexibility	swiss army knife	opinionated	limited customizability	opinionated set of guidelines
corporate design	just a matter of customization	customization does the trick (most of the time)	may or may not match (inflexible components)	customization does the trick (most of the time)

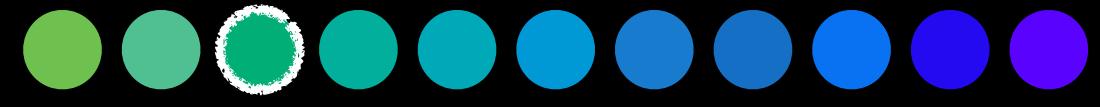
# Responsive design in a nutshell



## Grid system (usually 12 columns):



# Tailwind



- huge set of technical CSS classes
- covers everything a designer needs:
  - margins, paddings, borders
  - tables and grids
  - color palettes
  - typography
  - responsive design
- Swiss Army knife that can be used for everything

# Bootstrap



- 500 years of experience of the book printers
- opinionated CSS rules
- intent: making websites and applications responsive and functional
- empowers every developer to create a good design
- high level of consistency across platforms and applications
  - ... you recognize a Bootstrap design at first glance
- lots of custom themes available

# ng-bootstrap and ngx-bootstrap



- Angular-powered Bootstrap
- offer roughly a dozen components
- limited added value

Recommendation:

- start with pure Bootstrap
- add ngx-bootstrap if you encounter limitations



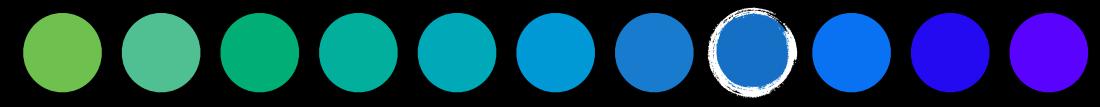
- Offspring of the PrimeFaces library
- focuses primarily on components  
(as opposed to page layout)
- ~ 100 Powerful JavaScript components
- responsive design
- Don't try to modify the layout of the widgets
  - it's possible to customize everything
  - but only to a certain extent

# Material Design



- Exhaustive set of UI / UX guidelines
- focuses on how various design elements interact to create an aesthetically pleasing website that's also mobile-friendly (<https://uxplanet.org/material-ui-vs-bootstrap-a-detailed-comparison-8fc9151db5ed>)
- Design language of Android
- Spend a day browsing their website!
  - even if you don't want to use it, you'll learn a lot
  - while you're at it, also visit <https://lawsوفux.com/>

# Material Design Implementations



- Material Design Lite (<https://getmdl.io/index.html>)
  - framework-agnostic
- Material Design Components (MDC Web)  
<https://material.io/develop/web>
  - framework-agnostic
- Material-UI for React.js (<https://material-ui.com/>)
- Vuetify (<https://vuetifyjs.com/en/>)
- Angular Material <https://material.angular.io/>  
(uses Flex Layout instead of the 12-column grid)

# Material Design Implementations



mdbootstrap (<https://mdbootstrap.com/>)

- Material Design for Bootstrap
- flavors for Angular, React, Vue, and pure CSS
- free + commercial components

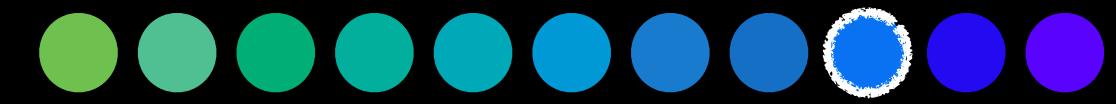
Materialize (<https://materializecss.com/>)

- simple and straightforward

# Thoughts on colors: normal vision



# Thoughts on colors: deutanopia sight



# Thoughts on colors: tritanopia sight



# Thoughts on colors: monochromacy sight

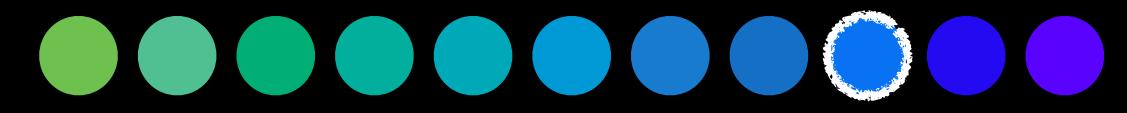


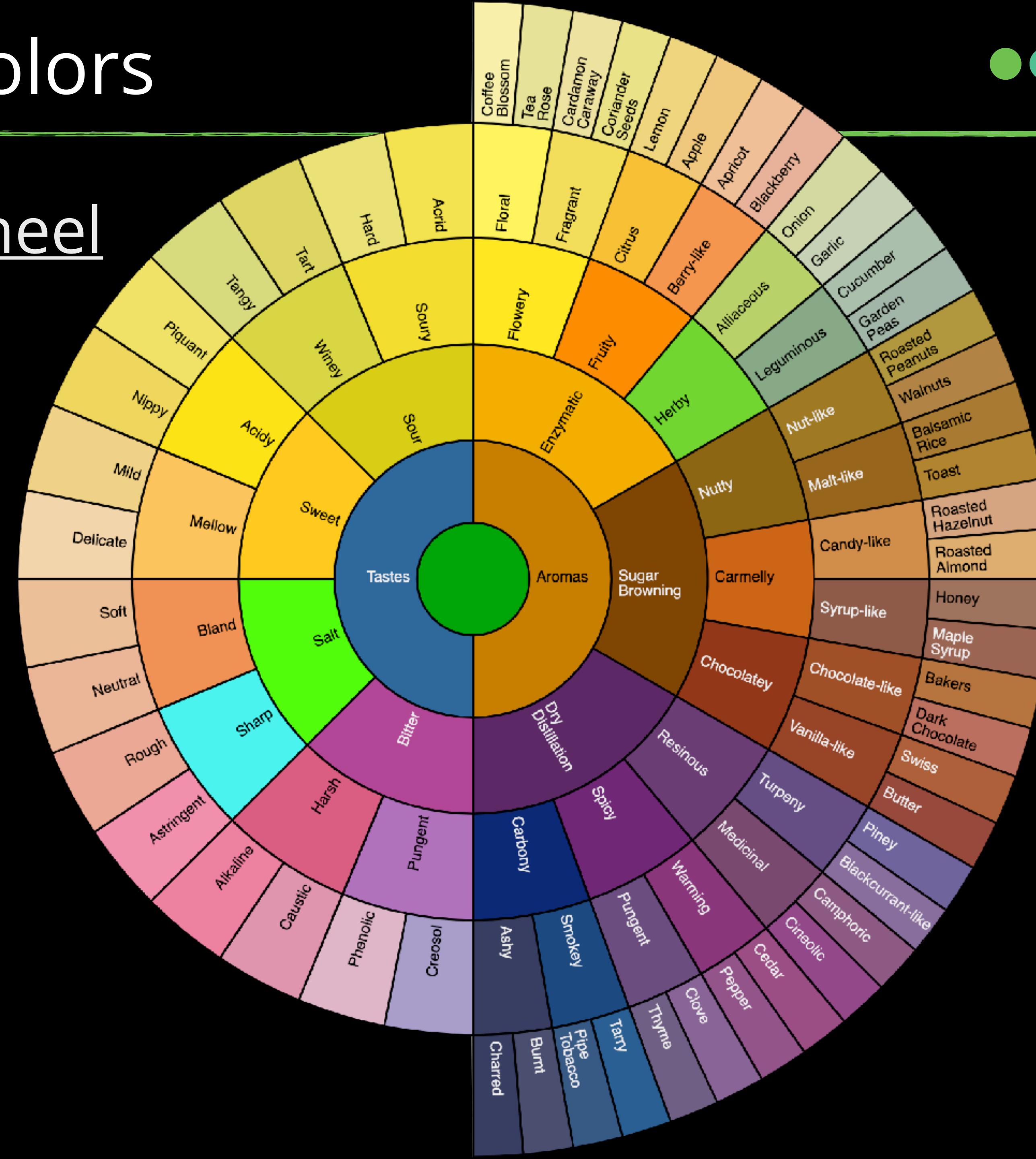
Image found at [https://en.wikipedia.org/wiki/Color\\_blindness](https://en.wikipedia.org/wiki/Color_blindness)



# Thoughts on colors



- Coffee flavor wheel



# Thoughts on colors



- Color palette generators
- <https://htmlcolorcodes.com/resources/best-color-palette-generators/>

# Atomic Design

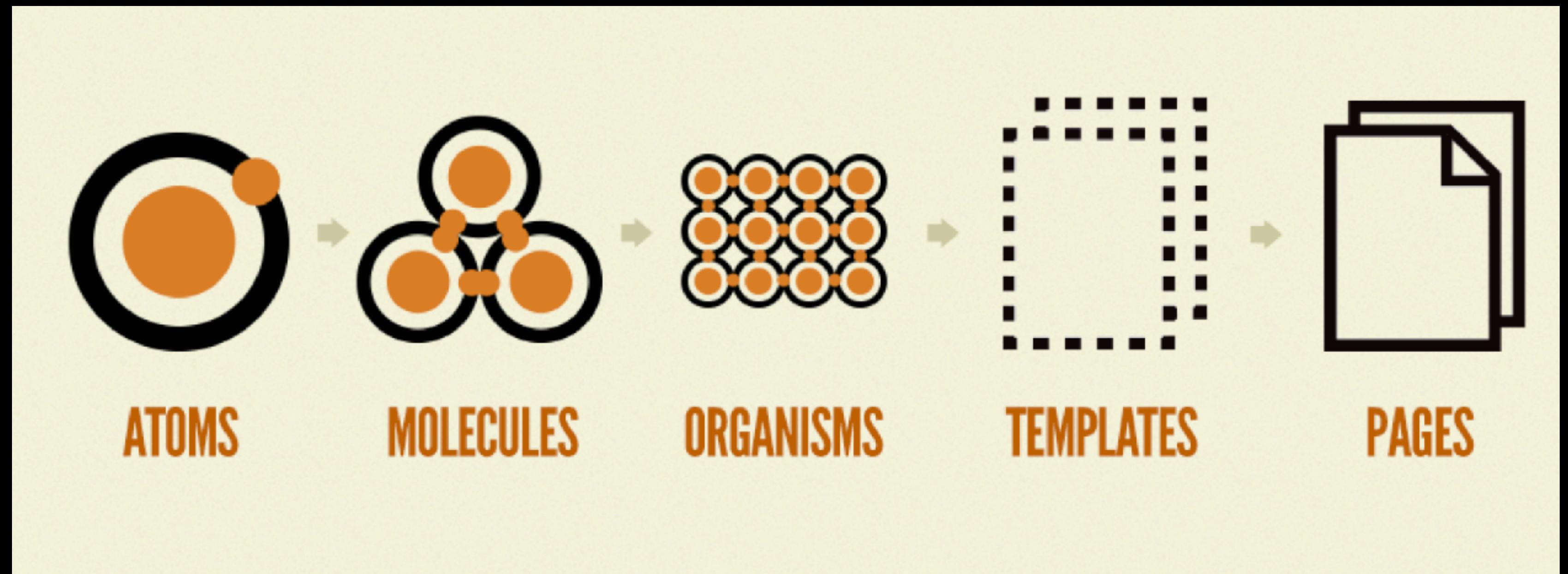


- Atoms: fields, buttons, labels

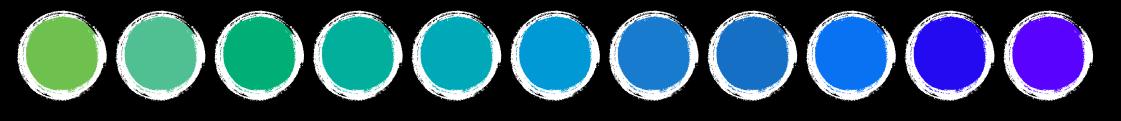
- molecules:  
label + field +  
button  
(units of  
interaction)

- organisms:  
units of page layout  
(menus, footer, payload area, ...)

- templates: page types (search page, edit page, help page, ...)



# Any Questions?



Don't hesitate to reach out to me!

[stephan.rauh@opitz-consulting.com](mailto:stephan.rauh@opitz-consulting.com)

[articles@beyondjava.de](mailto:articles@beyondjava.de)

[@beyondjava](https://twitter.com/beyondjava)

[www.beyondjava.net](http://www.beyondjava.net)

