

DHIS2: Design System & UI libraries

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2 October 2019

\$ whoami

Viktor Varland

Frontend Architect

Built crap for the web since 1996

Built *professional* crap for the web since 2008 at **Cisco**,
Sony Ericsson, **FIFA World Cup**, **Handelsbanken**, etc.
etc. etc.

Wait, a dev?

Where's the designer at?

DHIS2:

Design System & UI libraries:

A Developer PoV:

A.k.a.: The designer is on vacation and
all you get is me

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Topics herein

- DHIS2 Design System
- DHIS2 UI component libraries
- The why and the way
- Atomic Design
- Decomposition
- Constraints will preserve your sanity
- Pixel-perfection will destroy you
- Bottom-up and top-down designs
- Developer, you are Designer
- Designer, you are Developer
- This is getting a bit abstract

Recap!

15 frontend engineers

34 (and counting) applications

... **1** designer

Force multipliers

“In [military science](#), **force multiplication** or a **force multiplier** refers to a factor or a combination of factors that gives personnel or [weapons](#) (or other hardware) the ability to accomplish greater things than without it. The expected size increase required to have the same effectiveness without that advantage is the *multiplication factor*. For example, if a certain technology like [GPS](#) enables a force to accomplish the same results of a force five times as large but without GPS, then the multiplier is five. Such estimates are used to justify an investment cost for force multipliers.”

https://en.wikipedia.org/wiki/Force_multiplication

Application platform

The *true** reason we are building it is that it is a **force multiplier** so we can increase the effectiveness of our team.

** pro-tip: probably not the entire truth*

Design System

The *true** reason we are building it is that it is a **force multiplier** so we can cope when our one designer goes on vacation.

** pro-tip²: probably not the entire truth*

Design System

=><https://github.com/dhis2/design-system>

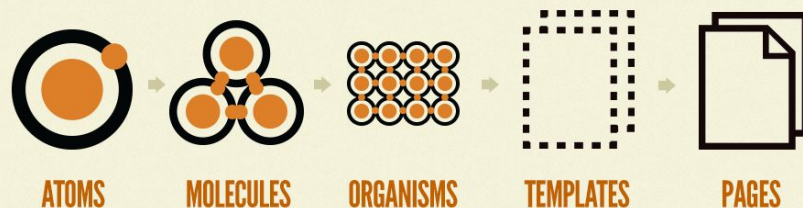
“The *DHIS2 Design System* is a collection of design principles and a library of UI components for designing apps for the DHIS2 platform. Using this system you can design and build apps that are usable, powerful and consistent with other DHIS2 apps.”

- Joe Cooper, The Designer

Design System + Atomic Design

=><http://atomicdesign.bradfrost.com>*

Brad Frost wrote an entire book about it, here's the TL;DR...



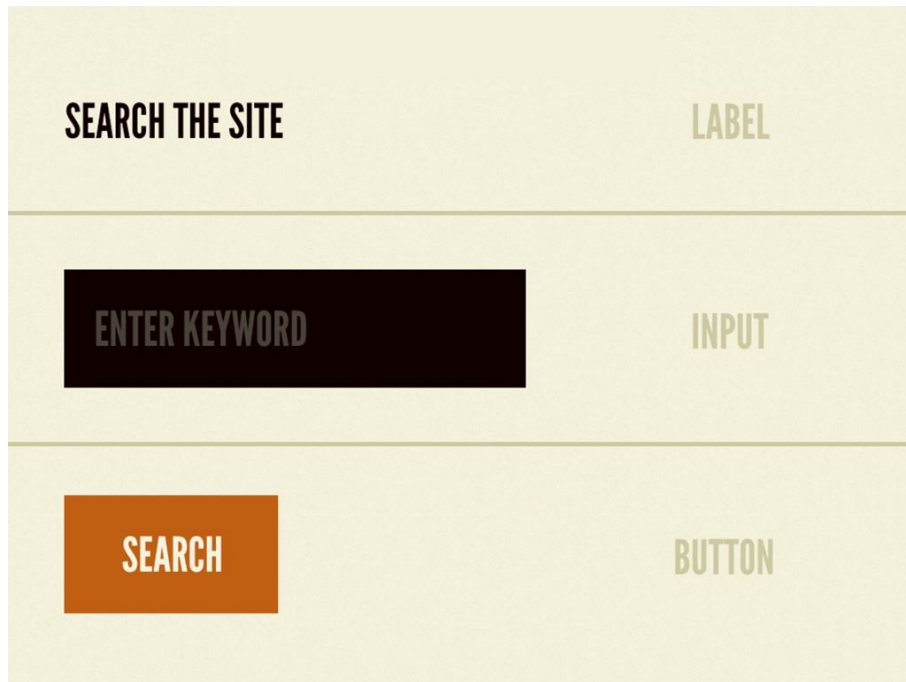
** pro-tip³: validate your https certs*

Atomic Design: Atoms

Atoms:

- The smallest functional piece of a layout
- *Think:* HTML elements e.g. <button>, <input>, etc.
- Does not make sense to use by itself:

e.g. a <label> without a related form control
is nonsensical.



Atomic Design: Molecules

Molecules

- Composed of atoms
- Smallest usable level in a layout
- *Think:* an `<input>` + `<label>` + `<button>` = molecule

SEARCH THE SITE

ENTER KEYWORD

SEARCH

Atomic Design: Organisms

Organisms:

- Composed of Atoms and/or Molecules and/or Organisms
- Vary wildly in scope; always distinct parts of the UI

e.g. a header bar consists of both atoms and molecules



Atomic Design: What's the point?

=><http://atomicdesign.bradfrost.com/chapter-2/#advantages-of-atomic-design>

All excellent, valid, points.

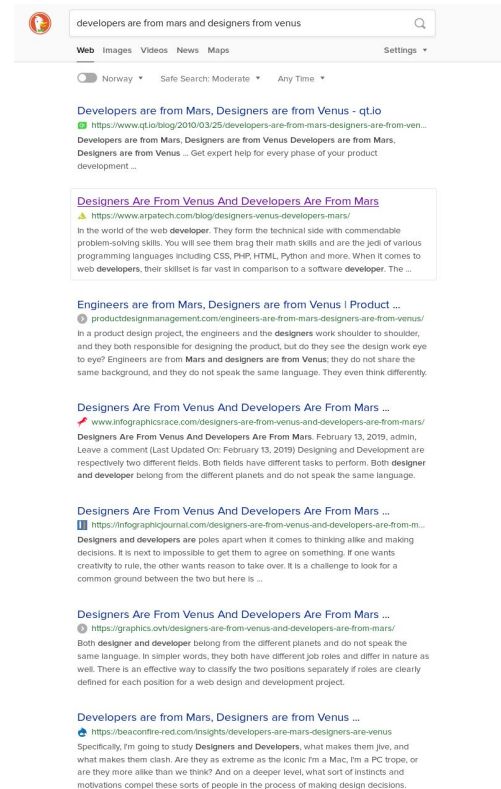
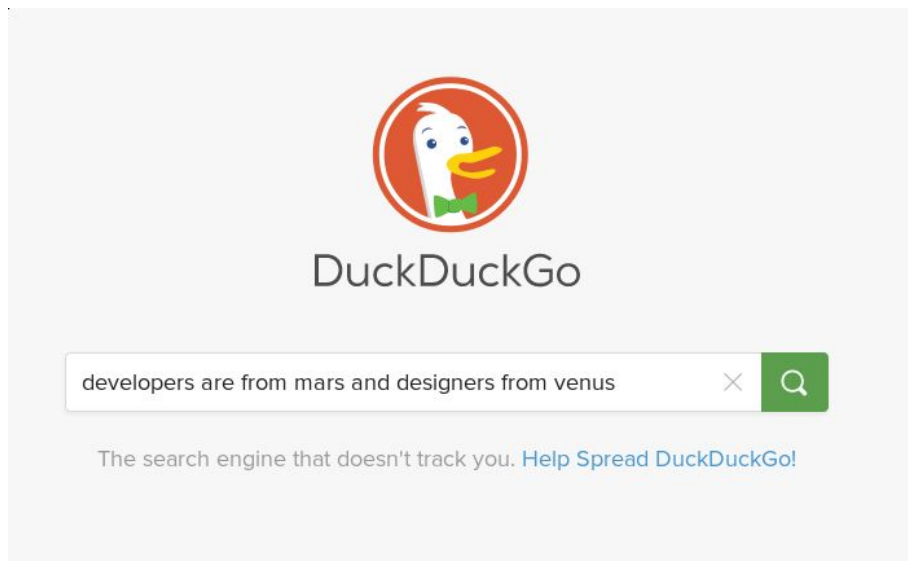
Thanks, Brad!

Atomic Design: Shared language

Atomic Design gives **designers**
and **developers** a common
language to **think** and **talk** about
user interfaces.

Atomic Design: Shared language?

Why is that important? Because of myths like this:



Atomic Design: Constraints are good

“Perfect is the enemy of good” - *Voltaire*

“Give them the third best to go on with; the second best comes too late, the best never comes” - *Robert Watson-Watt*

“If you have a <button> and want a slightly different <button>, just use the damn <button> you have.” - *Me, probably*

UI Core & Widgets

=><https://github.com/dhis2/ui-core/>

Simple version:

Atoms/molecules/organisms that **are not** tied to
how DHIS2 works

=><https://github.com/dhis2/ui-widgets/>

Simple version:

Atoms/molecules/organisms that **are** tied to
how DHIS2 works

... and d2-ui

=><https://github.com/dhis2/d2-ui/>

- Proceed with caution if you think about combining d2-ui components with Material UI in an application.
- Ui-core & ui-widgets + Material UI is fine however.

“Enough talk, now do.”

=><https://github.com/dhis2/design-system>

Remember

- A good design system facilitates collaboration
- Constraints are not a threat to creative expression
- A design system is a living document that must change and adapt to survive
- A design system and the implementation of the system are two parts of one whole; they cannot function effectively alone.

Remember²

- Embrace the chaos of teamwork across “design” and “development” and reject notions that designers and developers sit in opposing ivory towers.
- The question: “Does this belong in the design system proper or is it a one-off” is infuriating but **extremely** time saving.
- If you only have one designer, feed him with coffee; it is the best **force multiplier**.
- If all else fails: someone needs to say “No”.

Thanks for listening.

... Questions?