



Design at **Scale**

Faster, Better UX via Design Systems

Dane Petersen

@thegreatsunra

Karel Barnoski

@karelbarnoski

Lean Day West Portland, OR | September 16, 2013

HOUSEKEEPING

Install a text editor

Sublime Text is great on PC and Mac

Download the zip file

<http://tr.im/4dkrc>

Introduce yourself to the people at your table and make sure at least one of you knows HTML/CSS

If everyone at your table knows

HTML/CSS, please consider sharing your wisdom with another table!



Introductions



Dane Petersen

Lead Interaction Designer

✈ GE Aviation



Karel Barnoski

Lead Interaction Designer

☀ GE Energy

OUR PLAN FOR TODAY

Learn about **design systems**

Moving quickly from **concept to creation**

Sketch an app for your **smart home**

Use a design system to convert that **sketch into code**

TODAY'S SCHEDULE

1:00–1:10 **Settle In & Introductions** (10min)

1:10–1:20 **Our Perspective** (10min)

1:20–1:30 **Sketching** (10min)

1:30–2:30 **Sketch Activity** (60 min)

2:30–2:45 **Break** (15 min)

2:45–3:00 **Design Systems** (15 min)

3:00–3:15 **Coding** (15 min)

3:15–4:15 **Coding Activity** (60 min)

4:15–4:30 **Wrap Up** (15 min)

Bootstrap

Sleek, intuitive, and powerful front-end framework for faster and easier web development.

[Download Bootstrap](#)

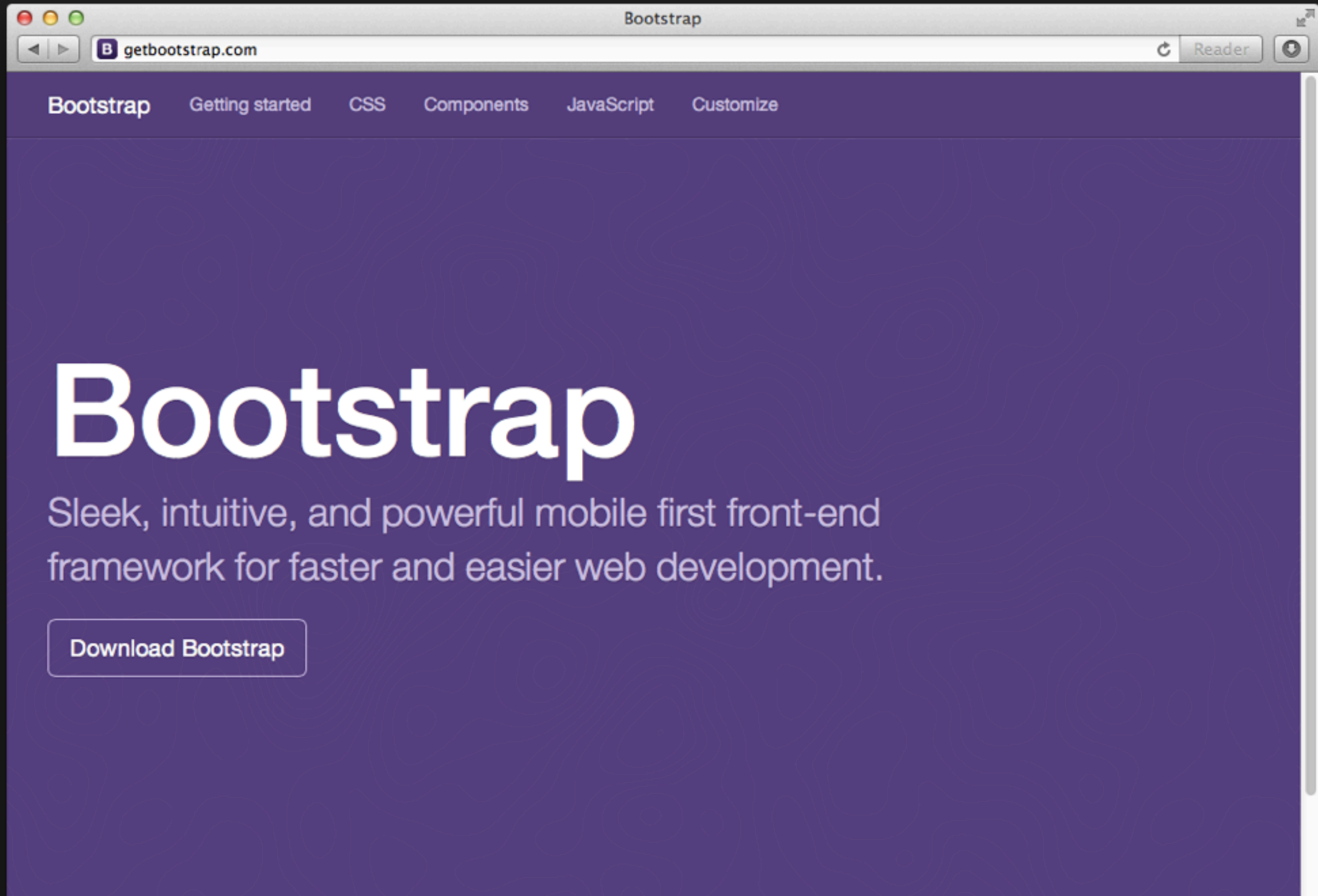
[GitHub project](#) [Examples](#) [Extend](#) [Version 2.3.2](#)

[Star](#) 55,241 [Fork](#) 18,756 [Follow @twbootstrap](#) 77.9K followers [Tweet](#) 0

Introducing Bootstrap.

Need reasons to love Bootstrap? Look no further.



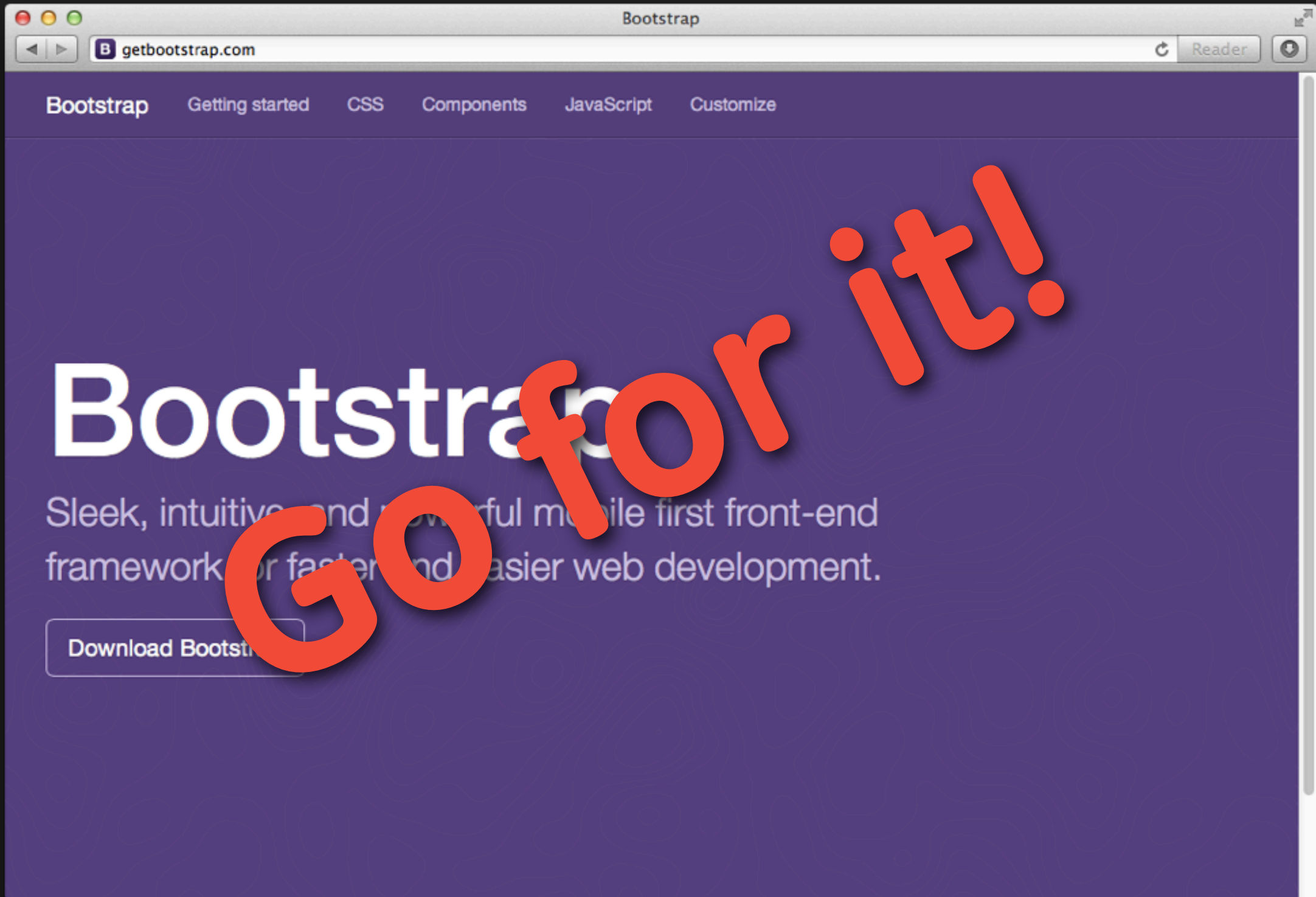


Bootstrap Getting started CSS Components JavaScript Customize

Bootstrap

Sleek, intuitive, and powerful mobile first front-end framework for faster and easier web development.

[Download Bootstrap](#)



Bootstrap Getting started CSS Components JavaScript Customize

Bootstrap

Sleek, intuitive, and powerful mobile first front-end framework for faster and easier web development.

Download Bootstrap

GO for it!



Questions?



Our Perspective



We are GE

GE is huge

121 years old

300,000 employees

14,000 developers

\$147 billion revenue

\$13 billion income



GE is huge



year

000

00

\$147 billion revenue

\$13 billion





PRECAUTION:
DO NOT TOUCH
OR INSTALL
THIS BULB WITH
YOUR HANDS

 HELICAL 26W
120VAC 60Hz 390mA
FLE26HT3/2/SW
FC

USE
RISK OF
LACERATION
OR BURNING
IF BULB IS
REMOVED
OR BROKEN



1:23 PM

ADVANTIUM
120

Profile











6 G02

956-001

627-580 G01

130 100
90 10
90 10

machines



machines



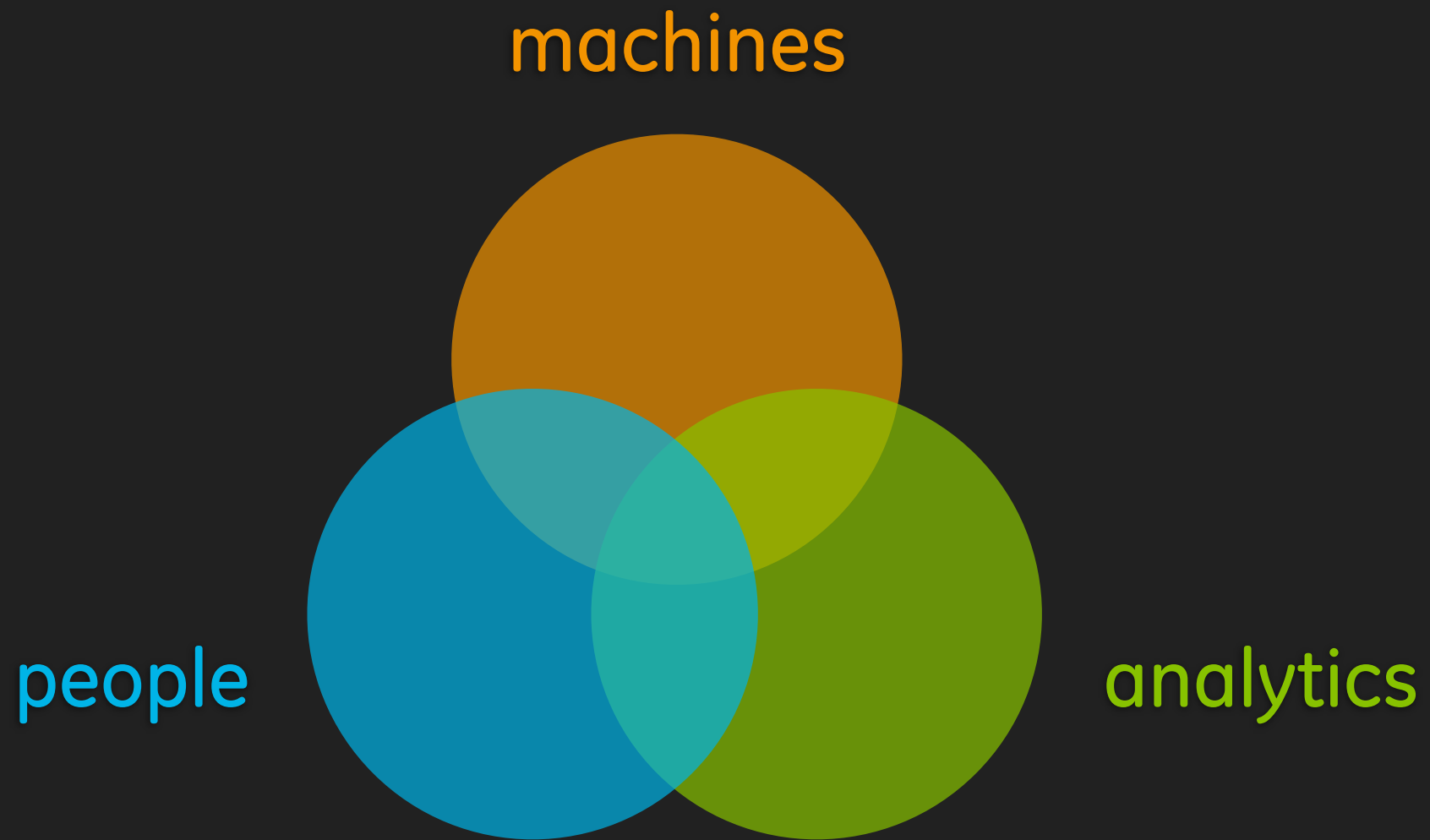
analytics

machines

people

analytics





The Industrial Internet

OUR MISSION

Help people create elegant, powerful
and extensible **experiences for the**
Industrial Internet



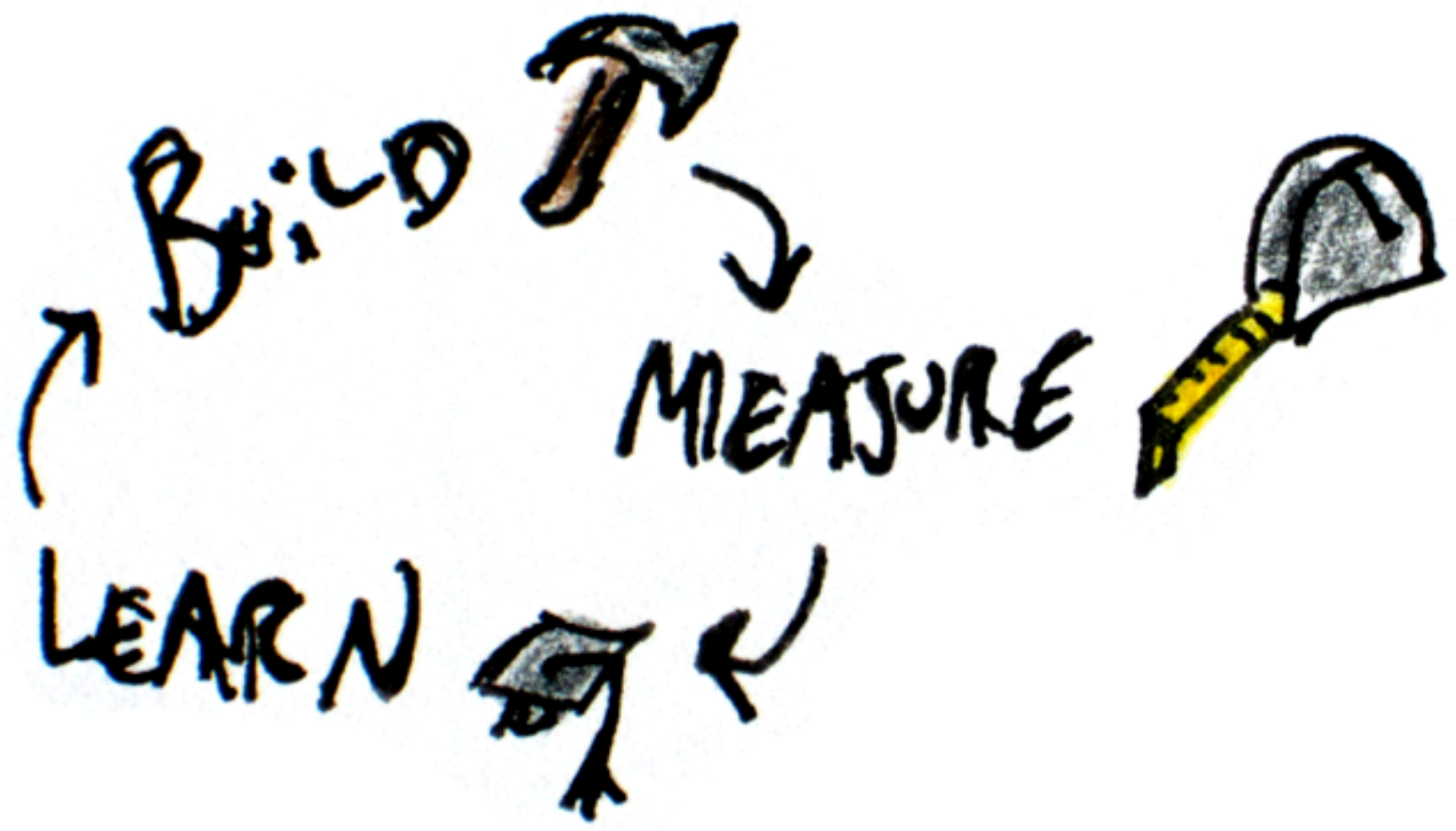
Lean UX + Design Systems + Agile

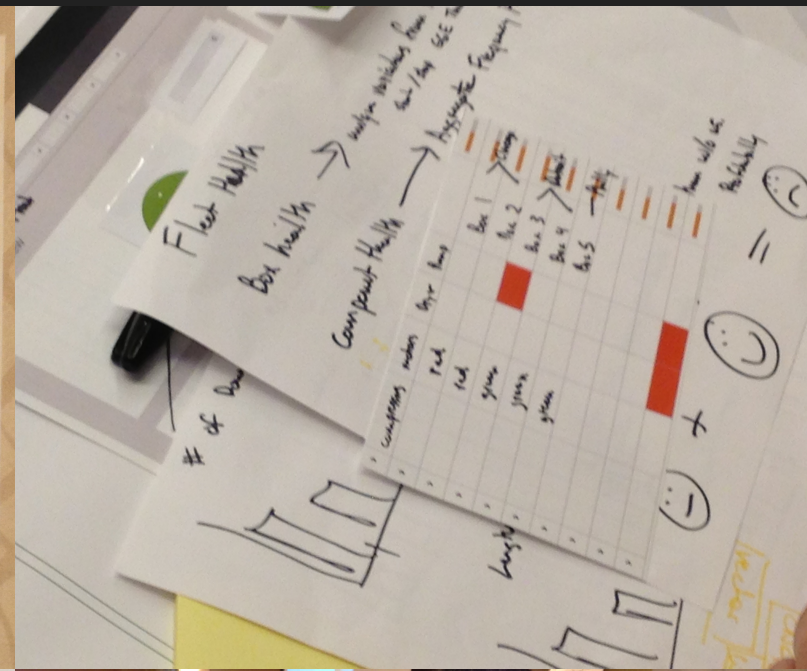
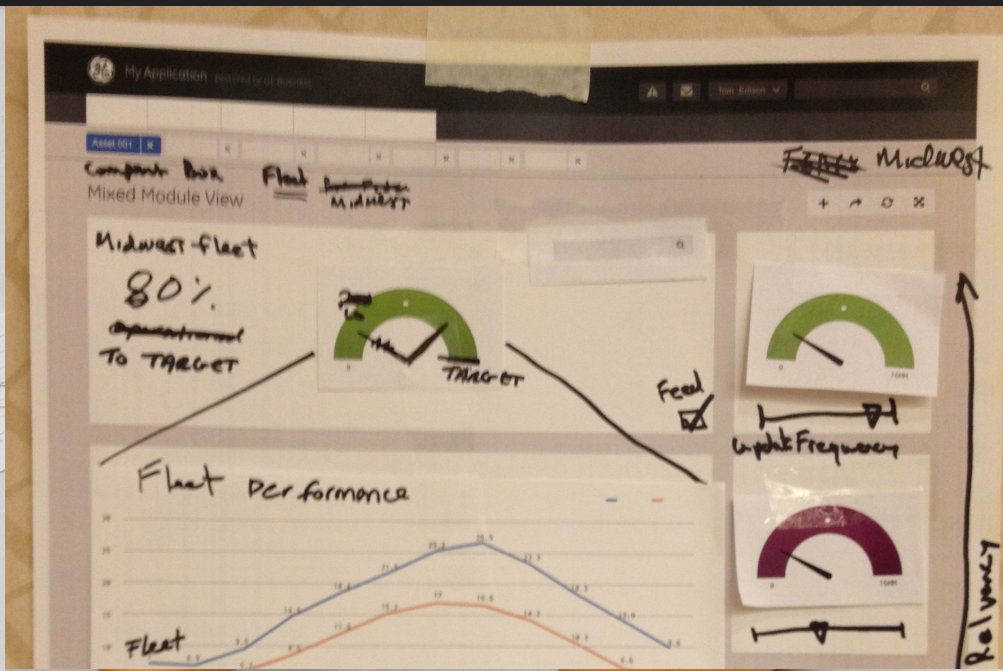
LEAN UX CASE STUDY

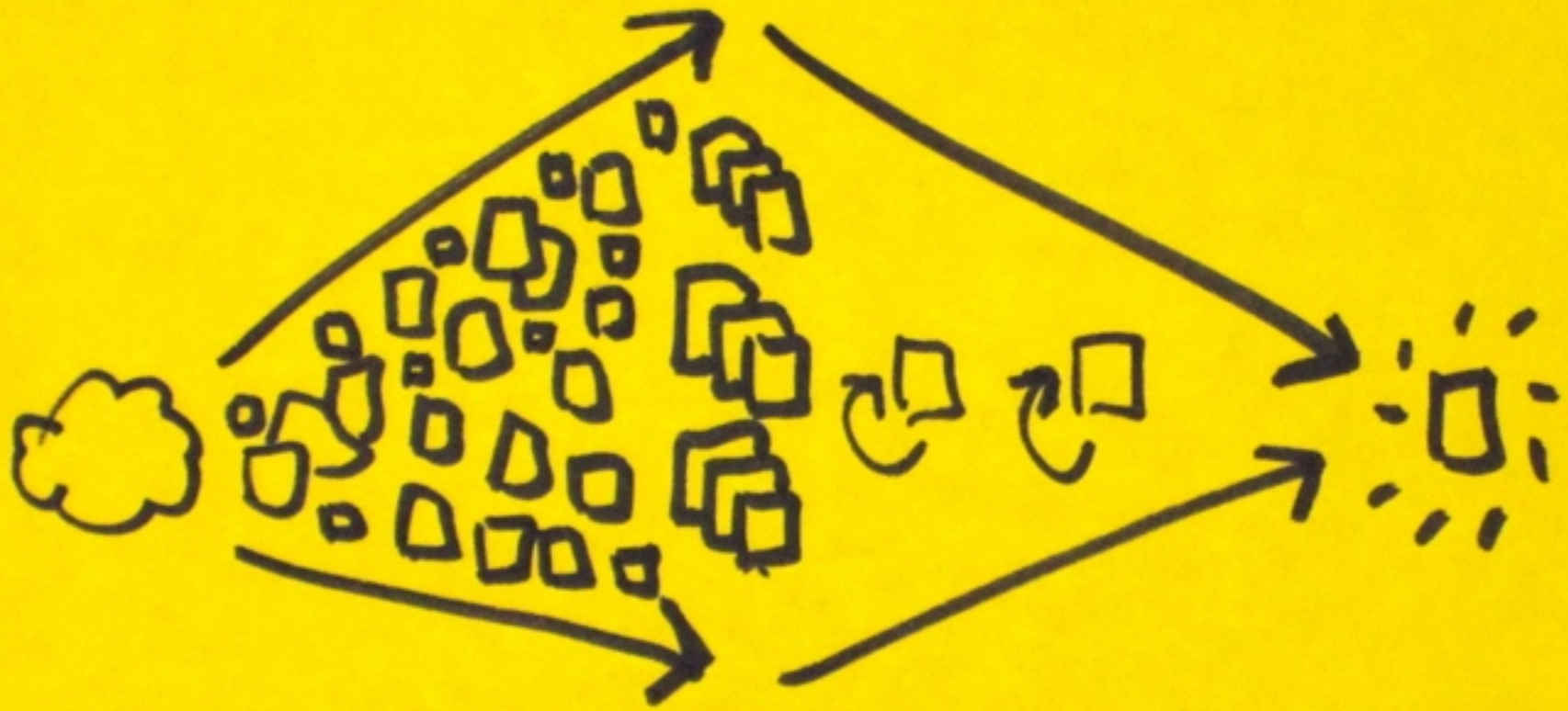
5 intense days of cross-functional collaboration

Worked side-by-side with several energy customers

Sketched and built a prototype to get user feedback







GENERATE CLUSTER ITERATE

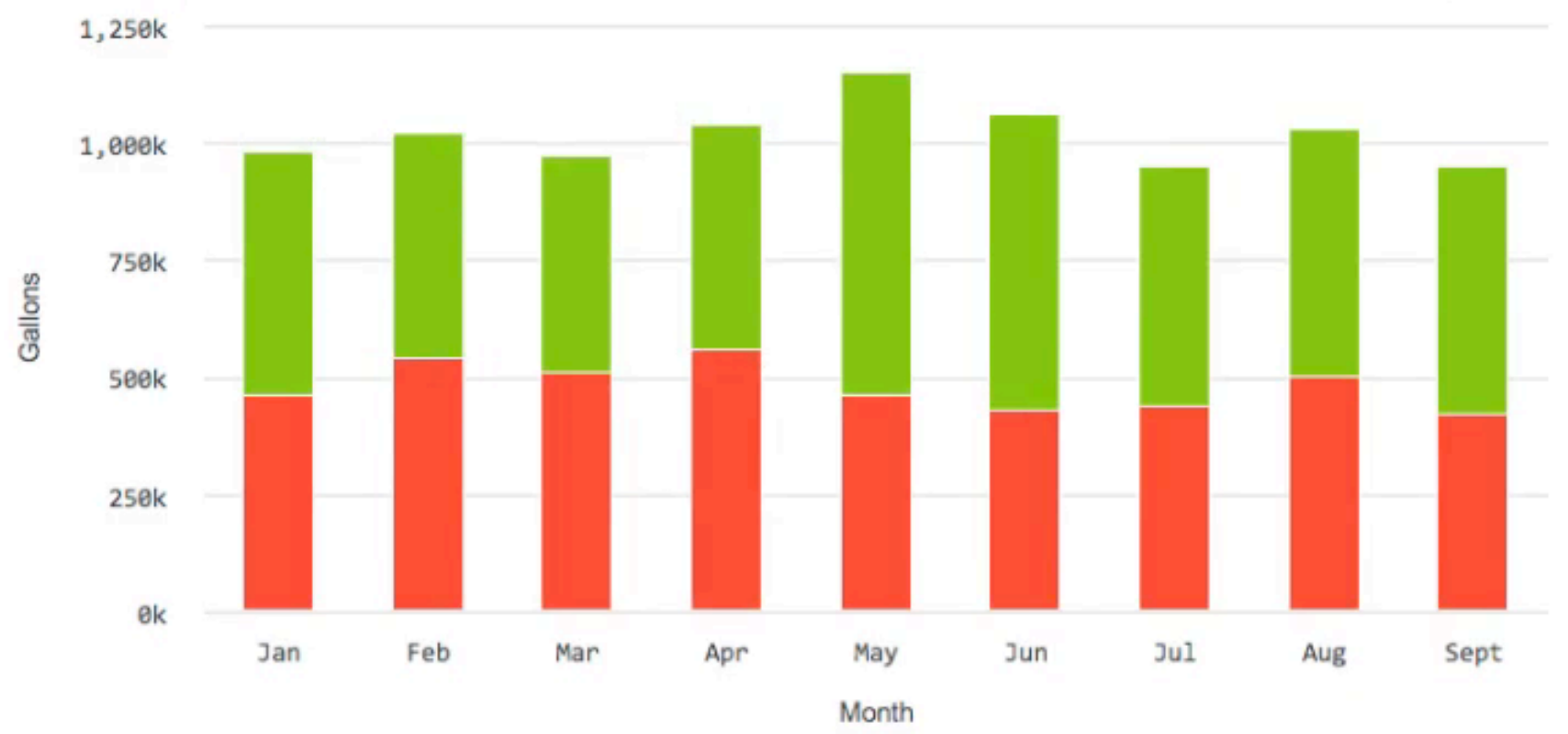


Dashboard View



Financials

Monthly Fuel Usage



Environmental Impact



Repeat Offenders

| Vehicle # | Plate # | %D | \$ |
|-----------|---------|-----|------------|
| 203 | AR3-D4R | 34% | \$1,634.68 |
| 21 | V8D-4RT | 28% | \$1,423.35 |
| 103 | V3K-ER3 | 26% | \$1,398.38 |
| 103 | Q23-D4R | 34% | \$1,234.68 |
| 121 | V8D-4RT | 28% | \$1,123.35 |
| 43 | V3K-ER3 | 26% | \$1,098.38 |

\$8,365.43 lost

Top "Good Guys"

| Vehicle # | Plate # | %NG | \$ |
|-----------|---------|-----|------------|
| 203 | AR3-D4R | 98% | \$8,634.68 |
| 21 | V8D-4RT | 94% | \$8,423.35 |
| 103 | V3K-ER3 | 87% | \$8,398.38 |
| 103 | Q23-D4R | 86% | \$8,234.68 |
| 121 | V8D-4RT | 82% | \$8,123.35 |
| 43 | V3K-ER3 | 81% | \$7,098.38 |

\$49,365.43 saved



Sketching

THE MYTH
OF THE
GENIUS
DESIGNER







full round



sharper
1.25mm





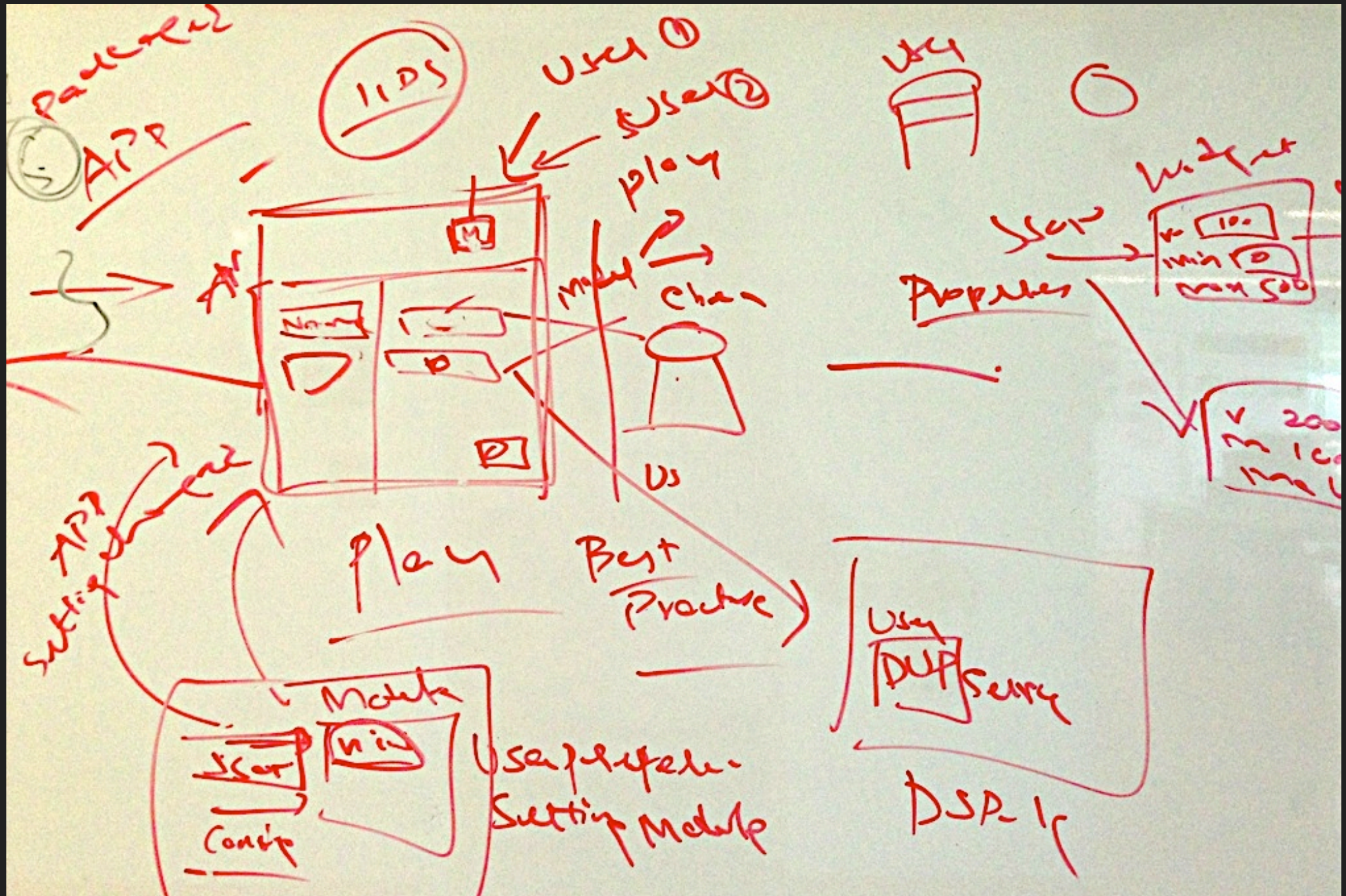


GREAT DESIGN
IS AN ACT
OF CHOICE, NOT
AN ACT OF
GENIUS.

THE FASTEST
PIVOT YOU'LL
EVER MAKE...



GE HAS A SKETCHING CULTURE



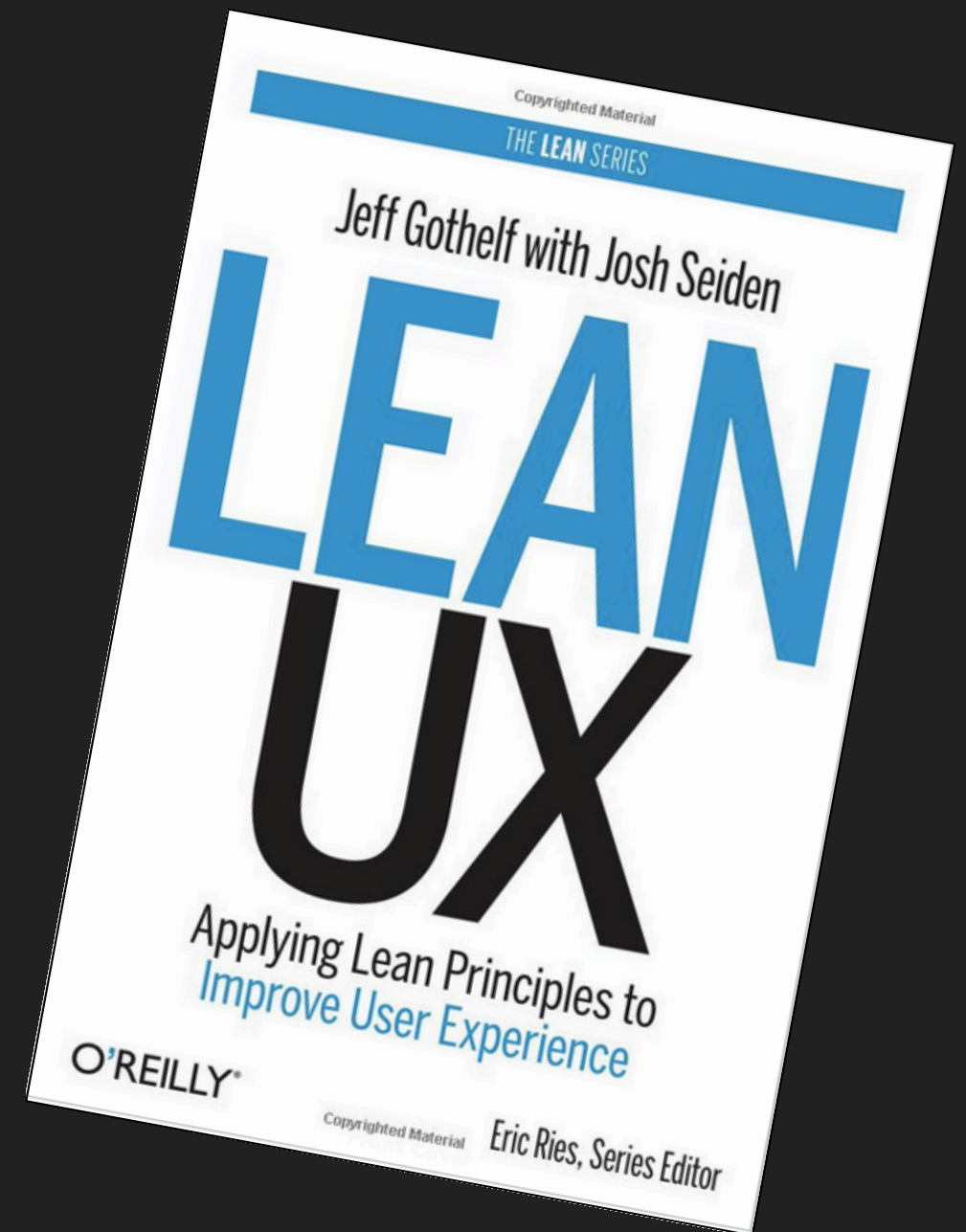
FOUR LEAN UX PRINCIPLES

Externalizing Your Work

Making Over Analysis

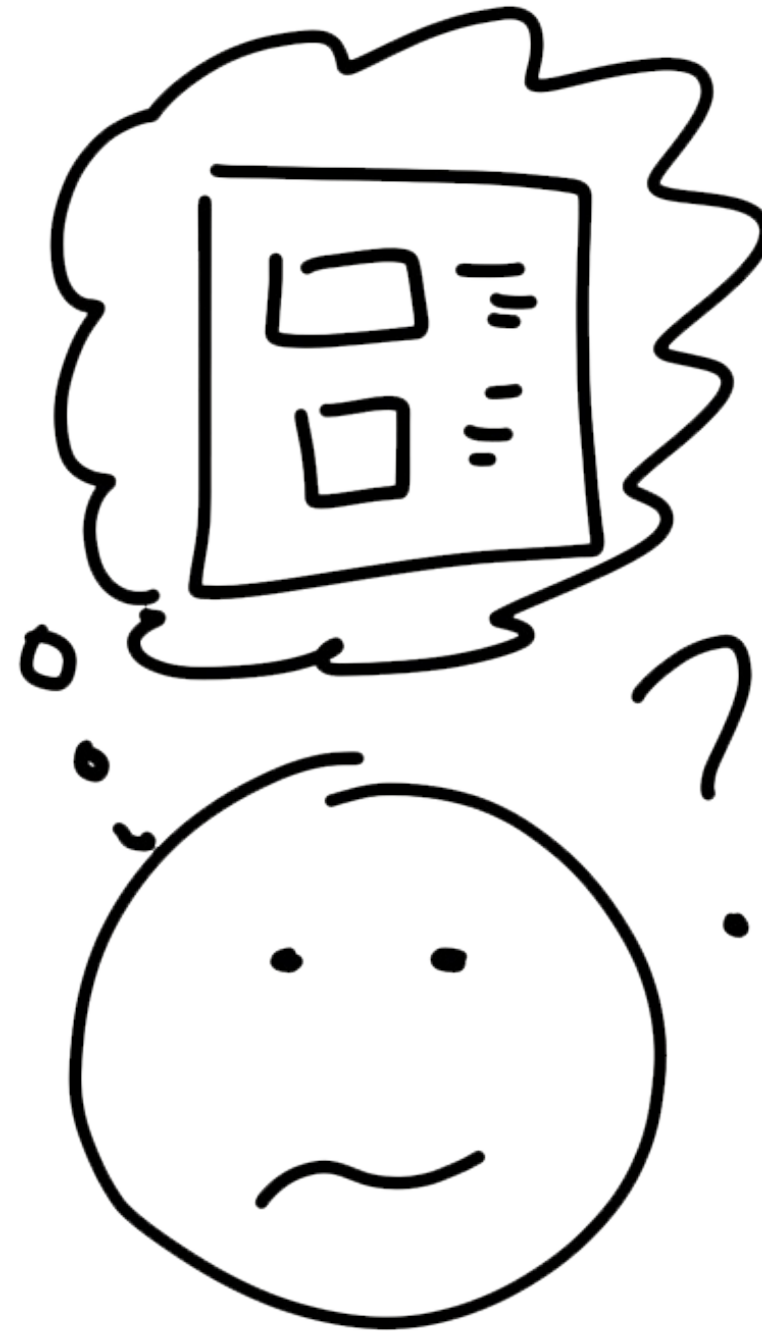
Shared Understanding

Permission to Fail



SKETCHING IS EXTERNALIZING YOUR WORK

Sketching is all about getting ideas **out of your head**.

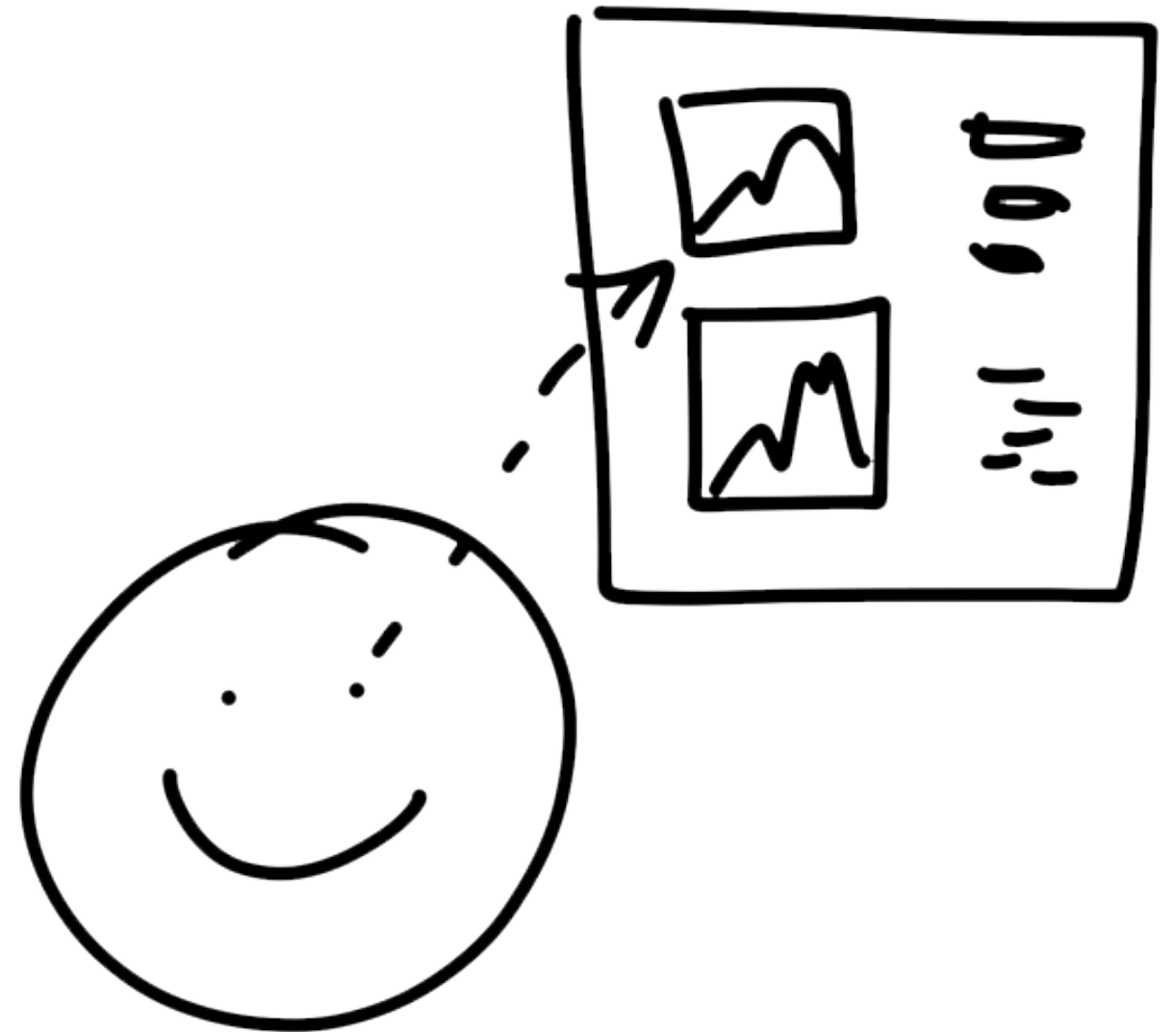


SKETCHING IS EXTERNALIZING YOUR WORK

Sketching is all about getting ideas **out of your head**.

Thinking only exercises one part of your brain. Looking engages more of your brain.

Getting sketches in front of coworkers and users engages their brains too.

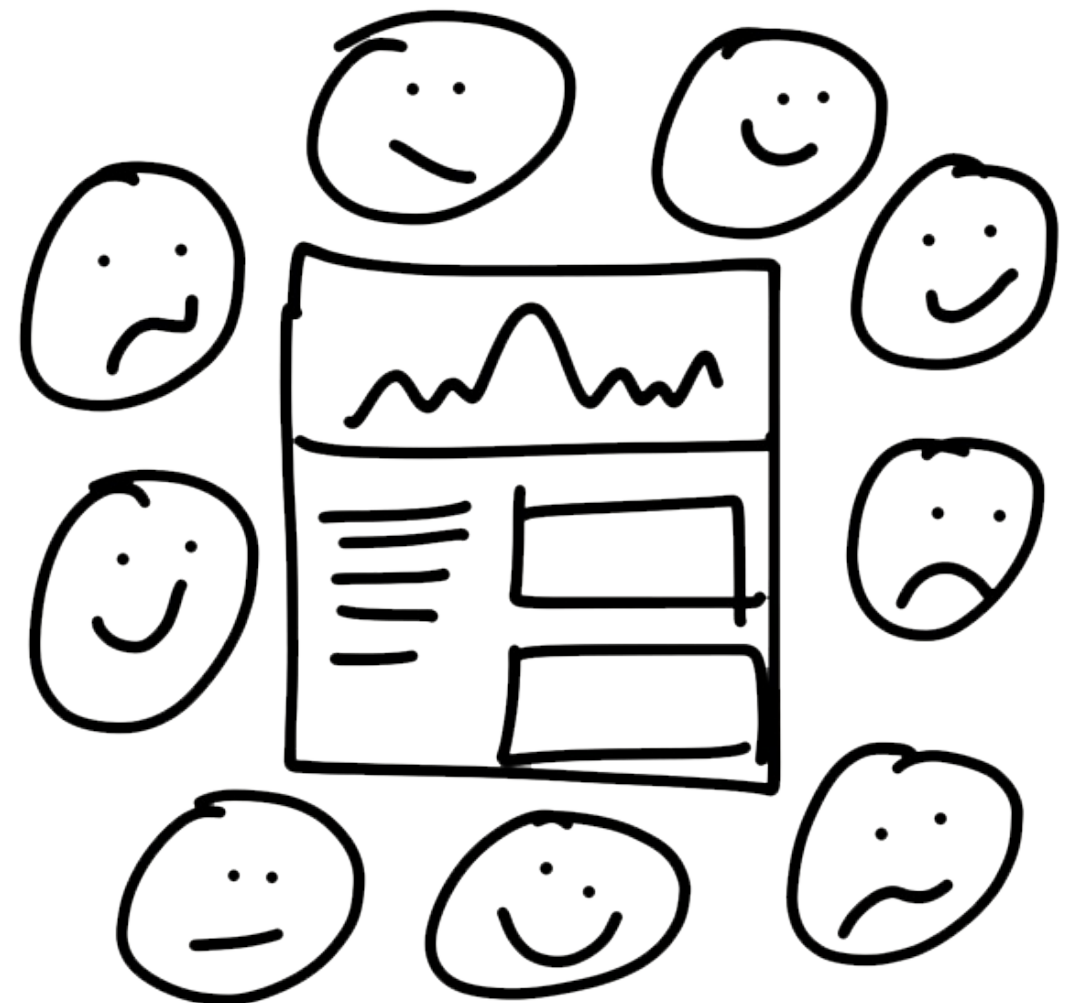


SKETCHING IS MAKING OVER ANALYSIS

Make to think!

Over-analyzing a problem can lead to fear that you're missing something, which leads to analysis paralysis.

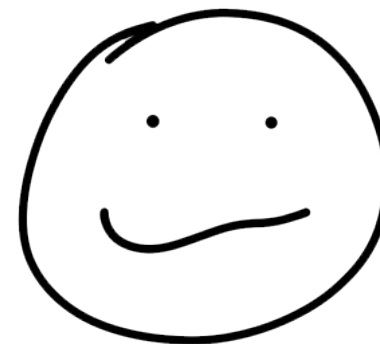
Making rough things helps you get a direct response from your target users.



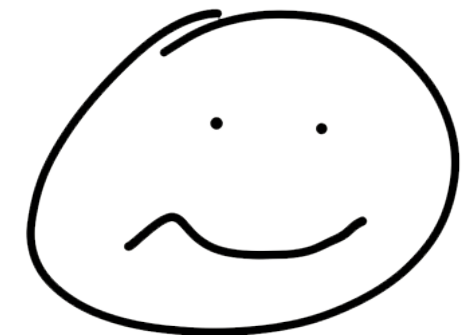
SKETCHING HELPS SHARED UNDERSTANDING

Sketching **minimizes competition** between different ideas.

MY
IDEA!



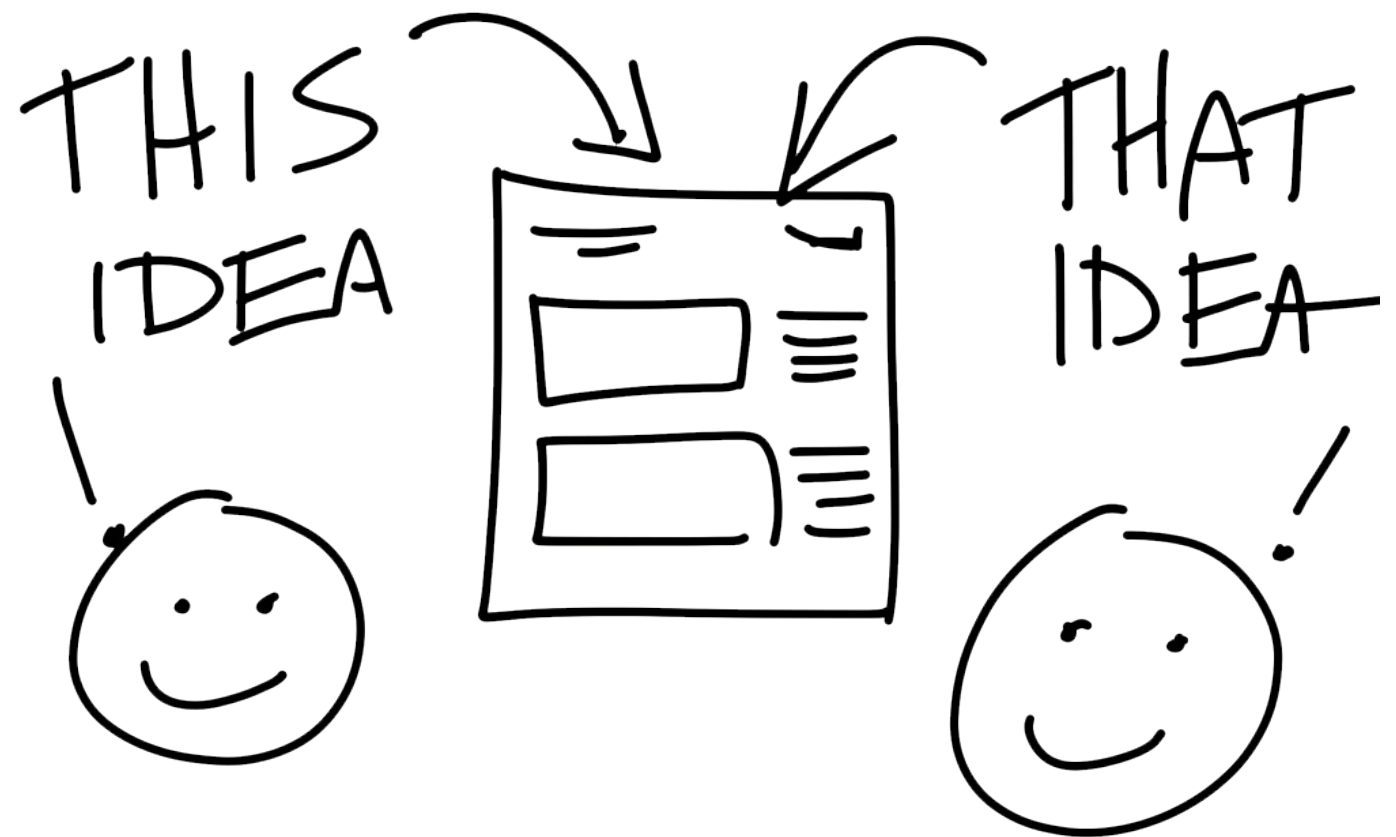
MY
IDEA!



SKETCHING HELPS SHARED UNDERSTANDING

Sketching **minimizes competition** between different ideas.

It turns the idea into a third party that everyone is free to critique.

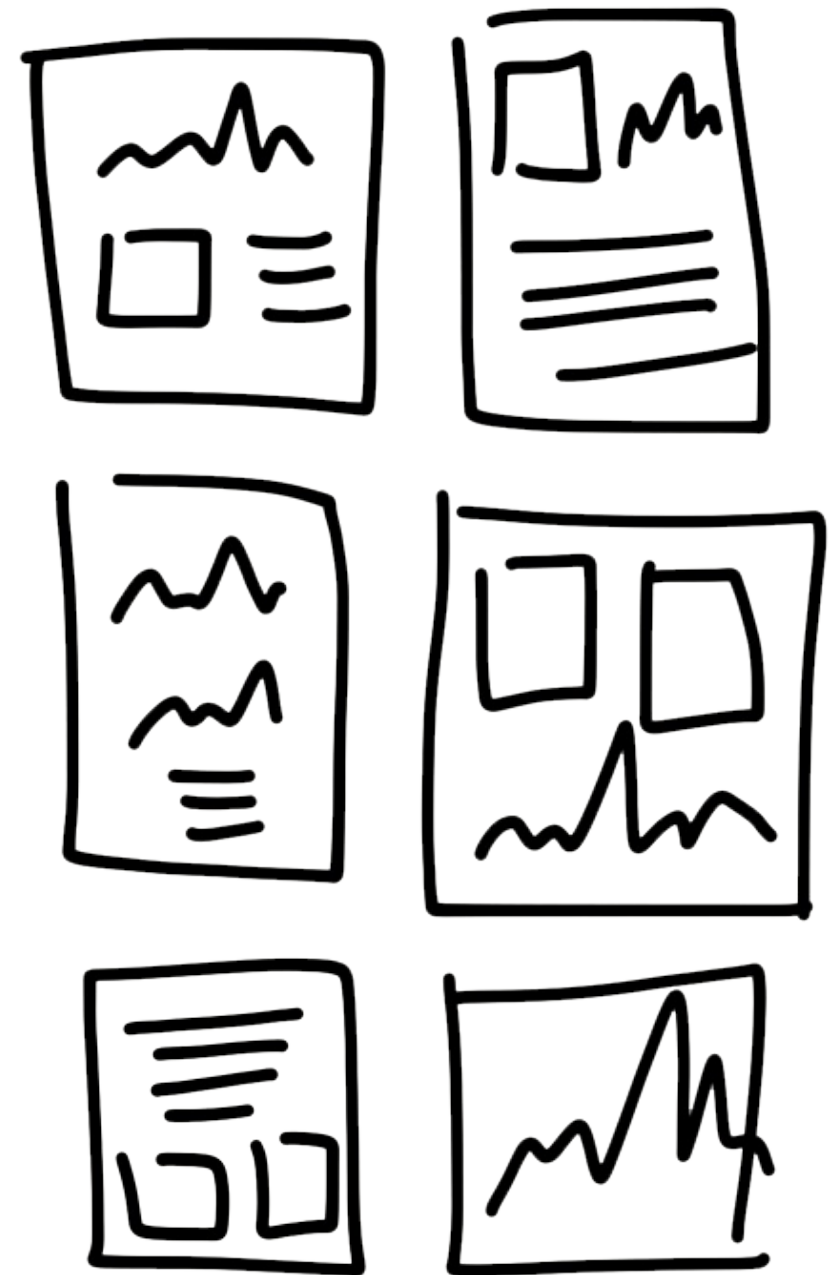


SKETCHING IS ALL ABOUT RAPID FAILURE

Your first solution probably won't be your best one.

Use paper to make your mistakes **cheaply and quickly**.

And then make some more!



SKETCHING IS NOT DRAWING

Anybody can sketch. This isn't about art!

Ugly is fine! And expected!

Speed is more appropriate than perfection.

And remember...

SKETCHING IS NOT DRAWING

Anybody can sketch. This isn't about art!

Ugly is fine! And expected!

Speed is more appropriate than perfection.

And remember...

IT UGLY!



Activity #1: Sketching

YOUR TOOLS, YOUR FRIENDS

Blank paper

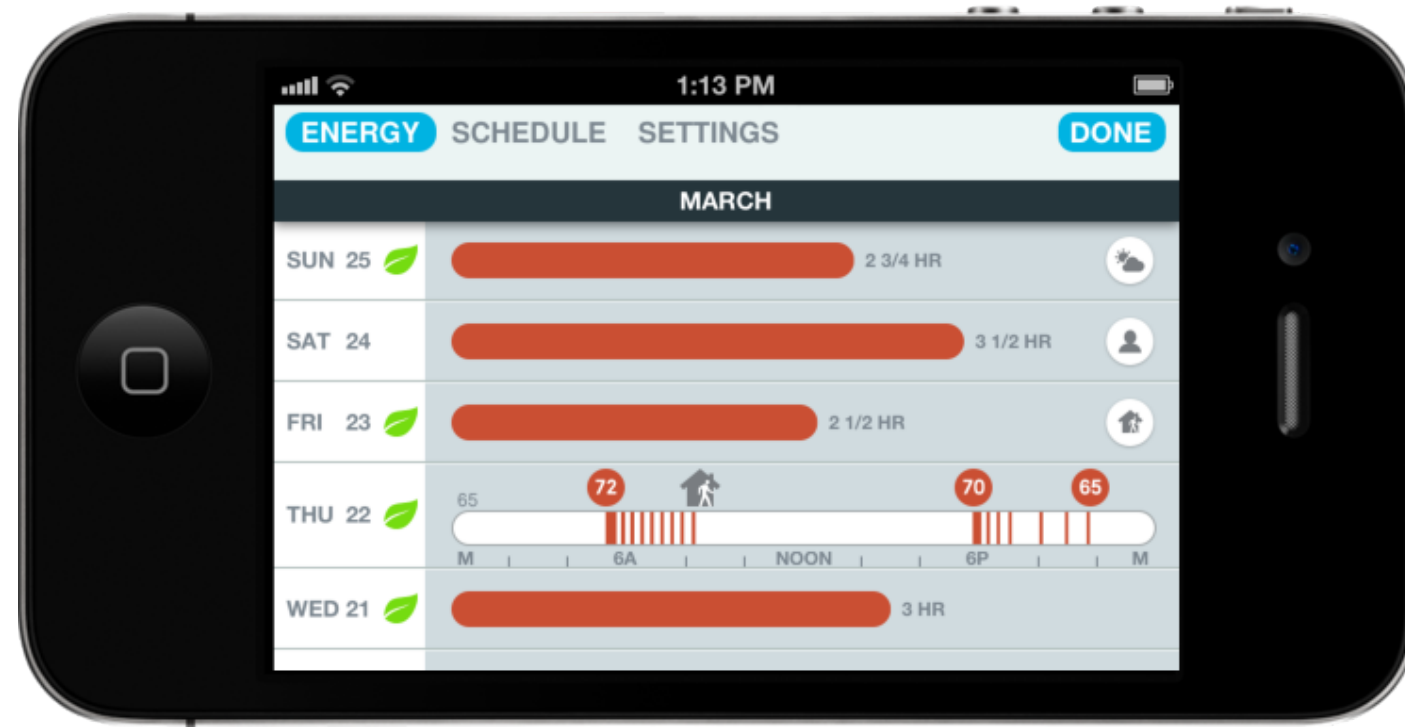
Sticky notes

Sharpies!

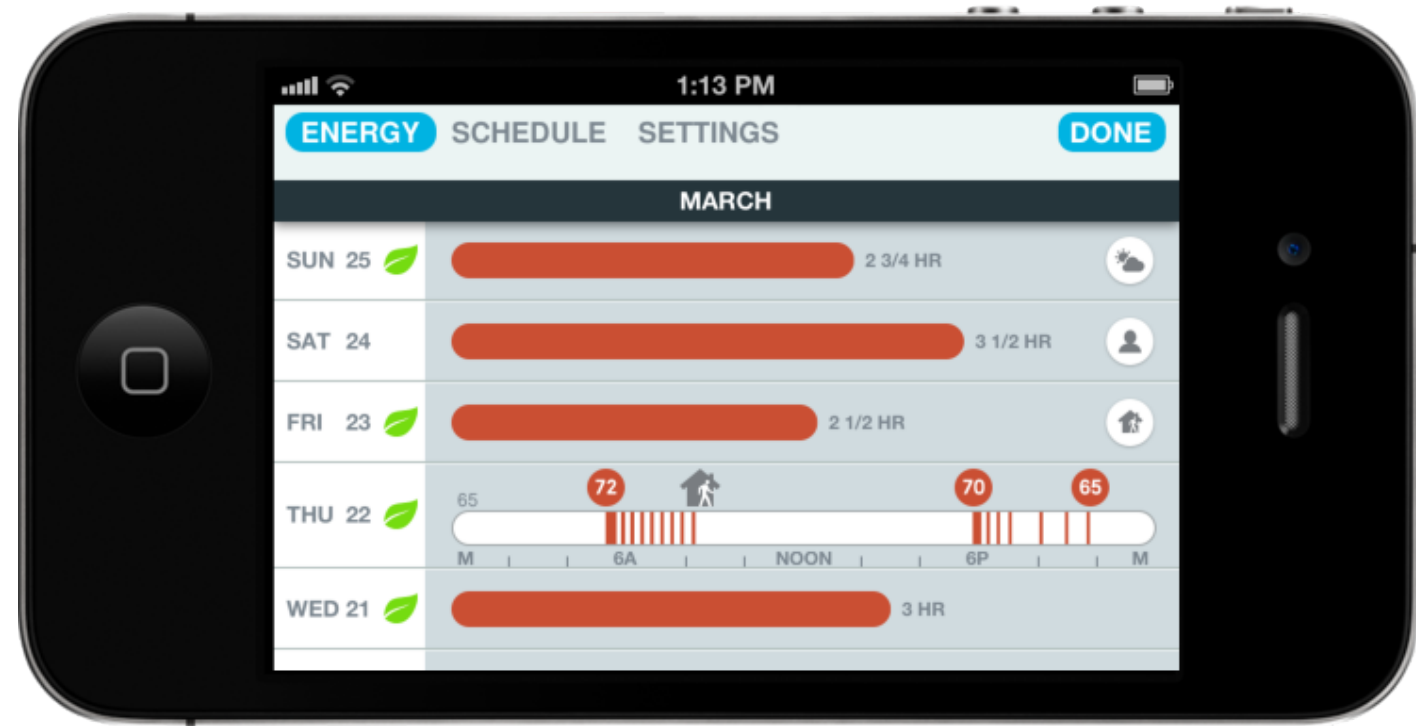
ACTIVITY #1: SKETCHING

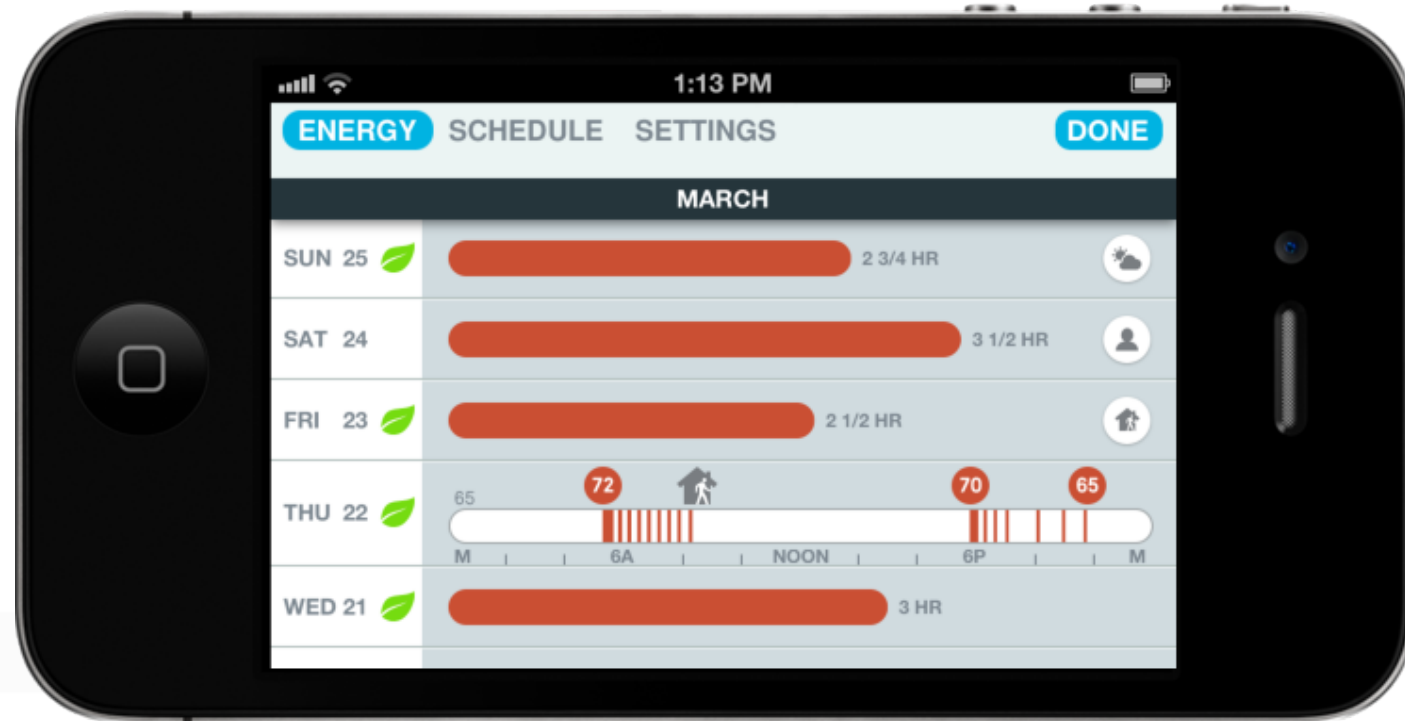
Theme: **The Smart Home Manager**

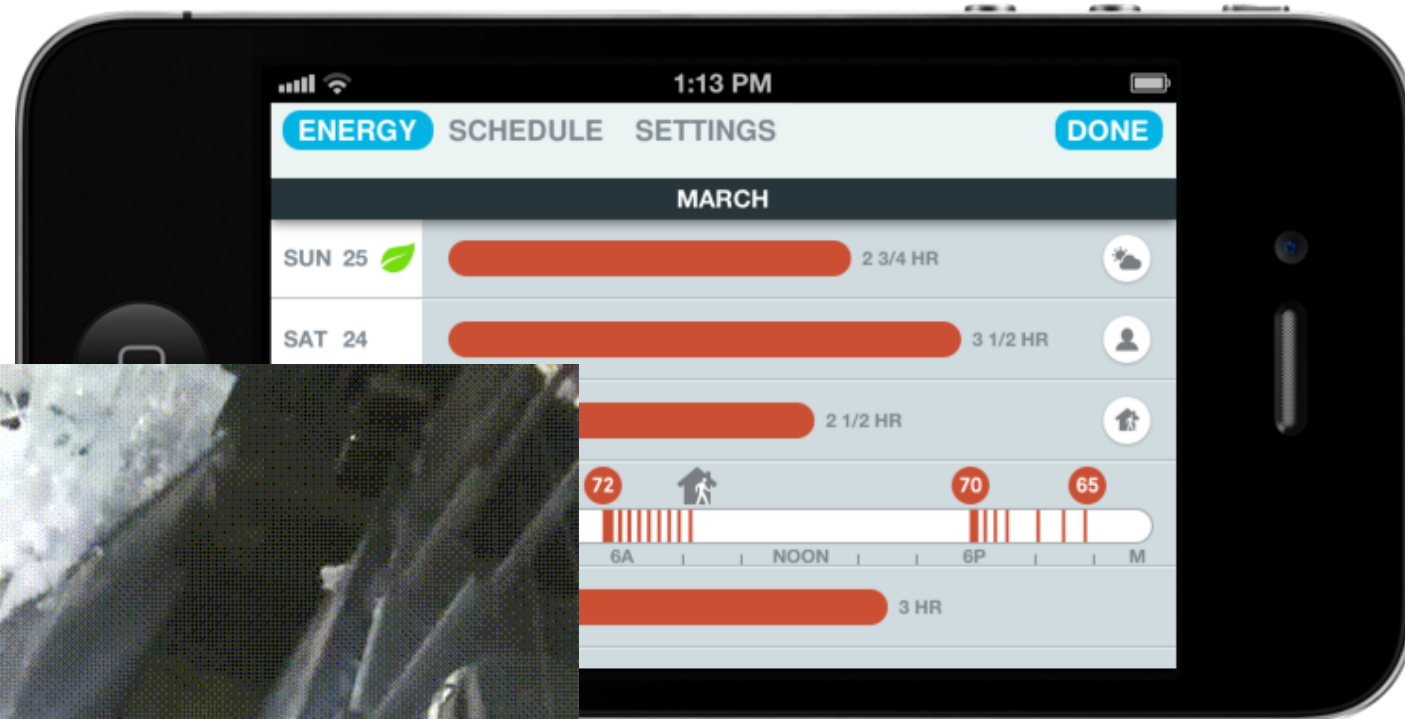


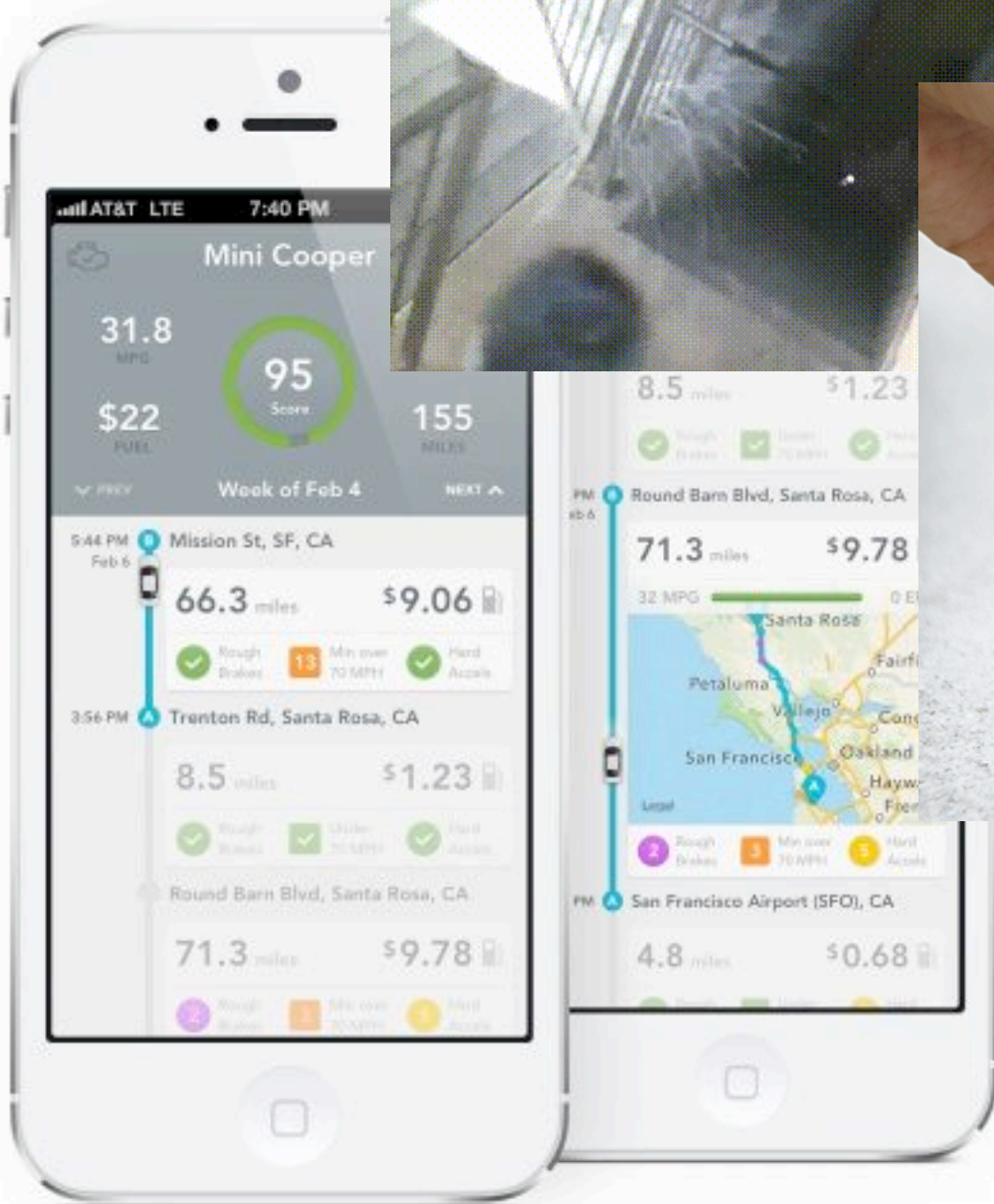
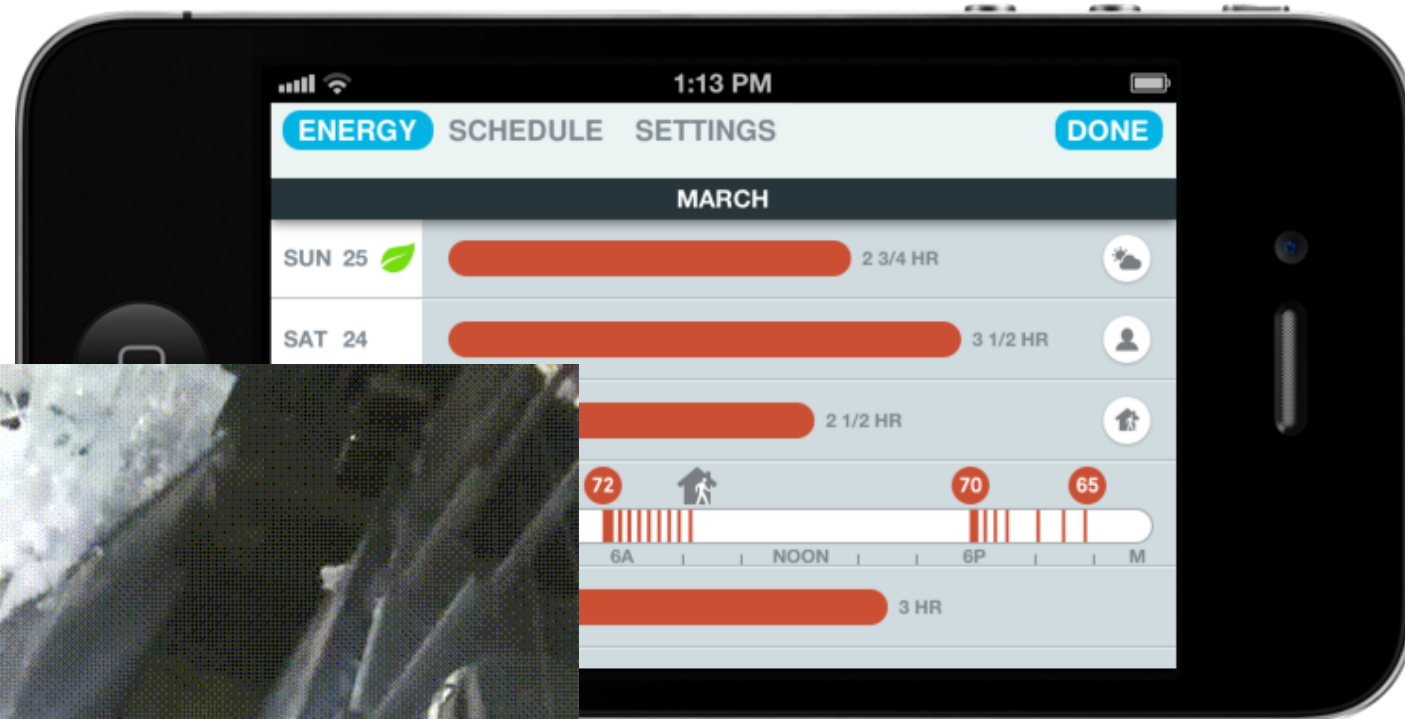












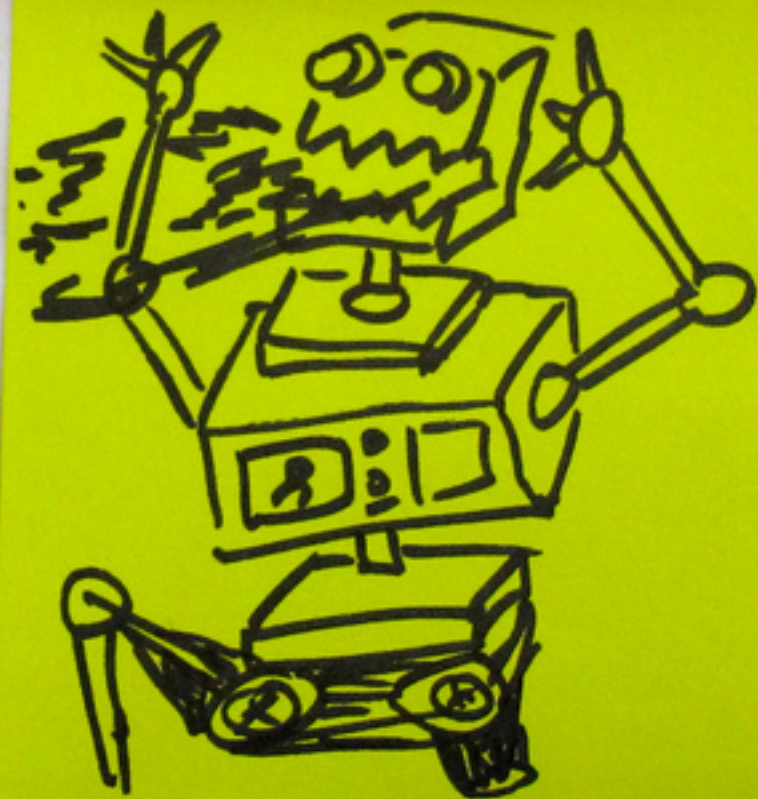
ACTIVITY #1: SKETCHING

Theme: **The Smart Home Manager**

Think of all the **connected things** in your home

Imagine a system that lets you view and manage all of those things

FIRE-BREATHING
ROBOT, W
TOUCH S (REEN.
ITH ...



ACTIVITY #1: SKETCHING

Sketch as an individual (15 min)

Share your sketches with your team (1 min per person)

Establish a design direction as a team (5 min)

As a team, iterate on your shared design (15 min)

Present your design to the other teams (1 min per group)

ACTIVITY #1: SKETCHING

Feeling stuck?

Start with words

One idea per sticky

Quantity over quality

Cluster and iterate

ACTIVITY #1: SKETCHING

Feeling stuck?

Who uses it?

What does it do?

Where do they use it?

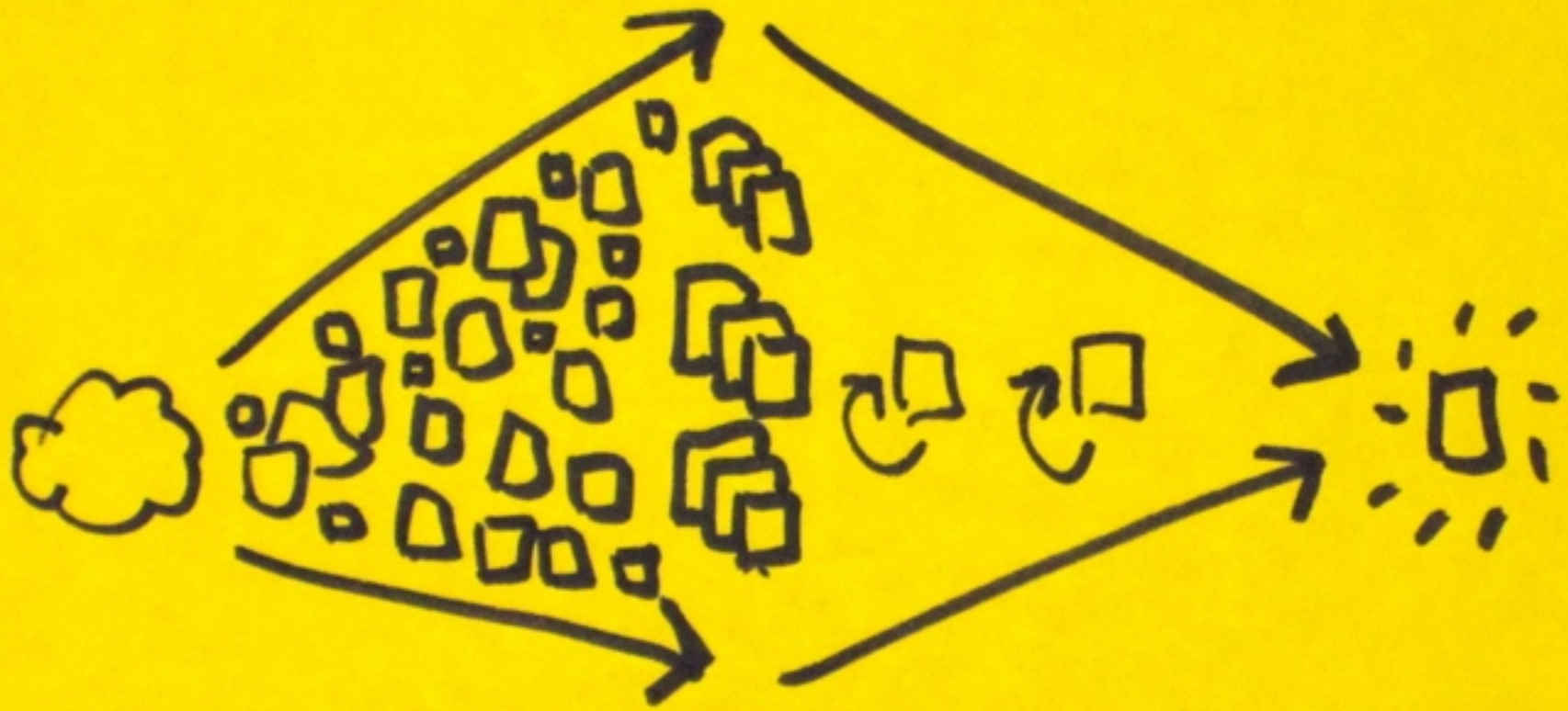
When do they use it?

How do they use it?

Why would they use it?



Nice work!



GENERATE CLUSTER ITERATE



Break
15 minutes

TODAY'S SCHEDULE

1:00–1:10 Settle In & Introductions (10min)

1:10–1:20 Our Perspective (10min)

1:20–1:30 Sketching (10min)

1:30–2:30 Sketch Activity (60 min)

2:30–2:45 **Break** (15 min)

2:45–3:00 **Design Systems** (15 min)

3:00–3:15 **Coding** (15 min)

3:15–4:15 **Coding Activity** (60 min)

4:15–4:30 **Wrap Up** (15 min)



Design Systems

A design system is a collection of **visual and interaction elements** that embodies the brand

The system is often **expressed across many channels** including web, mobile, desktop, and service so that **a consistent user experience is produced**

COMPONENTS OF A DESIGN SYSTEM



Logo. A visual metaphor and often the most recognizable part of a design system.



Color. A consistent color palette supports the system by communicating brand tone.



Imagery. Enhances core qualities of the brand and provides recognizable anchors.



Structure. Organizes content and interface for software and hardware design.



Messaging. Expresses intangible emotional values and purpose or instruction.



Typography. A recognizable brand element that reinforces a unified experience.

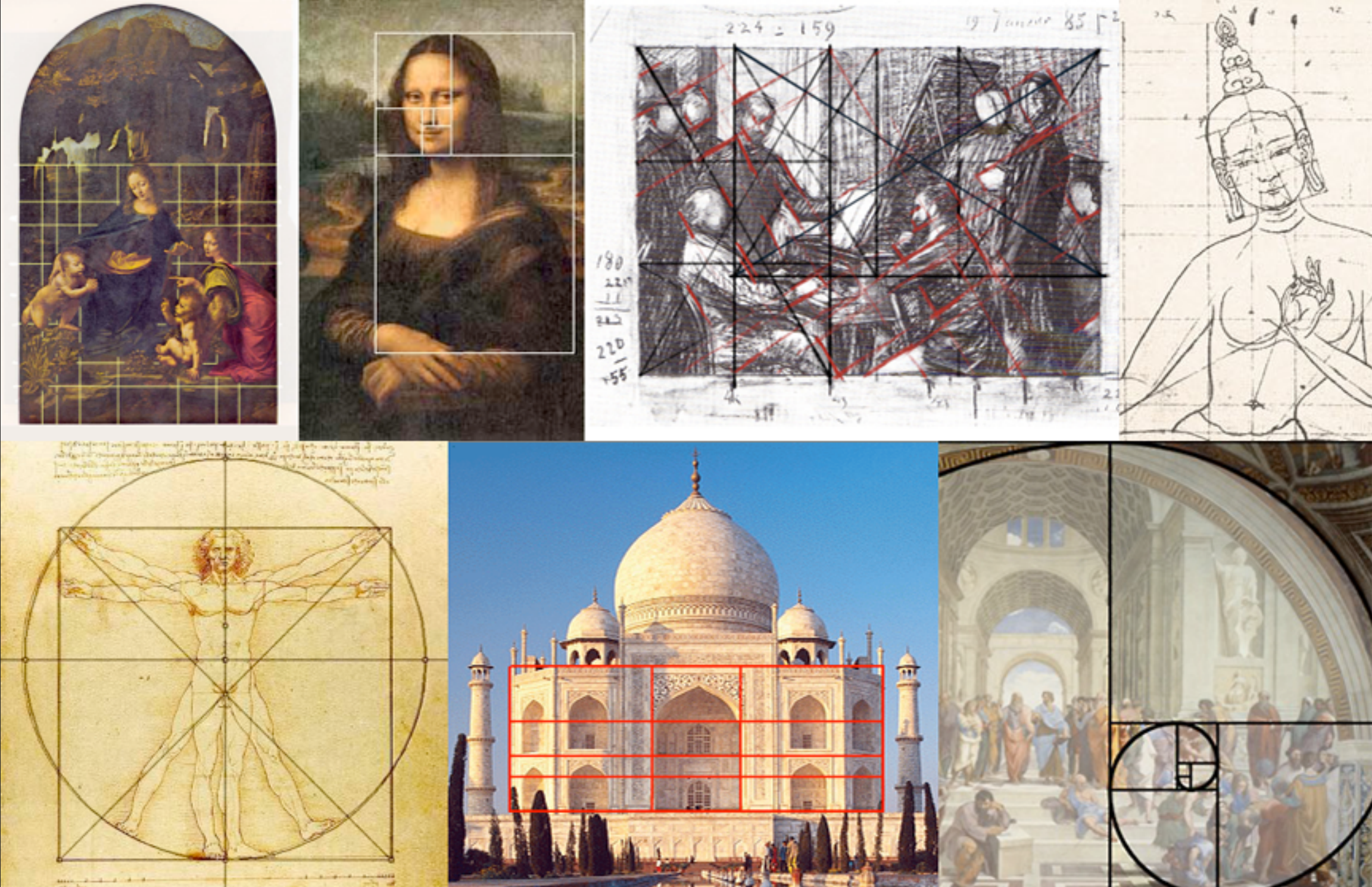


Interaction. Patterns for interacting with UI elements creating a quality experience.

PHYSICAL WORLD



DESIGN SYSTEMS ARE NOTHING NEW



HARDWARE & SOFTWARE





GE Design Systems

SHARING DESIGN SYSTEMS WITH OTHERS

GE : Software Design Hub : Home

Search Google or enter an address

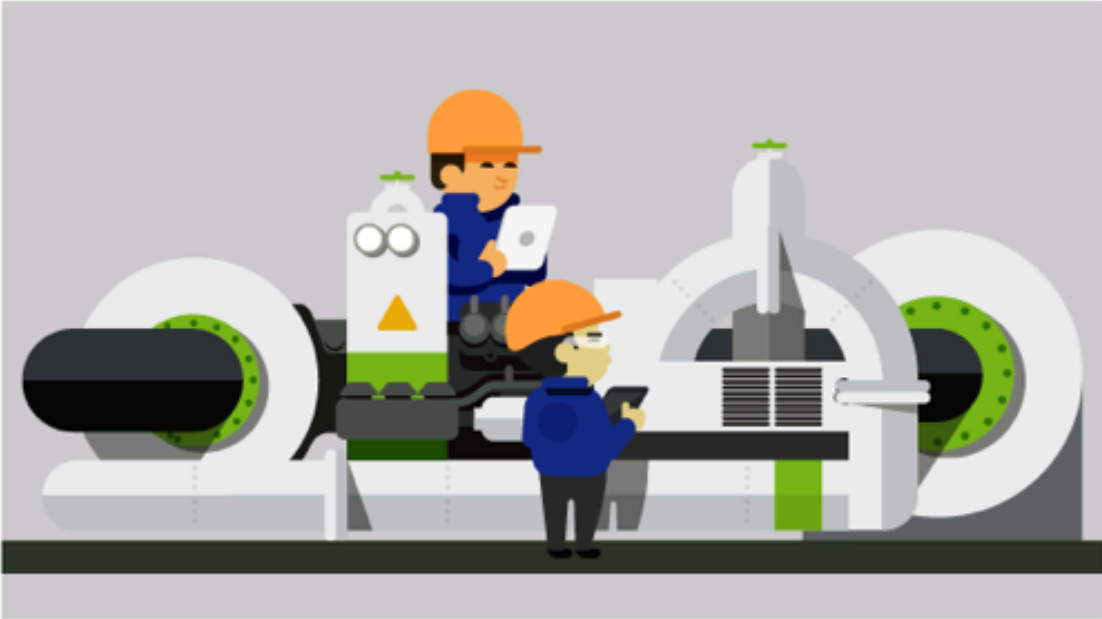
Software Design Hub

Welcome to the home of GE's design system library. This is an ever-changing repository of application design guidelines for all of the GE businesses.

Software Design Hub

Design Extensions: Industrial Marketing Healthcare

Community Contact Us



Industrial Internet Design System

The Industrial Internet Design System (IIDS) is an extensible set of design and development assets to support the easy creation of GE's Industrial Internet software applications.

[Learn more about the IIDS.](#)

[Download IIDS v1.0.0](#)

- [Docs: Basic UI Elements](#)
- [Docs: Components](#)
- [Example Applications](#)
- [Design Guidelines](#)

MARKETING DESIGN SYSTEM

GE's \$500 Million Commitment to Software Excellence



Why the Best
Software
Companies
Aren't Software
Companies



[Find out Who We Are →](#)

Looking to
Modernize
Your
Back-End?

[Learn about our Services →](#)

DSP:
Introducing the
GE Cloud



[Learn about our Platforms →](#)

Where should we
prioritize our
innovation efforts?

- Aviation
- Healthcare
- Transportation

[Vote →](#)



Video Title Lorem
Ipsum Dolor Sit Amet

[Play Video →](#)

Follow Us on Colab

Over 50 canvases of expert
information. Check out what we're
up to and join the conversation.

[Visit our Canvas →](#)



HEALTHCARE DESIGN SYSTEM

My Patients

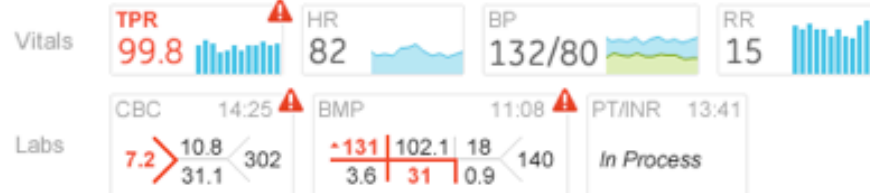
My Patients Group Patients Alerts & Notifs Tasks More Edit List Actions

Patient The last 24 hours Problem list Tasks

1 Hope, Herman

Room: 1125

Sex M
Age 49
Spouse Rose Jones
Current Nurse Sue Ellen Anderson
Last Nurse Javier Alvarez



Img 9:25 9:25 13:40

Meds 50mg LoremIpsucillum x12, 150mg ConsecteturAdipiscing x4
125mg Vestibulum x2

Vivamus venenatis nisi eget morbi erat felis
Lorem ipsum dolor sit amet
Consectetur adipiscing elit
Nulla vitae risus

Labs may indicate renal failure

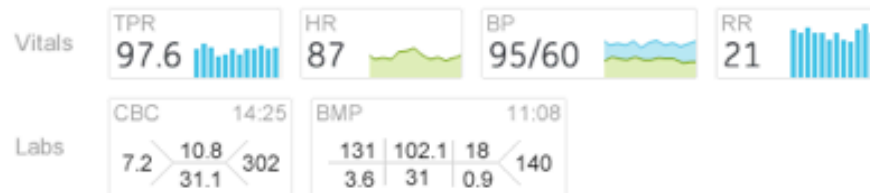
Laoreet non adipiscing ut

- Tincidunt ut turpis
- In vitae nisi nec quam posuere fringilla
- Praesent sollicitudin ante ac quam
- Cras nec mauris
- Donec in velit

2 Jones, William

Room: 1204

Sex M
Age 33
Spouse Nancy Jones
Current Nurse Sue Ellen Anderson
Last Nurse Javier Alvarez



Img 9:25 9:25 13:40

Meds 50mg LoremIpsucillum x12

Lorem ipsum dolor sit amet
Consectetur adipiscing elit
Nulla vitae risus
Vivamus venenatis nisi eget tellus

Laoreet non adipiscing ut

- Tincidunt ut turpis
- In vitae nisi nec quam posuere fringilla
- Praesent sollicitudin ante ac quam
- Cras nec mauris
- Donec in velit

Lorem ipsum dolor sit amet

3 Bodine, Rhonda

Room: 1155

Sex F
Age 68
Spouse Nancy Jones
Current Nurse Sue Ellen Anderson
Last Nurse Javier Alvarez



Img 9:25 9:25 13:40

Meds 50mg LoremIpsucillum x12

Acute heart failure
Pneumonia

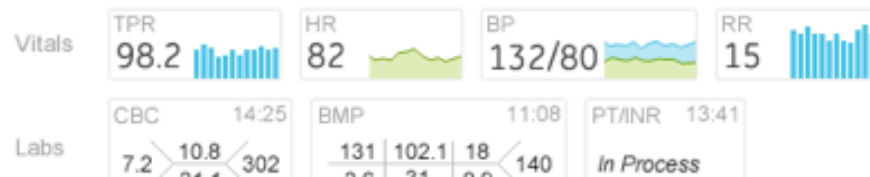
Laoreet non adipiscing ut

- Laoreet non adipiscing ut

4 Small, James

Room: 1135

Sex M

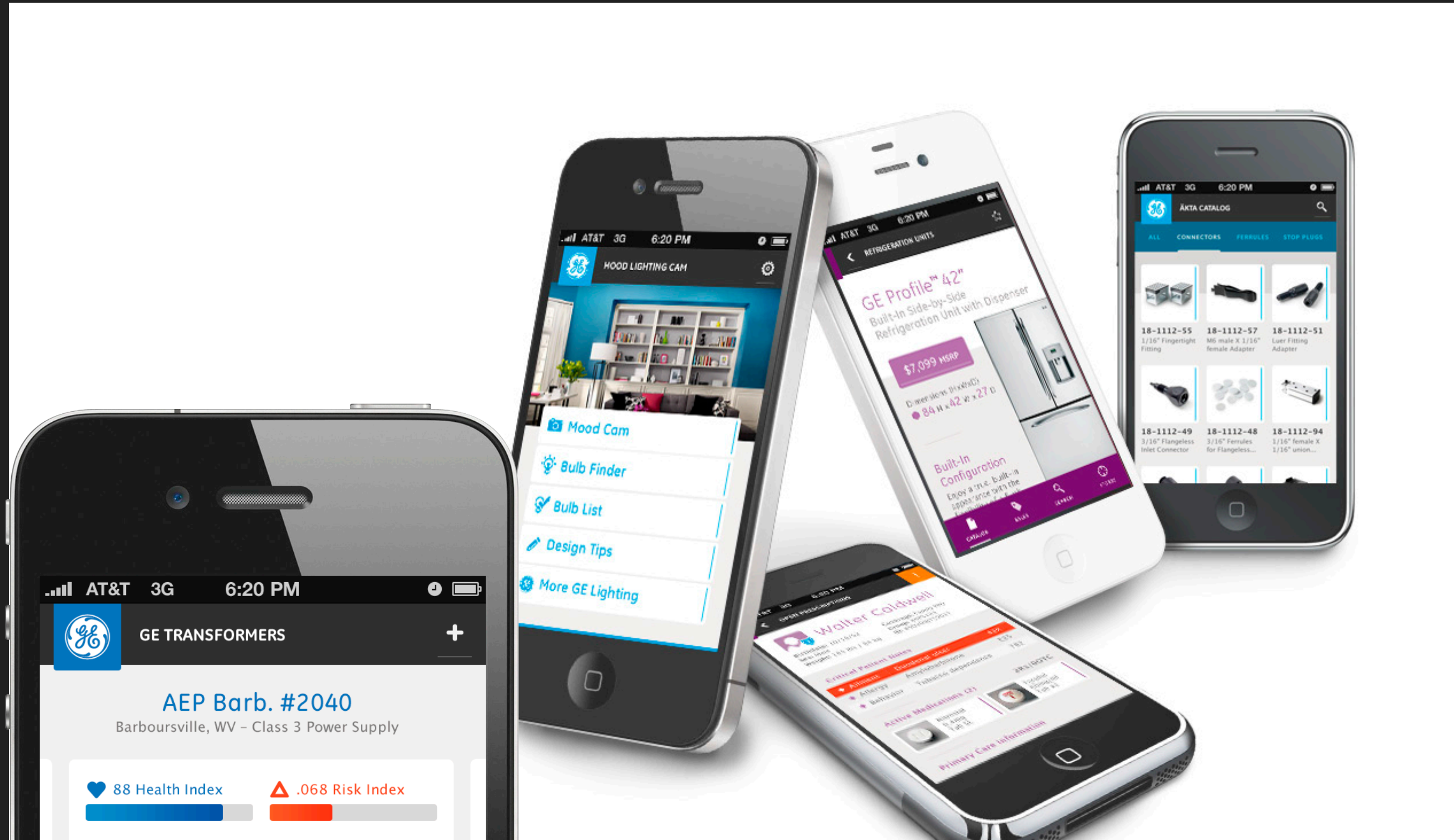


Lorem ipsum dolor sit amet
Consectetur adipiscing elit
Nulla vitae risus
Vivamus venenatis nisi eget tellus

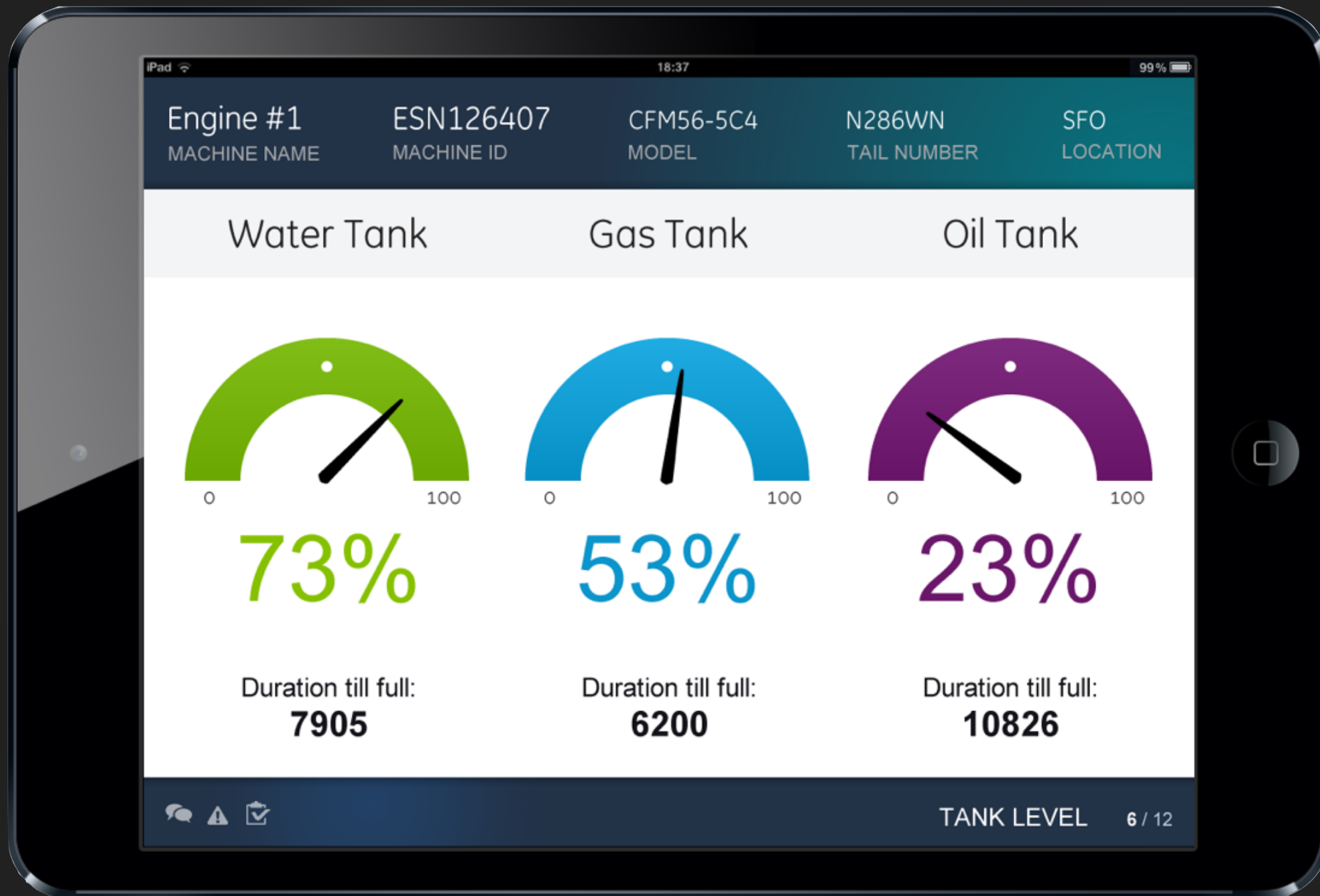
Laoreet non adipiscing ut

- Tincidunt ut turpis
- In vitae nisi nec quam posuere fringilla
- Praesent sollicitudin ante ac quam

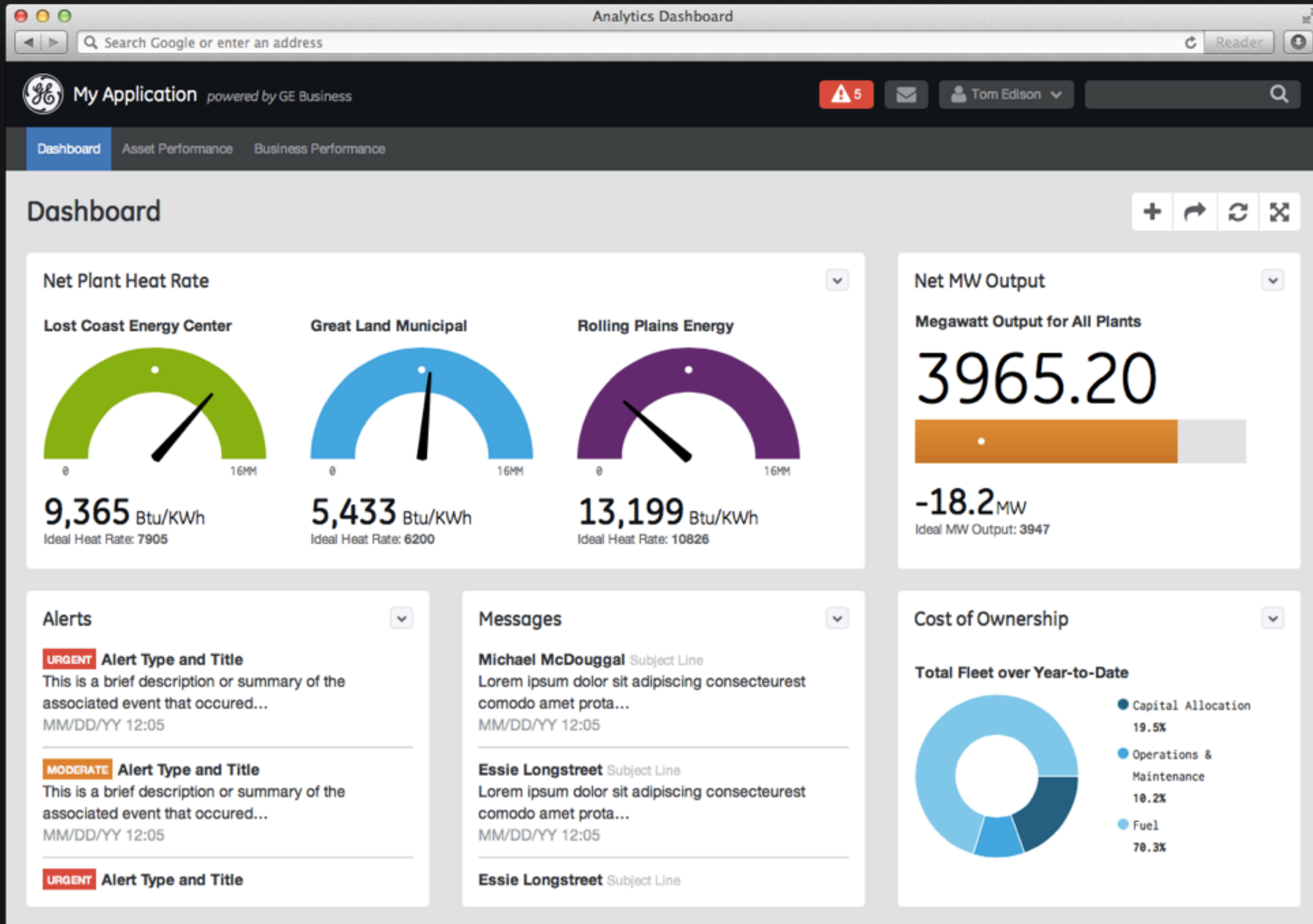
MOBILE DESIGN SYSTEM



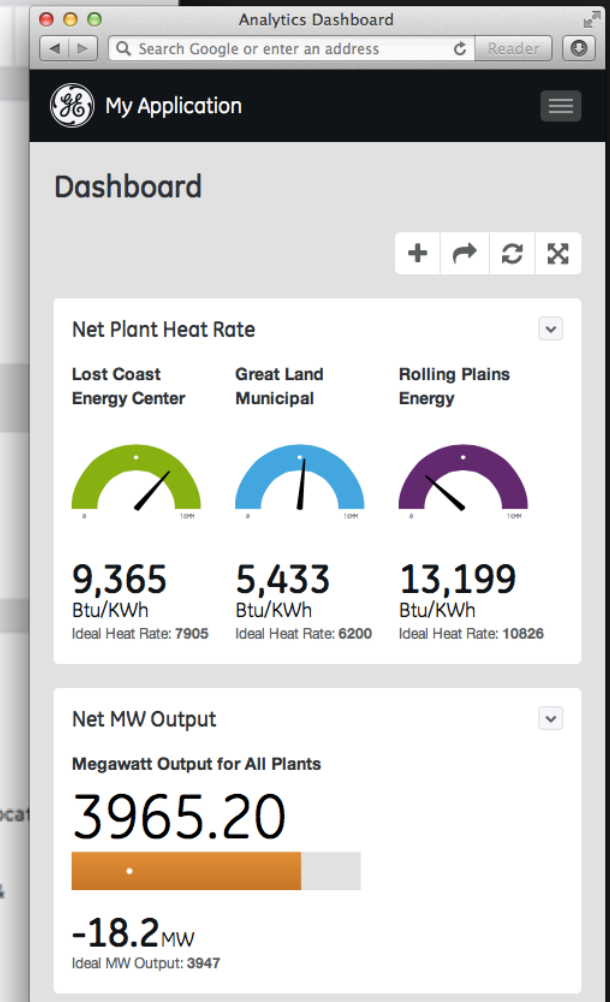
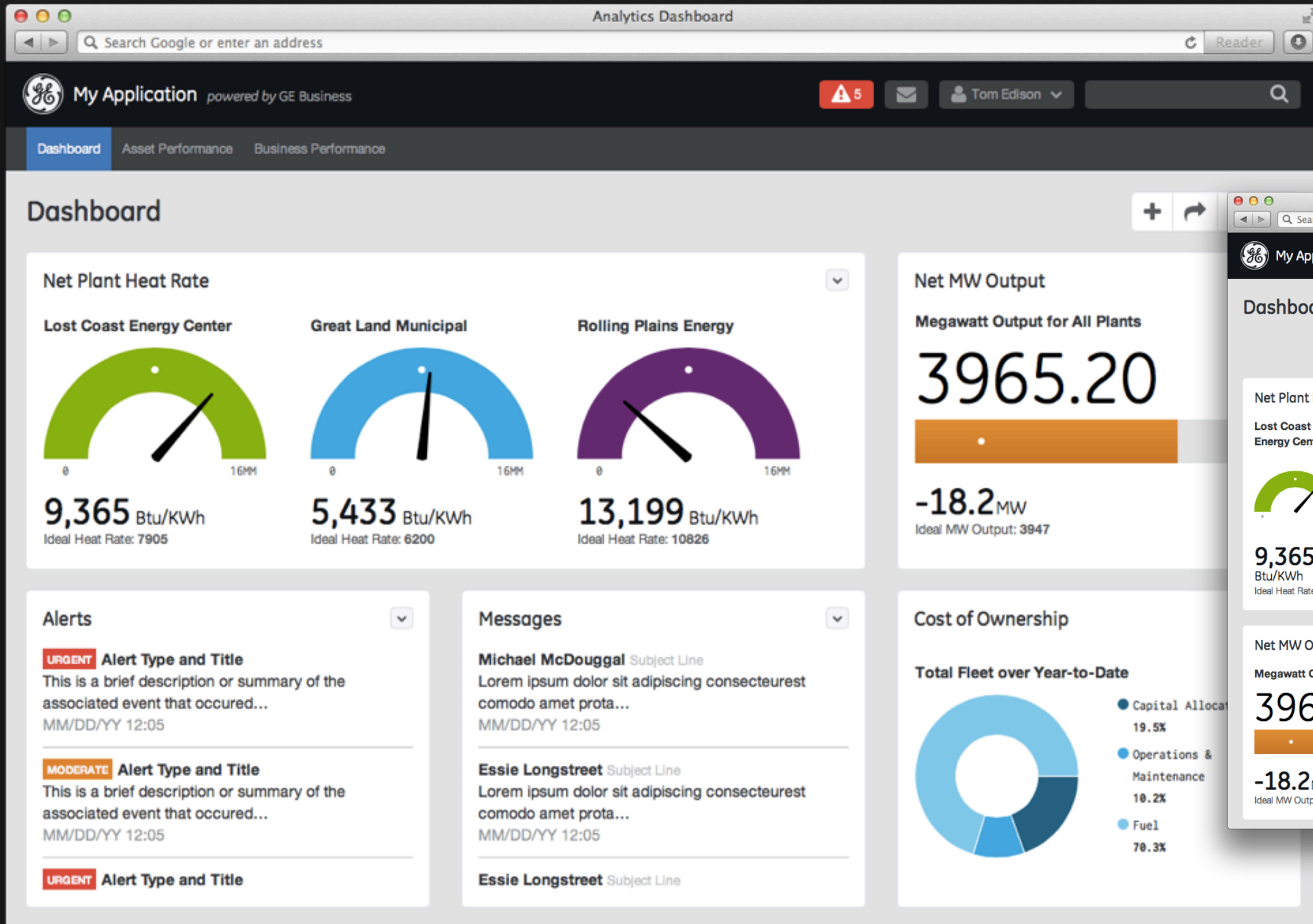
TABLET DESIGN SYSTEM



INDUSTRIAL INTERNET DESIGN SYSTEM



INDUSTRIAL INTERNET DESIGN SYSTEM



INDUSTRIAL INTERNET **DESIGN GOALS**



Speed application development



Improve software UI quality



Enable extension and reuse

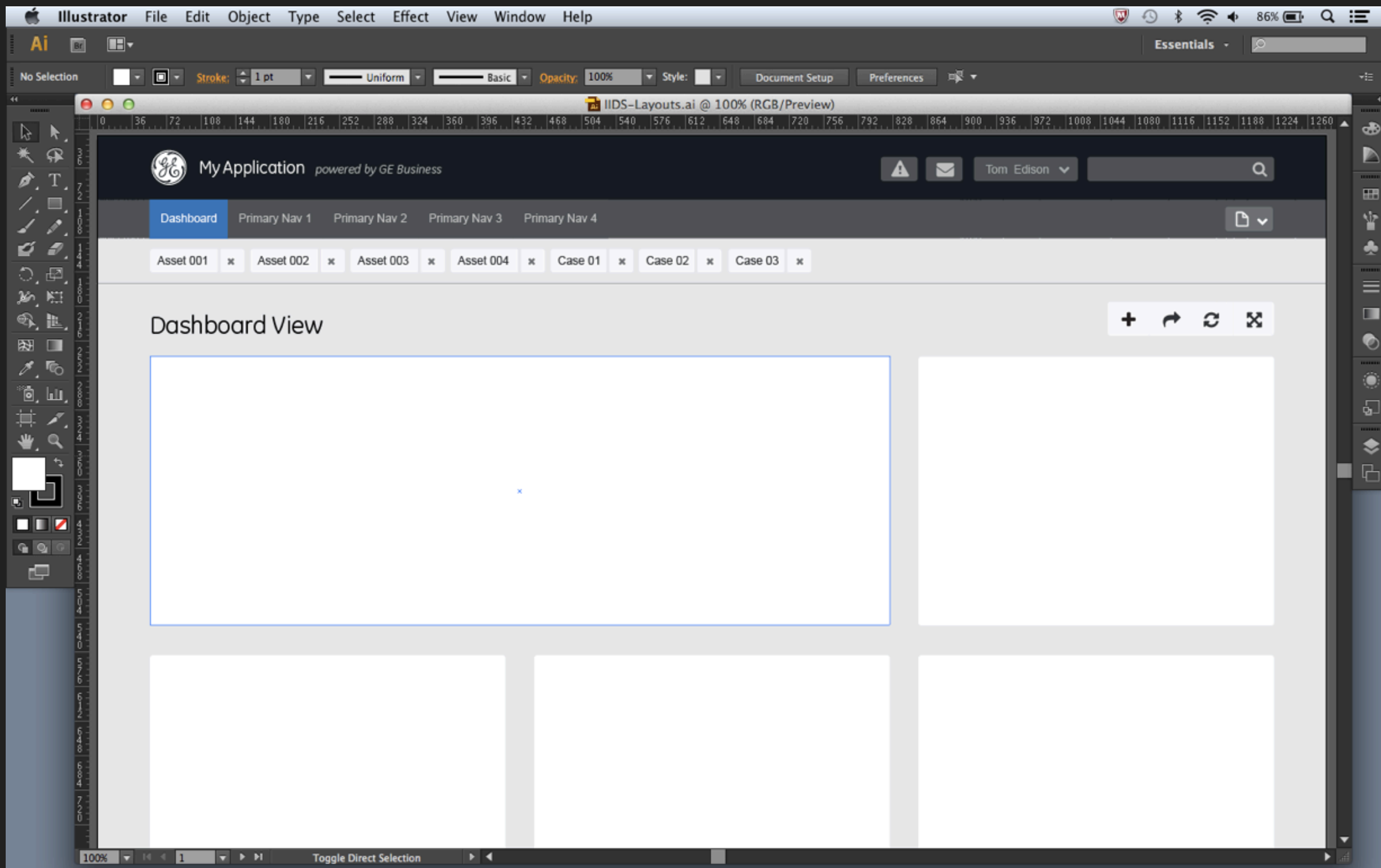


Support additional verticals & external partners

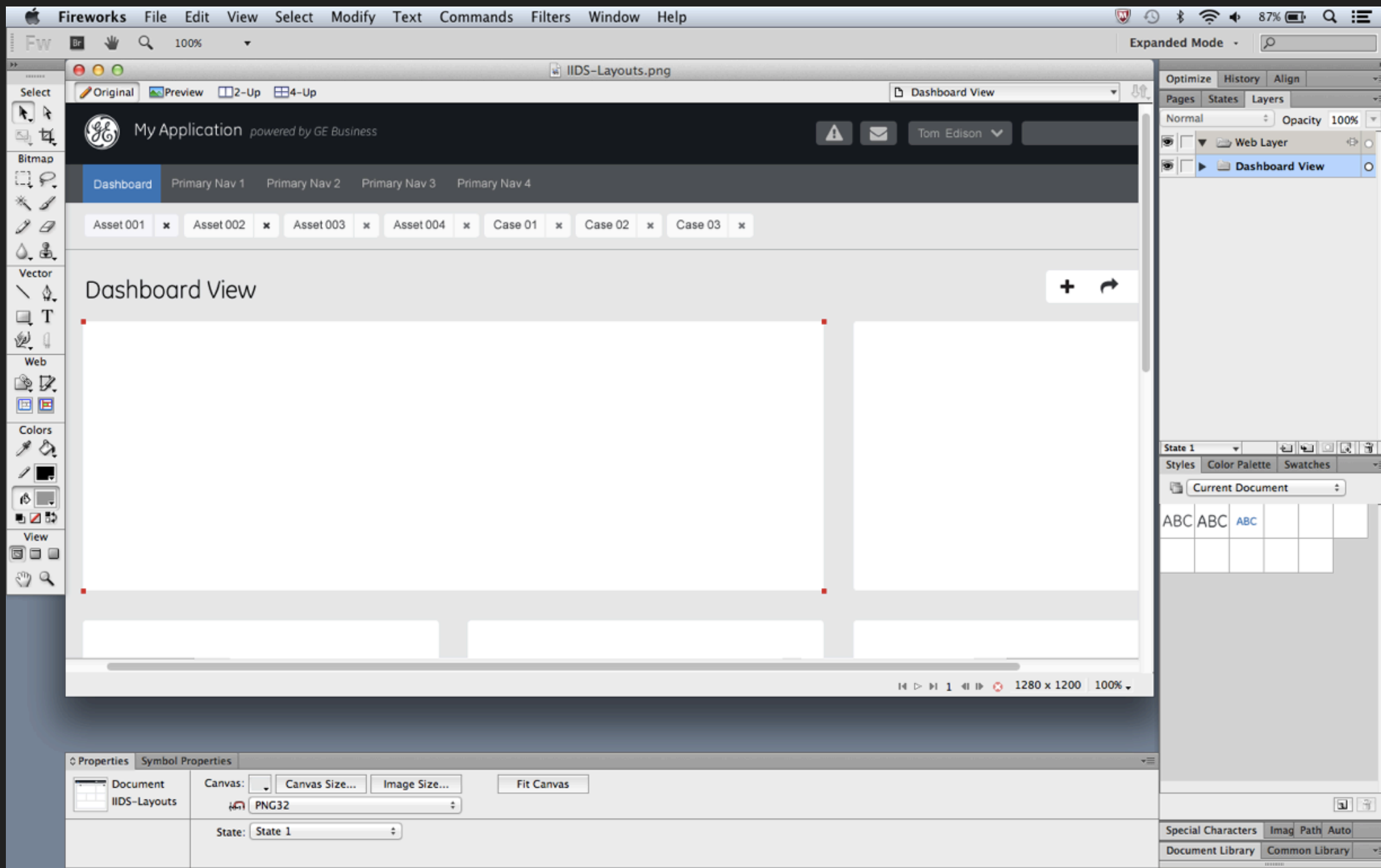


Minimize ongoing support needs

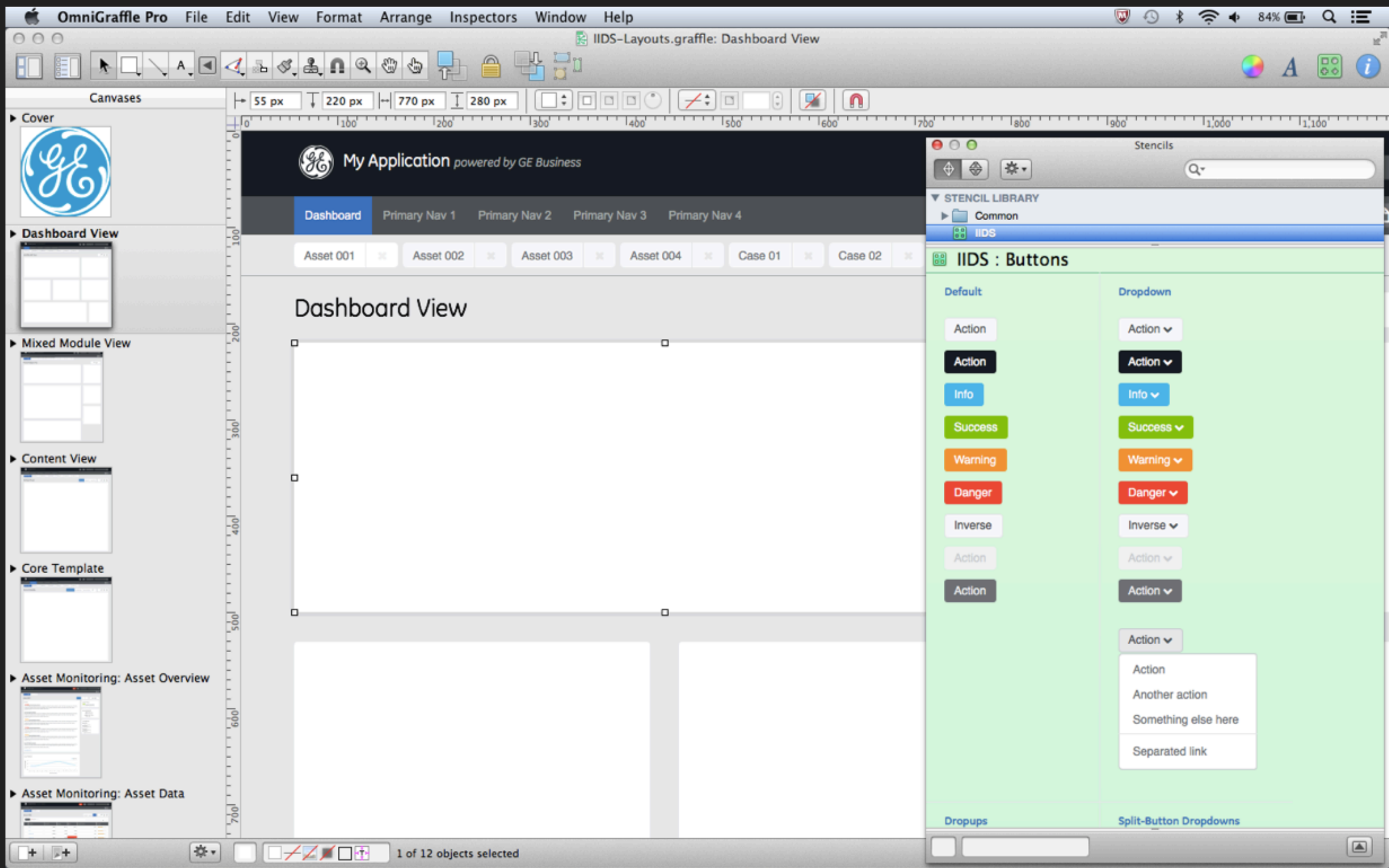
DESIGN TEMPLATES



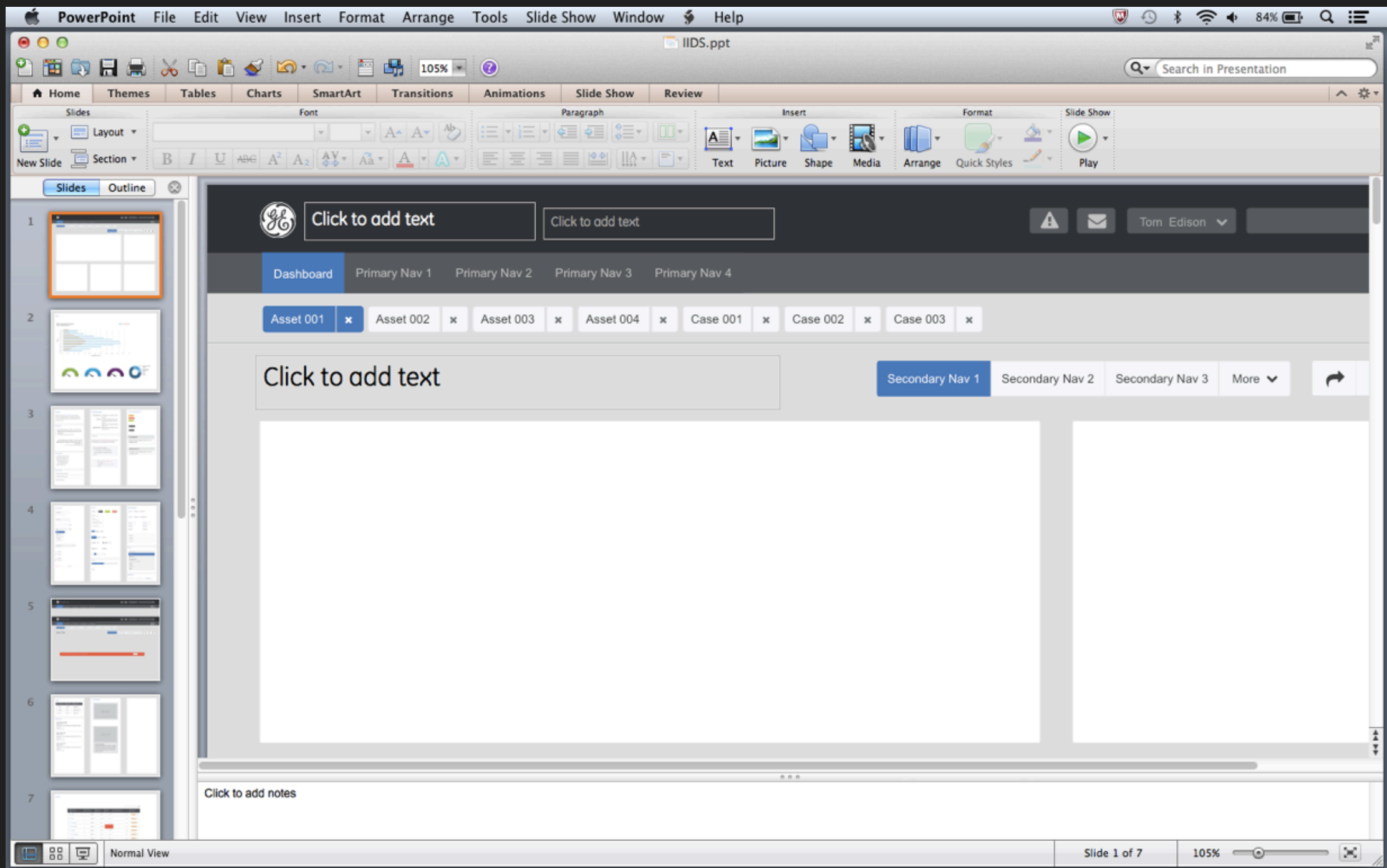
DESIGN TEMPLATES



DESIGN TEMPLATES



DESIGN TEMPLATES





Prototyping in Code

The Industrial Internet Design System (IIDS)

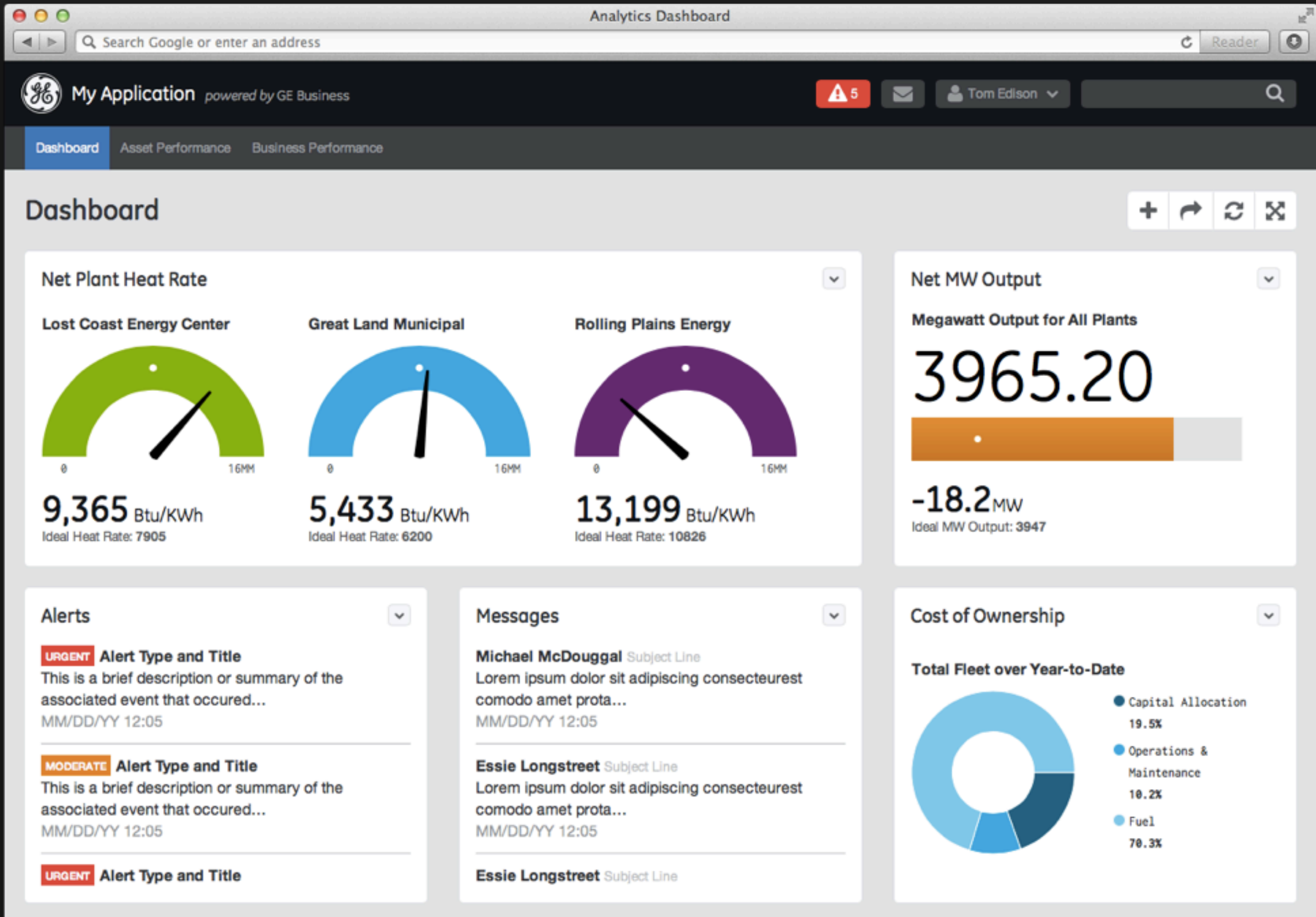
A **code-based** design framework that establishes visual and interactive **patterns** for all of **GE's industrial internet** software

IIDS - INDUSTRIAL INTERNET DESIGN SYSTEM

The screenshot shows a web browser window with the following elements:

- Browser Header:** "Dashboard View" title, search bar with "Search Google or enter an address", and "Reader" button.
- Application Header:** GE logo, "My Application powered by GE Business", notification bell with "5", email icon, user profile "Tom Edison", and search icon.
- Navigation Bar:** "Dashboard" (active), "Primary Nav 1", "Primary Nav 2", "Primary Nav 3", "Primary Nav 4", and a document icon.
- Asset Tabs:** "Asset 001" (active), "Asset 002", "Asset 003", "Asset 004", "Asset 005".
- Main Content Area:** "Dashboard View" title, four empty white panels in a 2x2 grid, and a toolbar with "+", "refresh", "refresh", and "close" icons.

IIDS - INDUSTRIAL INTERNET DESIGN SYSTEM



```
<!DOCTYPE html>
```



```
<title>Dashboard View</title>
  <meta name="viewport" content="width=device-width">
  <link href="._/css/themes/iids/iids.min.css" rel="stylesheet">
  <!--
  Include modernizr and respond first so they can shim any
  elements which are missing in older browsers. Other javascript
  should be included at the end of the page to improve load time.
  -->
  <script src="._/js/vendor/modernizr-respond.js"></script>
</head>
<body>
  <div class="navbar">
    <div class="masthead navbar-inner">
      <div class="container">
        <a class="brand" href="#"><span class="ge-logo">Genera
        <button class="btn btn-collapse" data-toggle="collapse"
          <i class="icon-bar"></i>
          <i class="icon-bar"></i>
          <i class="icon-bar"></i>
        </button>
```



Bootstrap



jQuery
write less, do more.





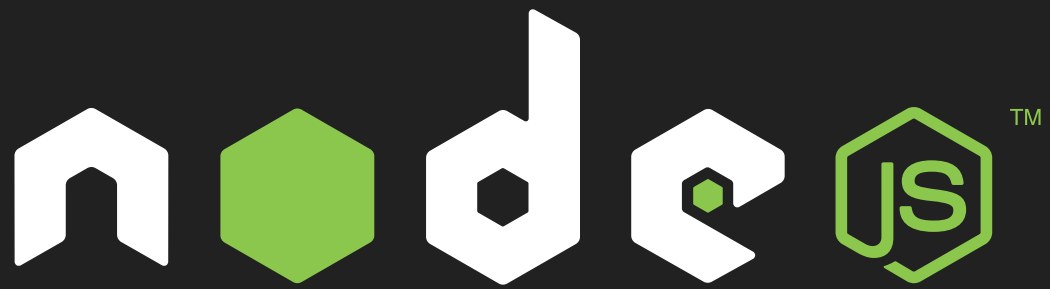
Highcharts JS



D3.js









Knockout.



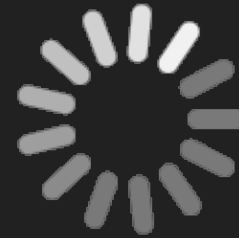
D3.js



jQuery
user interface

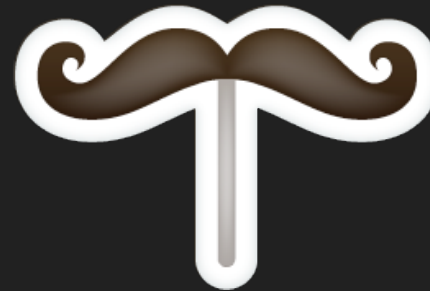


jQuery
write less, do more.



express

handlebars



play ▶

{less}

Bootstrap

node JS

DataTables



Highcharts JS

Font Awesome



Documentation / Examples

Documentation

[Basic UI Elements](#)

Documentation for and examples of IIDS Basic UI Elements, including typography, buttons and forms.

[Components](#)

Documentation for and examples of IIDS Components, including complex buttons, navigation and charting.

Examples

[Datagrids](#)

A comprehensive list of Datagrids examples.

NOTE These examples loads local JSON, and so might not work in Chrome or IE. To preview them, use Firefox or a web server.

Common Patterns

Layouts

[Dashboard View](#)

IIDS dashboard view pattern

[Mixed Module View](#)

IIDS mixed module view pattern

[Content View](#)

IIDS content view pattern

[Kitchen Sink](#)

IIDS template displaying functional demos of multiple IIDS application elements

[Two-pane View](#)

IIDS two-pane view pattern

Labels, Badges & Alerts

| Example | Description | Usage |
|--|-------------|---|
| <p>DEFAULT</p> <p>SUCCESS</p> <p>WARNING</p> <p>IMPORTANT</p> <p>INFO</p> <p>INVERSE</p> | Labels | <p>1. <code>Default</code></p> <hr/> <p>Add one of <code>.label-success</code>, <code>.label-warning</code>, <code>.label-important</code>, <code>.label-info</code> or <code>.label-inverse</code> to colorize the <code>.label</code> for the appropriate context.</p> <p>1. <code>Success</code></p> <hr/> <p>Use the Bootstrap utility classes <code>.pull-left</code> or <code>.pull-right</code> to make <code>.label</code> float alongside headlines or other block elements.</p> |
| <p>1</p> <p>2</p> <p>4</p> <p>6</p> <p>8</p> <p>10</p> | Badges | <p>1. <code>1</code></p> <hr/> <p>Add one of <code>.badge-success</code>, <code>.badge-warning</code>, <code>.badge-important</code>, <code>.badge-info</code> or <code>.badge-inverse</code> to colorize the <code>.badge</code> for the appropriate context.</p> <p>1. <code>2</code></p> |

MY APP



TOM V

SEARCH

DASHBOARD

FLEET

ASSET 001

ASSET 002

ASSET 001 EVENTS

ASSET EVENT

9-15-13

ASSET EVENT

9-13-13

ASSET EVENT

9-10-13

STATUS:

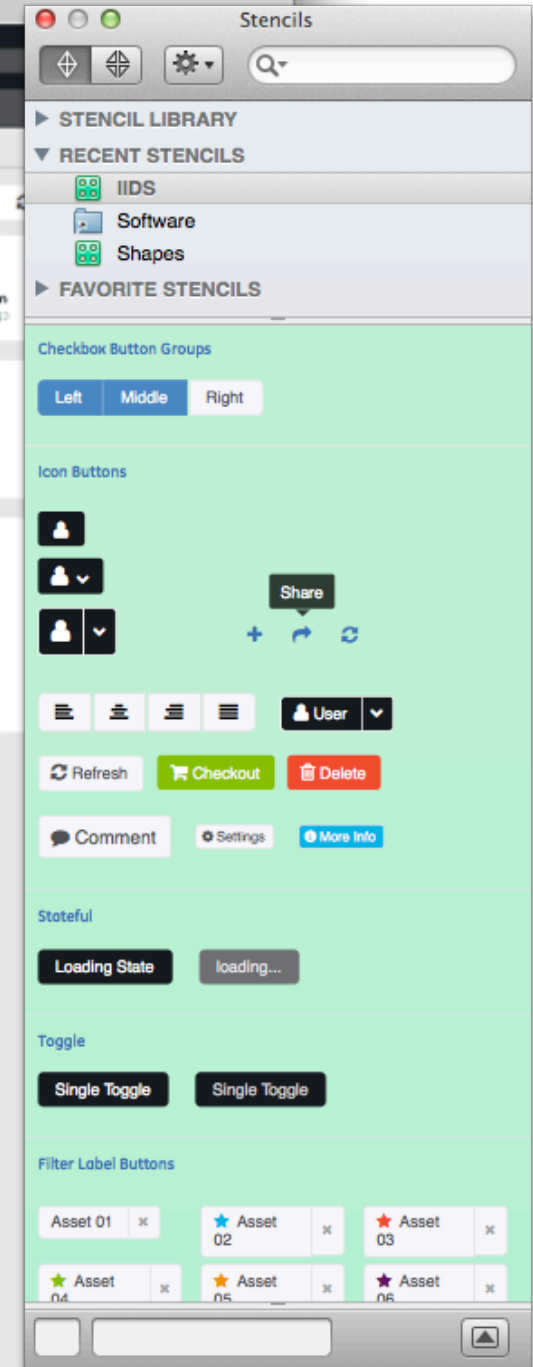
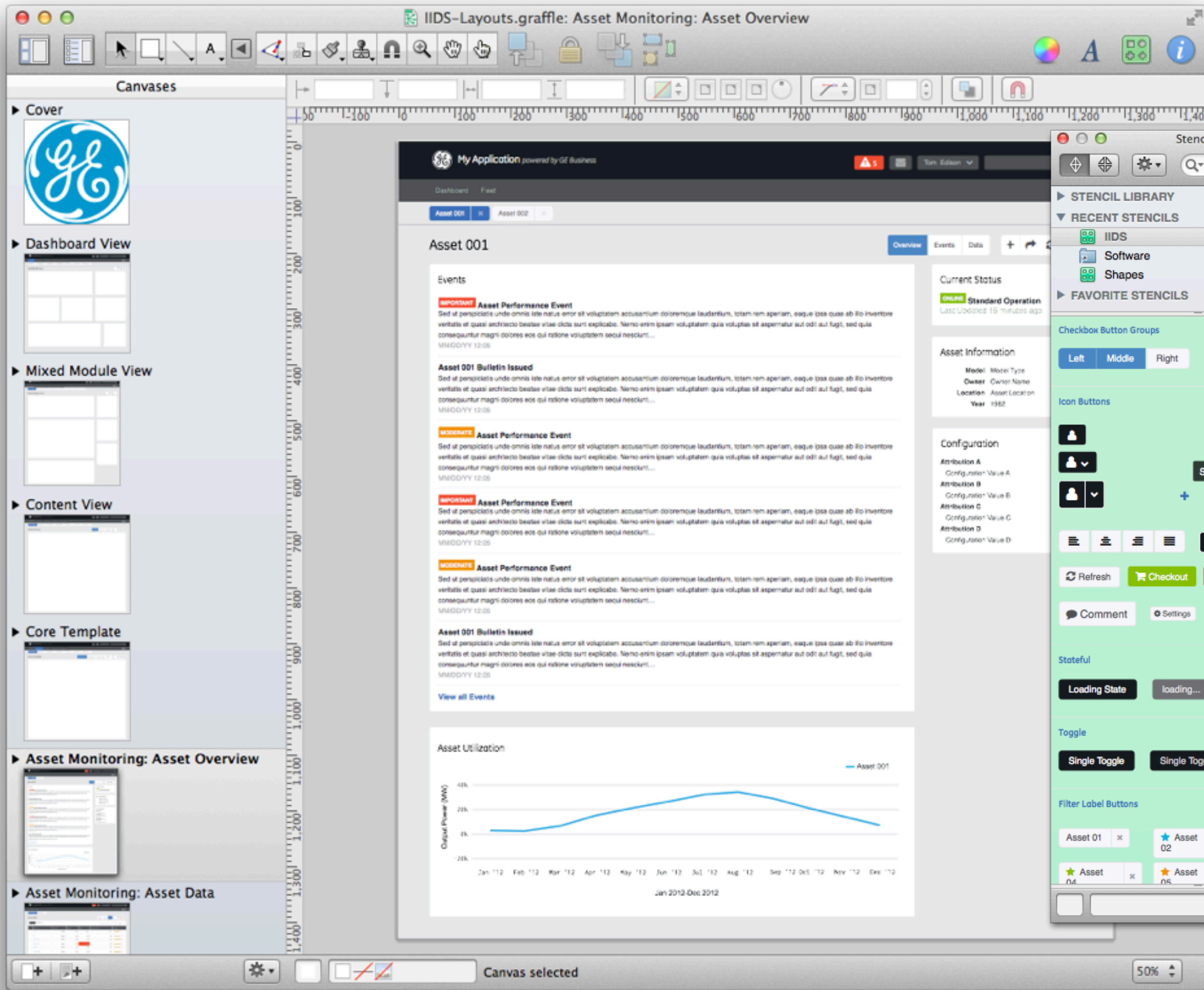
ONLINE

INFO

-
-
-

CONFIG

-
-



```
asset-monitoring-overview.html x
223     <div class="module-body span8">
224         <div class="row">
225     <div>
226         <ul class="message-list">
227             <li class="message-item">
228                 <a href="#">
229                     <span class="label label-important pull-left">Urgent</span>
230                     <h4 class="message-title">Asset Performance Event</h4>
231                     <p>
232                         Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium,
233                         totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae
234                         dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit,
235                         sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt&hellip;
236                     <br>
237                     <time datetime="MM:DD:YYYYTHH:MM:SS" class="message-time">MM/DD/YY 12:05</time>
238                 </p>
239             </a>
240         </li>
241     <li class="message-item">
242         <a href="#">
243             <h4 class="message-title">Asset 001 Bulletin Issued</h4>
244             <p>
245                 Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium,
246                 totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae
247                 dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit,
248                 sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt&hellip;
249             <br>
250             <time datetime="MM:DD:YYYYTHH:MM:SS" class="message-time">MM/DD/YY 12:05</time>
251         </p>
252     </a>
253 </li>
254 <li class="message-item">
255     <a href="#">
256         <span class="label label-warning pull-left">Moderate</span>
257         <h4 class="message-title">Asset Performance Event</h4>
258         <p>
259             Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium,
260             totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae
261             dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit,
262             sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt&hellip;
263         <br>
264         <time datetime="MM:DD:YYYYTHH:MM:SS" class="message-time">MM/DD/YY 12:05</time>
265     </p>
266 </a>
267 </li>
268 </ul>
269 </div>
270 </div>
271 </div>
```



```
223 <div class=
224 <div cla
225 <div>
226 <ul class="mes
227 <li class="m
228 <a href="#"
229 <span cl
230 <h4 clas
231 <p>
232 Sed ut
totam
dicta
sed qu
233 <br>
234 <time
235 </p>
236 </a>
237 </li>
238 <li class="m
239 <a href="#"
240 <h4 clas
241 <p>
242 Sed ut
totam
dicta
sed qu
243 <br>
244 <time
245 </p>
246 </a>
247 </li>
248 <li class="m
249 <a href="#"
250 <span cl
251 <h4 clas
252 <p>
253 Sed ut
totam
dicta
sed qu
254 <br>
255 <time
```

asset-monitoring-overview.html

Asset Monitoring Overview

Search Google or enter an address

My Application powered by GE Business

5

Tom Edison

Dashboard Fleet

Asset 001 Asset 002 Asset 003 Asset 004 Asset 005

Asset 001

Overview Events Data

Events

URGENT Asset Performance Event

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt...

MM/DD/YY 12:05

Asset 001 Bulletin Issued

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt...

MM/DD/YY 12:05

MODERATE Asset Performance Event

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt...

MM/DD/YY 12:05

URGENT Asset Performance Event

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt...

MM/DD/YY 12:05

Current Status

ONLINE Standard Operation

Last Updated 16 minutes ago

Asset Information

| | |
|----------|----------------|
| Model | Model Type |
| Owner | Owner Name |
| Location | Asset Location |
| Year | 1982 |


Configuration

Attribute A
Configuration Value A

Attribute B
Configuration Value B

Attribute C
Configuration Value C

Attribute D
Configuration Value D



Activity #2: Coding

Install a text editor:

Sublime Text is great on PC and Mac

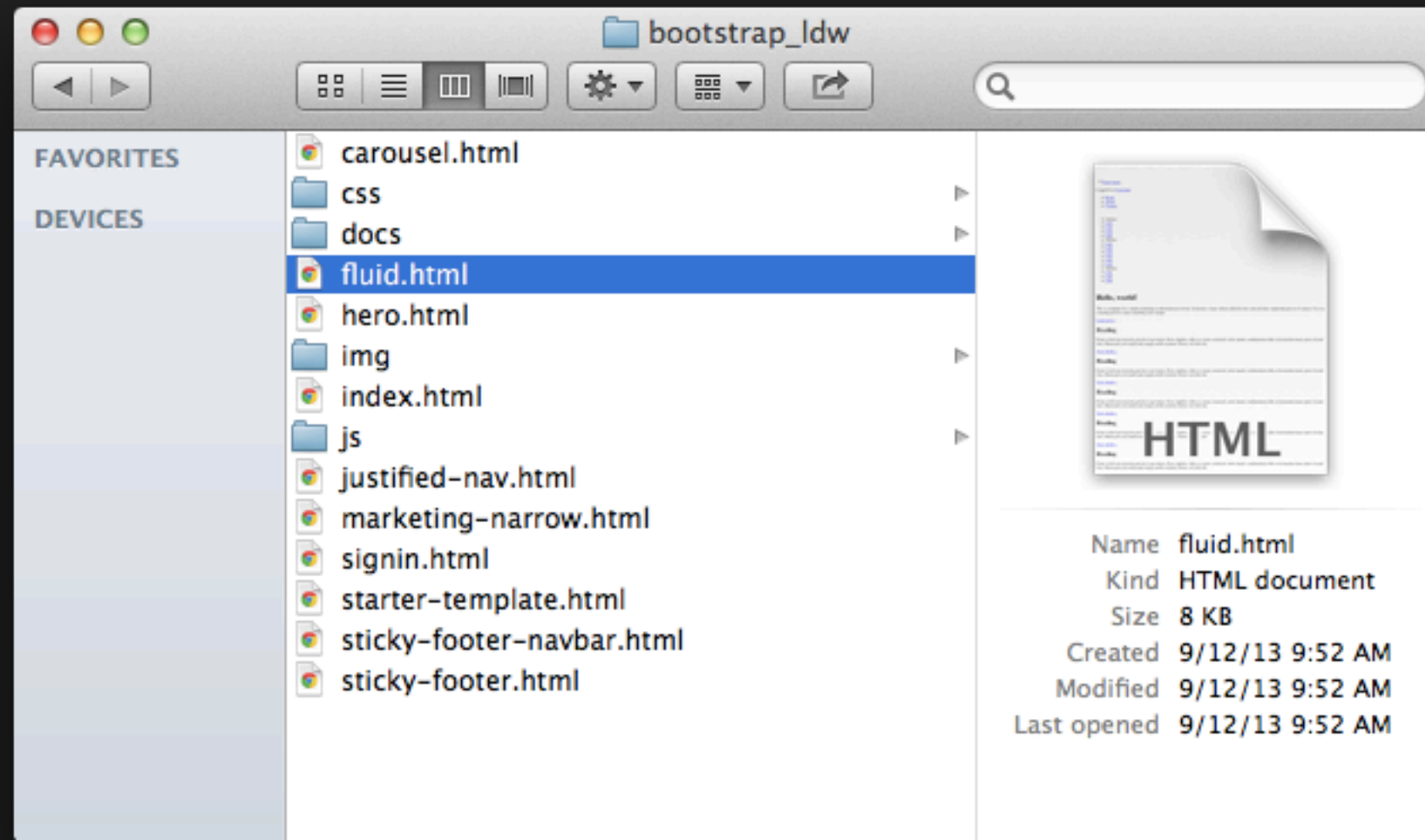
Download the zip file:

<http://tr.im/4dkrc>

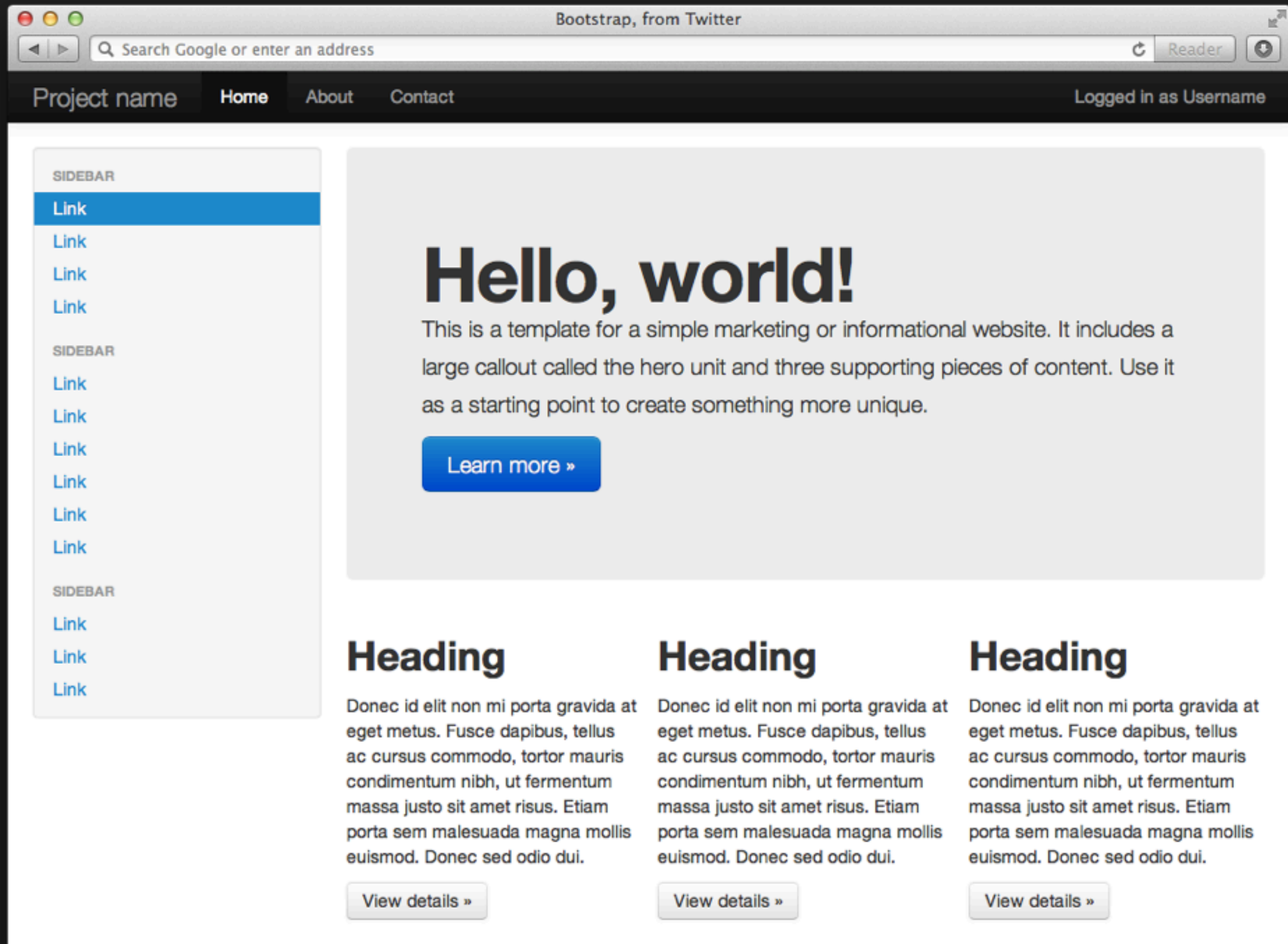
OPEN SOURCE DESIGN SYSTEMS



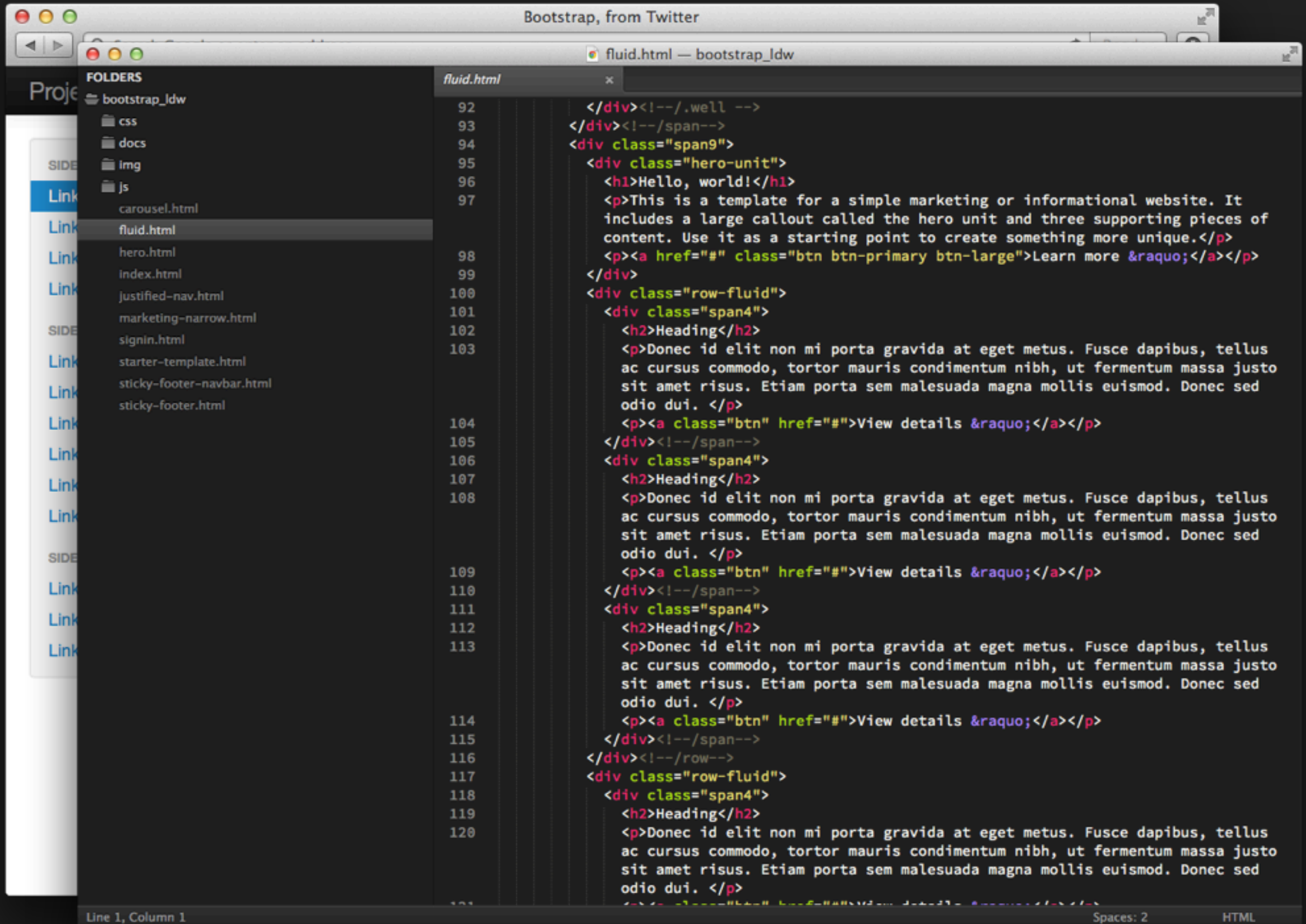
BOOTSTRAP_LDW.ZIP



FLUID.HTML



FLUID.HTML



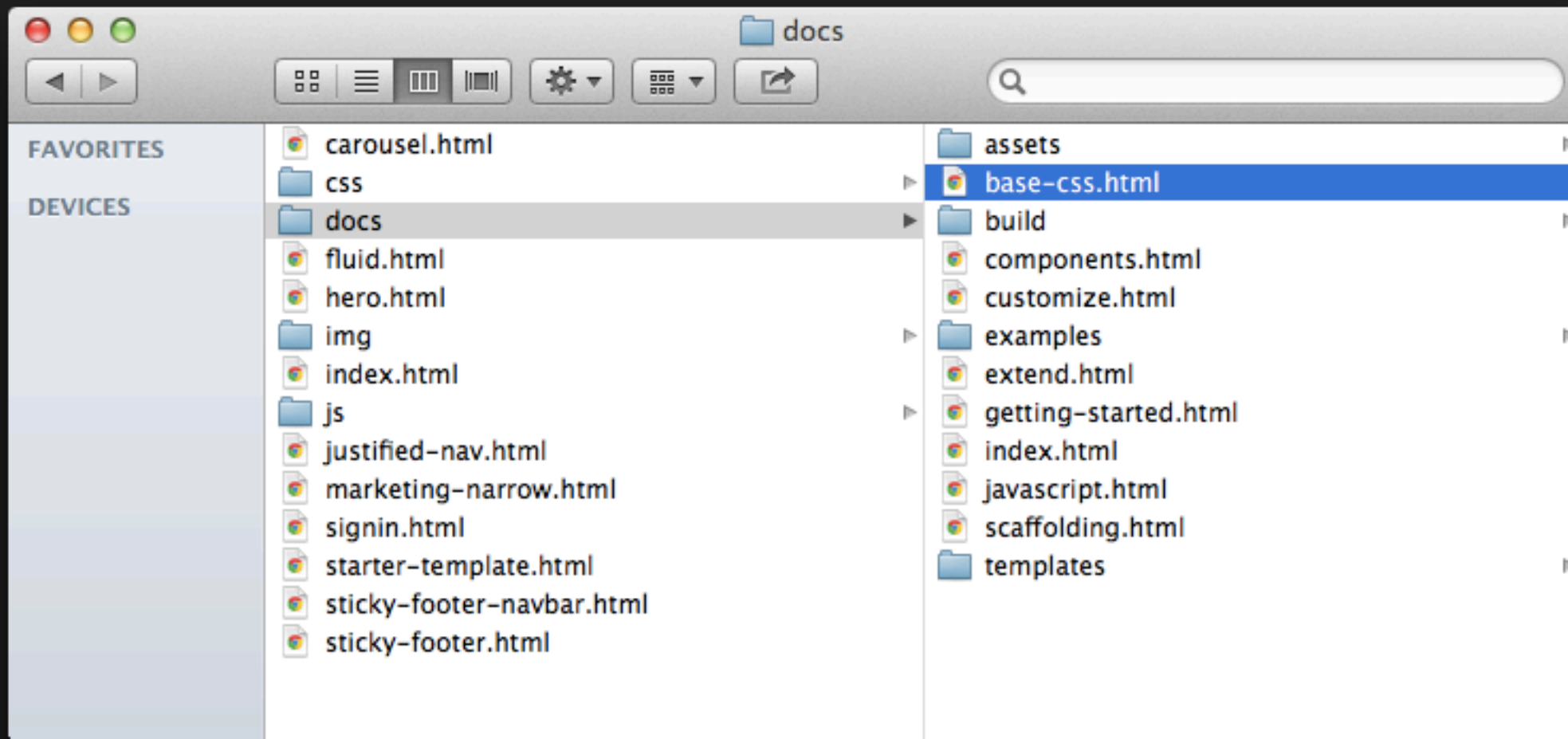
```
fluid.html
92     </div><!--/.well -->
93 </div><!--/span-->
94 <div class="span9">
95   <div class="hero-unit">
96     <h1>Hello, world!</h1>
97     <p>This is a template for a simple marketing or informational website. It
98     includes a large callout called the hero unit and three supporting pieces of
99     content. Use it as a starting point to create something more unique.</p>
100    <p><a href="#" class="btn btn-primary btn-large">Learn more &raquo;</a></p>
101  </div>
102  <div class="row-fluid">
103    <div class="span4">
104      <h2>Heading</h2>
105      <p>Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus
106      ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo
107      sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed
108      odio dui. </p>
109      <p><a class="btn" href="#">View details &raquo;</a></p>
110    </div><!--/span-->
111    <div class="span4">
112      <h2>Heading</h2>
113      <p>Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus
114      ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo
115      sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed
116      odio dui. </p>
117      <p><a class="btn" href="#">View details &raquo;</a></p>
118    </div><!--/span-->
119  </div><!--/row-->
120  <div class="row-fluid">
121    <div class="span4">
122      <h2>Heading</h2>
123      <p>Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus
124      ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo
125      sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed
126      odio dui. </p>
127      <p><a class="btn" href="#">View details &raquo;</a></p>
128    </div><!--/span-->
129  </div><!--/row-->
130 </div><!--/main-->
131 </div><!--/body-->
132 </html>
```

Line 1, Column 1

Spaces: 2

HTML

BOOTSTRAP_LDW/DOCS



BASE-CSS.HTML

The image shows a browser window displaying the Bootstrap documentation page for Base CSS. The browser's address bar shows the URL `getbootstrap.com/2.3.2/base-css.html`. The page has a dark navigation bar with links for Home, Get started, Scaffolding, Base CSS (which is highlighted), Components, JavaScript, and Customize. The Bootstrap logo is in the top right corner. On the left side, there is a sidebar menu with links for Typography (highlighted), Code, Tables, Forms, Buttons, Images, and Icons by Glyphicons. The main content area is titled "Typography" and contains a sub-section for "Headings". The "Headings" section explains that all HTML headings from `<h1>` to `<h6>` are available and provides an "Example" box showing the visual hierarchy of these headings. Below the headings section, there is a section for "Body copy" which states that Bootstrap's default font-size is 14px and line-height is 20px, and that paragraphs receive a bottom margin of half their line-height (10px by default).

Base · Bootstrap

getbootstrap.com/2.3.2/base-css.html

Home Get started Scaffolding **Base CSS** Components JavaScript Customize Bootstrap

Typography >

- Code >
- Tables >
- Forms >
- Buttons >
- Images >
- Icons by Glyphicons >

Typography

Headings

All HTML headings, `<h1>` through `<h6>` are available.

Example

h1. Heading 1

h2. Heading 2

h3. Heading 3

h4. Heading 4

h5. Heading 5

h6. Heading 6

Body copy

Bootstrap's global default `font-size` is **14px**, with a `line-height` of **20px**. This is applied to the `<body>` and all paragraphs. In addition, `<p>` (paragraphs) receive a bottom margin of half their line-height (10px by default).

BASE-CSS.HTML#BUTTONS

The image shows a browser window displaying the Bootstrap documentation page for Buttons. The browser's address bar shows the URL `getbootstrap.com/2.3.2/base-css.html#buttons`. The page title is "Base - Bootstrap". The navigation menu includes "Home", "Get started", "Scaffolding", "Base CSS", "Components", "JavaScript", and "Customize". The "Base CSS" menu item is active. On the left, a sidebar menu lists "Typography", "Code", "Tables", "Forms", "Buttons", "Images", and "Icons by Glyphicons". The "Forms" menu item is highlighted. The main content area is titled "Buttons" and "Default buttons". It explains that button styles can be applied to anything with the `.btn` class applied, and typically you'll want to apply these to only `<a>` and `<button>` elements for the best rendering. Below this is a table with 8 rows, each representing a different button style. The table columns are "Button", "class=""", and "Description".

| Button | class="" | Description |
|---------|------------------------------|--|
| Default | <code>btn</code> | Standard gray button with gradient |
| Primary | <code>btn btn-primary</code> | Provides extra visual weight and identifies the primary action in a set of buttons |
| Info | <code>btn btn-info</code> | Used as an alternative to the default styles |
| Success | <code>btn btn-success</code> | Indicates a successful or positive action |
| Warning | <code>btn btn-warning</code> | Indicates caution should be taken with this action |
| Danger | <code>btn btn-danger</code> | Indicates a dangerous or potentially negative action |
| Inverse | <code>btn btn-inverse</code> | Alternate dark gray button, not tied to a semantic action or use |
| Link | <code>btn btn-link</code> | Deemphasize a button by making it look like a link while maintaining button behavior |

SCAFFOLDING.HTML#GRIDSYSTEM

The screenshot shows a web browser window with the URL `file:///Users/212326609/Desktop/bootstrap_ldw/docs/scaffolding.html#gridSystem`. The page title is "Scaffolding · Bootstrap". The navigation menu includes "Home", "Get started", "Scaffolding", "Base CSS", "Components", "JavaScript", and "Customize". The "Scaffolding" section is active, and the "Grid system" sub-section is selected in the left sidebar. The main content area features a "Live grid example" section with a description of the Bootstrap grid system and a visual representation of the grid. Below this is a "Basic grid HTML" section with a code example and an explanation of the classes used.

Live grid example

The default Bootstrap grid system utilizes **12 columns**, making for a 940px wide container without [responsive features](#) enabled. With the responsive CSS file added, the grid adapts to be 724px and 1170px wide depending on your viewport. Below 767px viewports, the columns become fluid and stack vertically.

1 1 1 1 1 1 1 1 1

2 3 4

4 5

9

Basic grid HTML

For a simple two column layout, create a `.row` and add the appropriate number of `.span*` columns. As this is a 12-column grid, each `.span*` spans a number of those 12 columns, and should always add up to 12 for each row (or the number of columns in the parent).

```
1. <div class="row">
2.   <div class="span4">...</div>
3.   <div class="span8">...</div>
4. </div>
```

Given this example, we have `.span4` and `.span8`, making for 12 total columns and a complete row.

Offsetting columns

Move columns to the right using `.offset*` classes. Each class increases the left margin of a column by a whole column. For example, `.offset4` moves `.span4` over four columns.

ACTIVITY #2: CODING

Turn your sketches into an interactive prototype
for your Smart Home Manager

ACTIVITY #2: CODING

As a team, figure out which part of your Smart Home Manager each of you is going to work on (5 min)

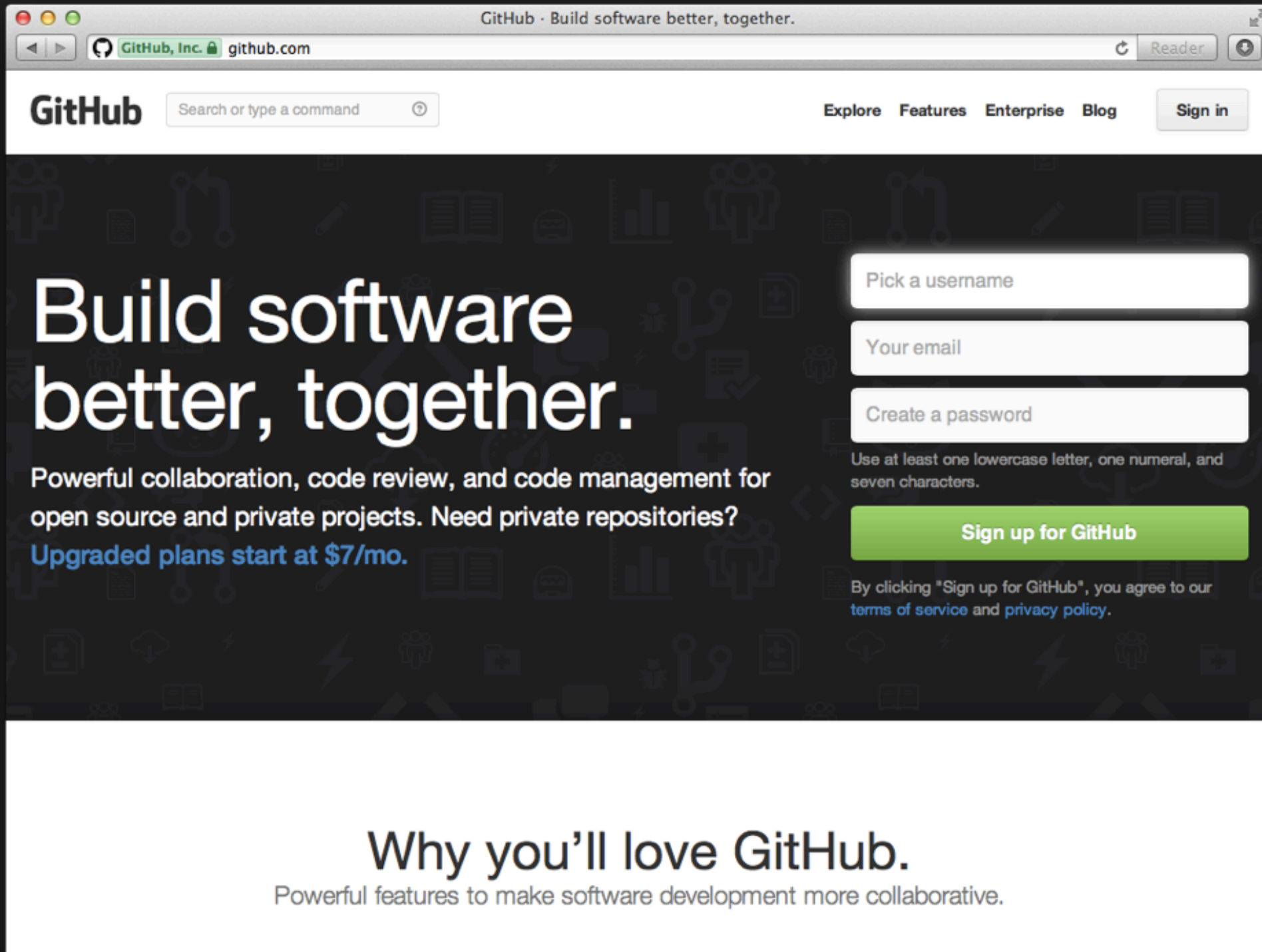
As an individual, start prototyping your part (20 min)

Share your progress with your team (1 min per person)

Iterate on your part in response to team feedback (15 min)

EXTRA CREDIT

Create a GitHub repository to collaborate with your team



The image shows a screenshot of the GitHub website in a browser window. The browser's address bar shows "github.com" and the page title is "GitHub · Build software better, together." The navigation menu includes "Explore", "Features", "Enterprise", "Blog", and "Sign in". The main content area features the GitHub logo, a search bar, and the headline "Build software better, together." Below the headline, it says "Powerful collaboration, code review, and code management for open source and private projects. Need private repositories? Upgraded plans start at \$7/mo." To the right, there is a sign-up form with three input fields: "Pick a username", "Your email", and "Create a password". Below the password field, there is a note: "Use at least one lowercase letter, one numeral, and seven characters." A green "Sign up for GitHub" button is positioned below the form. At the bottom of the form, it states: "By clicking 'Sign up for GitHub', you agree to our terms of service and privacy policy." Below the main content area, there is a white section with the heading "Why you'll love GitHub." and the subtext "Powerful features to make software development more collaborative."

GitHub · Build software better, together.

GitHub, Inc. github.com

GitHub Search or type a command

Explore Features Enterprise Blog Sign in

Build software better, together.

Powerful collaboration, code review, and code management for open source and private projects. Need private repositories? Upgraded plans start at \$7/mo.

Pick a username

Your email

Create a password

Use at least one lowercase letter, one numeral, and seven characters.

[Sign up for GitHub](#)

By clicking "Sign up for GitHub", you agree to our [terms of service](#) and [privacy policy](#).

Why you'll love GitHub.

Powerful features to make software development more collaborative.

EXTRA CREDIT

Add a data visualization component (Highcharts, D3, etc.)

The screenshot shows the Highcharts website interface. At the top, the browser address bar displays 'www.highcharts.com'. The main header features the Highcharts JS logo and navigation links: Home, Demo, Documentation, Support, Products, About Us, and Shop. Two featured charts are visible: 'Tokyo climate' and 'USD to EUR'. The 'Tokyo climate' chart is a dual-axis chart showing temperature (line) and rainfall (bars) by month, with a pie chart for sunshine hours. The 'USD to EUR' chart is a line chart showing the exchange rate over time, with zoom controls (1m, 3m, 6m, YTD, 1y, All) and a timeline from 2005 to 2010. Below the charts, there are two promotional boxes for 'Highcharts 3.0' and 'Highstock', each with a 'Read more' and 'Download' button. A 'News' section on the right lists recent updates and events.

Monday, 16 September 2013

Highcharts JS

Interactive JavaScript charts for your web projects

Find us on [Twitter](#) [Facebook](#) [LinkedIn](#)

[Home](#) [Demo](#) [Documentation](#) [Support](#) [Products](#) [About Us](#) [Shop](#)

Tokyo climate

Temperature (°C) and Rainfall (mm) by month. Includes Sunshine hours pie chart.

| Month | Temperature (°C) | Rainfall (mm) |
|-------|------------------|---------------|
| Jan | ~5 | ~50 |
| Feb | ~6 | ~60 |
| Mar | ~8 | ~80 |
| Apr | ~12 | ~100 |
| May | ~16 | ~120 |
| Jun | ~20 | ~140 |
| Jul | ~24 | ~160 |
| Aug | ~26 | ~180 |
| Sep | ~24 | ~200 |
| Oct | ~20 | ~180 |
| Nov | ~14 | ~140 |
| Dec | ~8 | ~100 |

USD to EUR

Zoom: 1m, 3m, 6m, YTD, 1y, All

Timeline: 21. Feb, 7. Mar, 21. Mar, 4. Apr, 18. Apr, 2. May

Years: 2005, 2010

Highcharts 3.0

Highcharts is a charting library written in pure HTML5/JavaScript, offering intuitive, interactive charts to your web site or web application. Highcharts currently supports line, spline, area, areaspline, column, bar, pie, scatter, angular gauges, arearange, areasplinerange, columnrange, bubble, box plot, error bars, funnel, waterfall and polar chart types.

[Read more](#) [Download](#)

Highstock

Highstock lets you create stock or general timeline charts in pure JavaScript, including sophisticated navigation options like a small navigator series, preset date ranges, date picker, scrolling and panning.

[Read more](#) [Download](#)

News

- Introducing Highcharts Cloud Alpha (2013-09-03)
- Highcharts Standalone Framework (2013-08-09)
- Highsoft Nominated Norway's Entrepreneur of the Year (2013-05-24)
- Improved Image export with PhantomJS (2013-05-08)
- Meet us in Silicon Valley!

EXTRA CREDIT

Add a data visualization component (Highcharts, D3, etc.)

The image shows two overlapping browser windows. The top window is the Highcharts JS website, displaying a temperature chart and a pie chart. The bottom window is the D3.js website, featuring a grid of various data visualization examples such as treemaps, sunbursts, and network graphs. A red banner in the top right corner of the D3.js window says "Fork me on GitHub".

Highcharts JS
Interactive JavaScript Charts

Monday, 16 September 2013

Home Demo

Temperature 30°C 20°C 10°C
Sunshine
Jan Feb Mar Apr May

Highcharts 3.0
Highcharts is a charting library offering intuitive, interactive charts. Highcharts currently supports line, pie, scatter, angular gauges, area, columnrange, bubble, box plot, and other chart types.
Read more

D3.js - Data-Driven Documents

Overview Examples Documentation Source

Data-Driven Documents

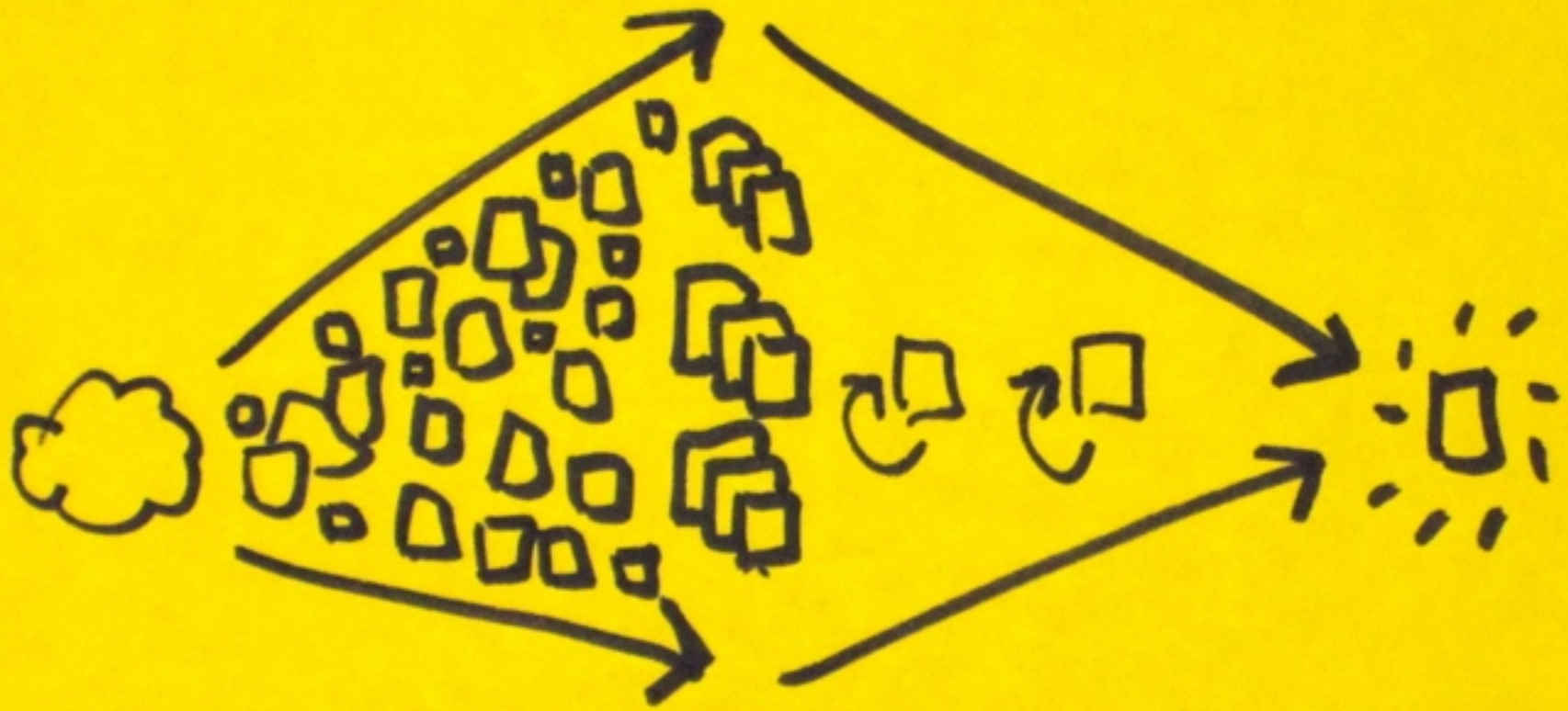
See more examples.

Fork me on GitHub

D3.js is a JavaScript library for manipulating documents based on data. **D3** helps you bring data to life using HTML, SVG and CSS. D3's emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to DOM manipulation.



Nice work!



GENERATE CLUSTER ITERATE



Thank you!

Dane Petersen

@thegreatsunra

Karel Barnoski

@karelbarnoski