# Rapid Prototyping

# What is Rapid Prototyping?

**rapid prototyping =**

the process of quickly mocking up the future state of a system and validating it. Doing this rapidly and iteratively generates feedback early and often in the process, improving the final design and reducing the need for changes during development.

By creating a prototype, you are able to identify shortcomings in the flow and usability of your design before investing too much time or money in the development.

“a picture is worth a thousand words”

"a ~~picture~~ is worth a thousand words"

prototype

# Ideation Flow

idea

research

design

implementation

testing

launch

idea

research

tonight

design

implementation

testing

launch

“To design is
to solve human problems
by identifying them and
executing the best solution.”

*"Design is directed toward human beings. To design is to solve human problems by identifying them and executing the best solution."*

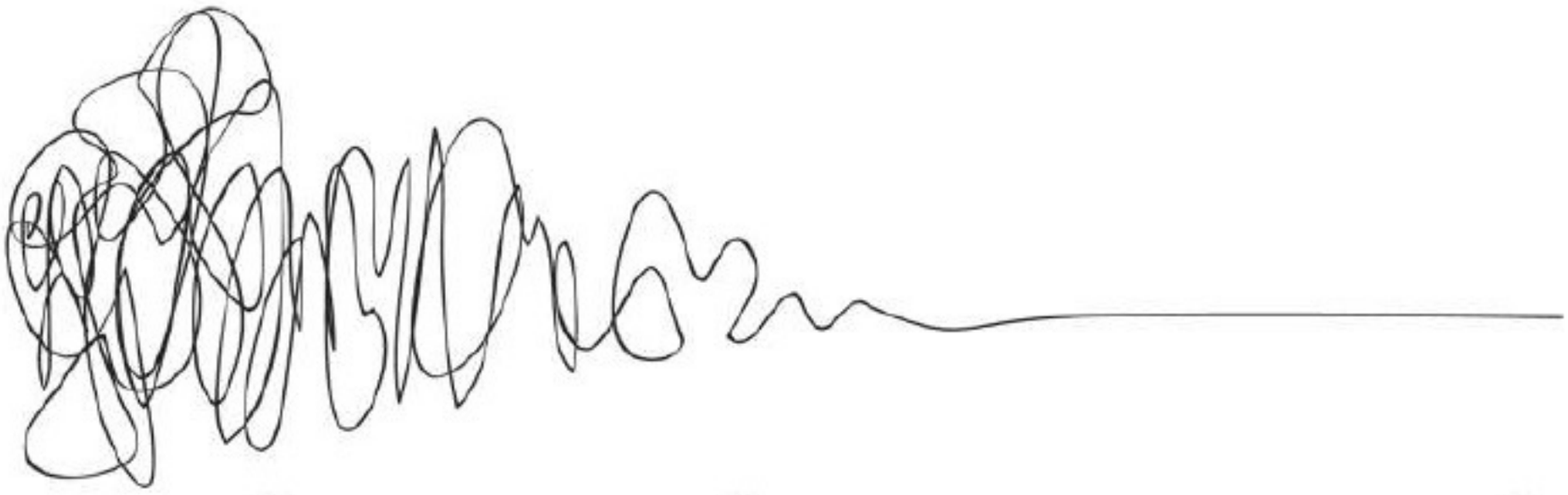
–Ivan Chermayeff

# Design is hard

# Design Process

UNCERTAINTY / PATTERNS / INSIGHTS

CLARITY / FOCUS



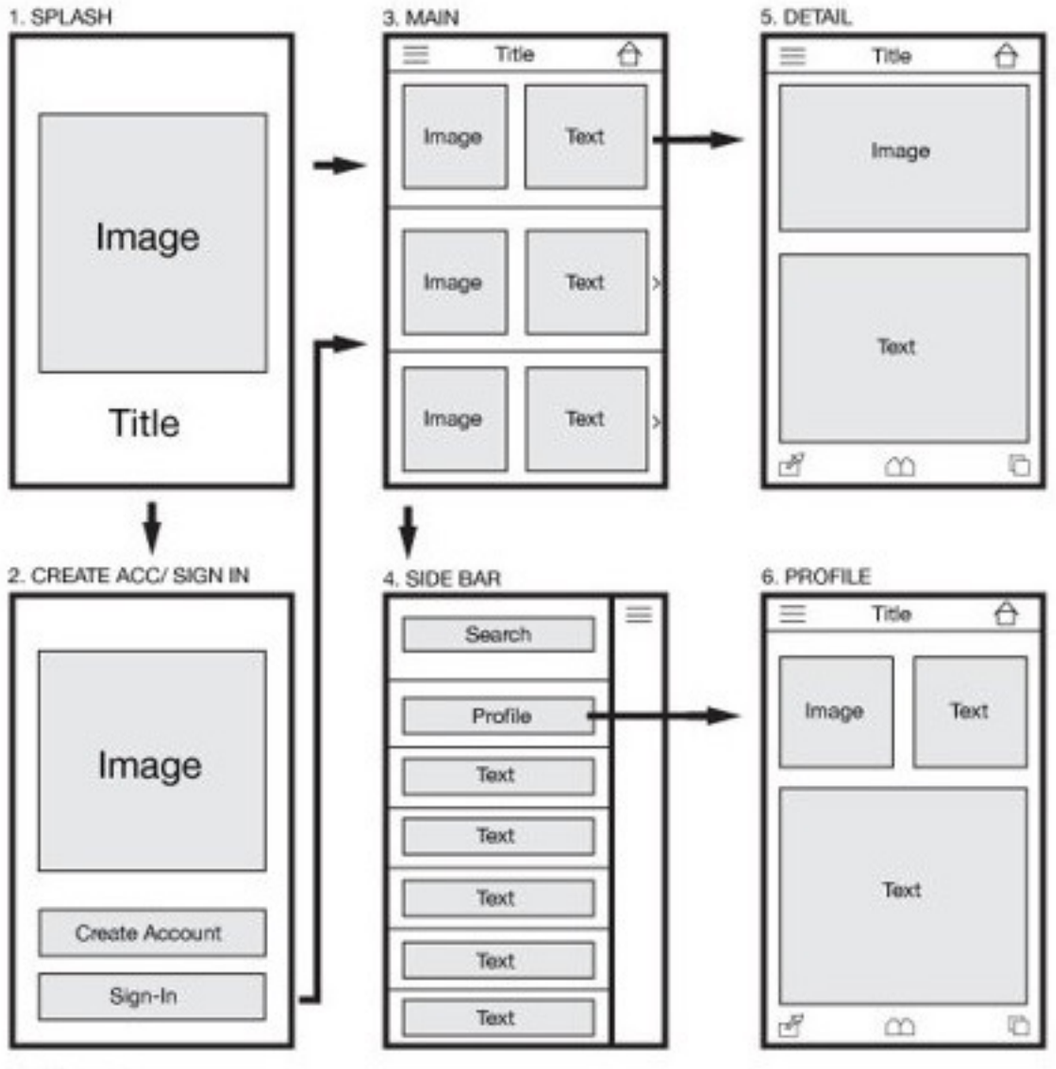
RESEARCH

CONCEPT PROTOTYPE

DESIGN

# Wireframes

A **wireframe** is a visual representation of the content of a page or app. It is a visualization tool and process for presenting proposed functionality, structure, and content of a web page, website, or application.



facebook | Search for people, places and things | Danny Dany | Home

Dan Danny Boy

FAVORITES
- News Feed
- Messages
- Events
- Photos

ADVERTS
- Adverds Manager

PAGES
- Chaos Media
- Like Pages

GRUPS
- Create Group

APPS
- App Centre
- Pokes
- Notes
- Games Feed

Update status | Add photo/video

Wath's on your mind?

SORT

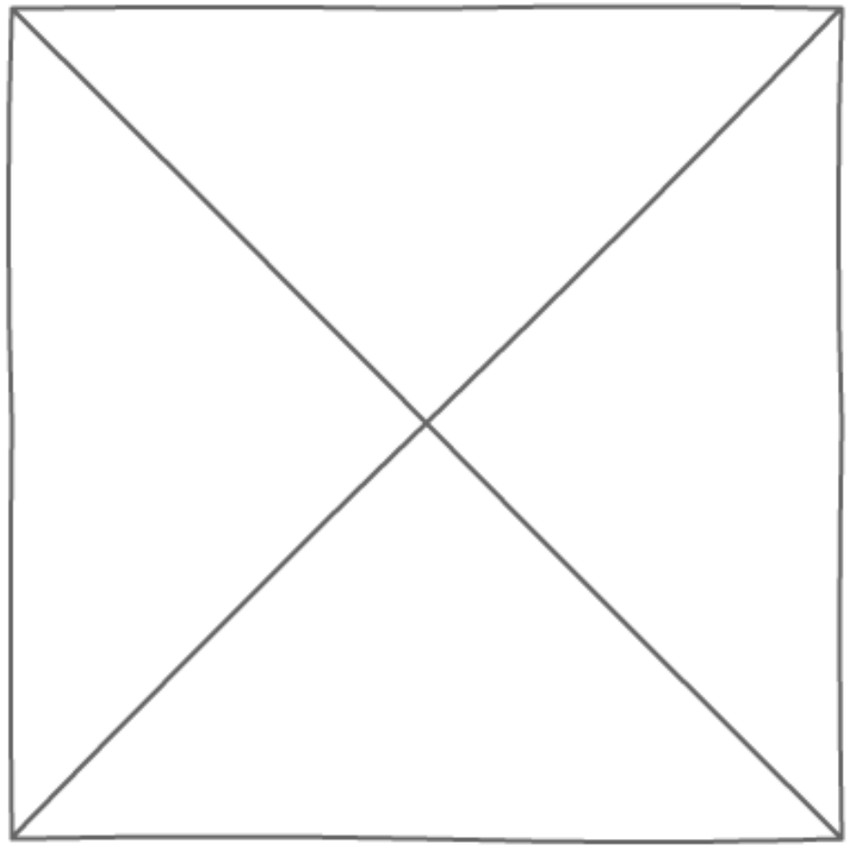
Dan Danny Boy
:D

**Facebook surpasses**
wwww.youtube.com

Facebook surpasses one billion users as it tempts new markets

Like ·Comment · Share · 11 minutes ago ·

**Ana Mary** changed her Profile picture.



**Alex Ale** and 1 **other**
**2 events** today

Sponsored | Create an advert

**Aldus PageMaker.wix.com**
Aldus PageMaker including versions of Lorem Ipsum.

**Aldus PageMaker.wix.com**
Aldus PageMaker including versions of Lorem Ipsum.

**Aldus PageMaker.wix.com**
Aldus PageMaker including versions of Lorem Ipsum.

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Aldus PageMaker including versions of Lorem Ipsum.

**Aldus PageMaker.wix.com**
Aldus PageMaker including versions of Lorem Ipsum.

**Aldus PageMaker.wix.com**

Pinterest

English ▼ About ▼ Login

Categories ▼ -Everiting - Popular - Gifts ▼

**Pinterest is an online pinboard.**
Organize and share things you love.

Join Printerest | Login

188x154

Red Ribbon Week
19 like 41 repins

**Krisas Carlon** via **Trista Duigle** onto Work it out!

188x186

Scotland
2 like 11 repins

**Andrea.Leger** I'll follow you.Would you follow me?

188x278

Bhutan
12 like 47 repins

**Crstal Remmel** Definition of HUSBAND... :)

188x112

Button Christmas Cards
7 like 3 repins

188x211

this is brilliant!
16 like 37 repins

**Bonnie Pellegrino** onto Things for My Wall

188x165

There has been a miracle...
22 like 31 repins

188x134

joining granny squares |
33 like 25 repins

**David Gary** Hoping for an early Season Thre

188x128

Moon & Stars
23 like 13 repins

**Tanya Prodko** Absolutely gorgeous!!!!

# Mockups

A **mockup** is a model or replica of a machine or structure, used for instructional or experimental purposes. A UI mockup consists of one or several static pictures that resemble the future UI of the application in as many aspects as possible

MARCO Planner

http://portal.midatlanticocean.org/planner

MARCO Portal | Help | About

Firstname Lastname

Data | Designs | Active

Conservation

Fishing

- Essential Fish Habitat
- National Marine Sactuaries
- Gray Whale Migration
- Fishing Effort

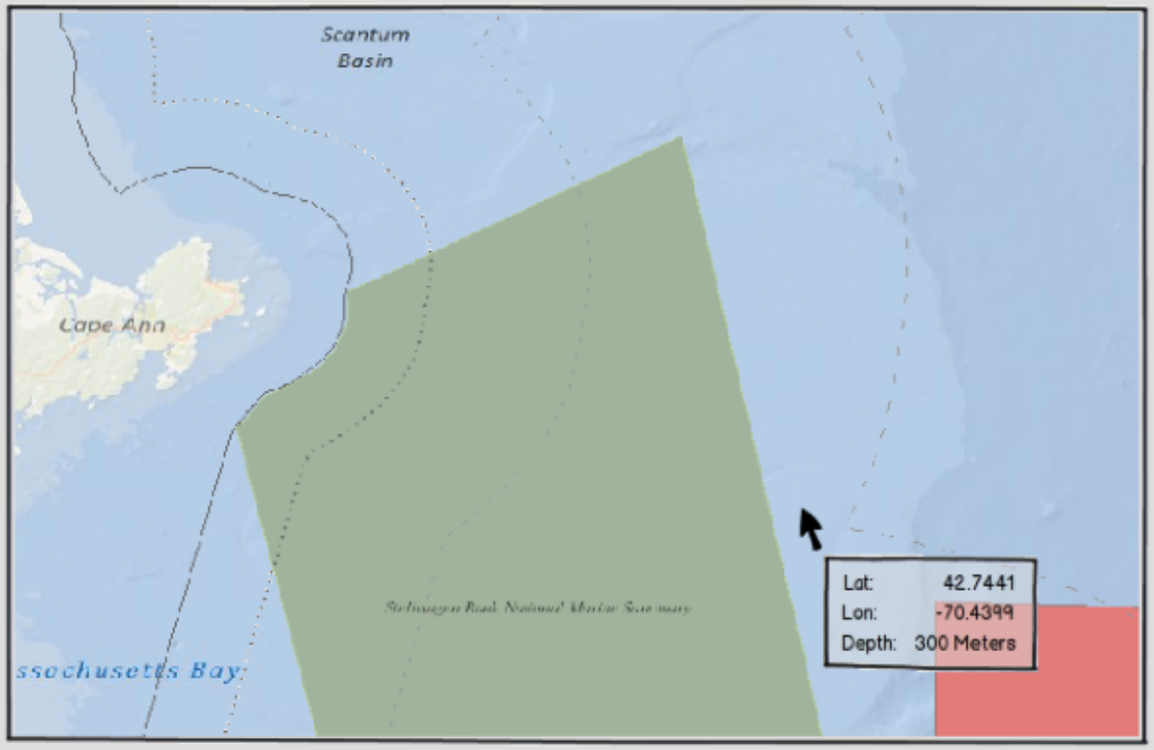
Shipping

Wind Energy

All Gear Types
Bottom Gear Types
• Pelagic Gear Types
Summer Flounder Landings

Add Design

Conservation | Fishing | Shipping | Wind Energy




## About the Fishing Data

Sartorial single-origin coffee umami tofu art party chambray. Marfa skateboard mixtape exercitation portland cliche put a bird on it, hoodie ex post-ironic williamsburg.

Twee hoodie selvage gentrify, mcsweeney's kale chips before they sold out anim sint butcher. Wolf tempor gastropub pop-up semiotics, wes anderson synth consequat dolor sunt.

Bookmarks | Coordinates & Depth

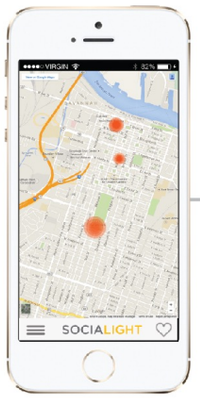
Fishing Effort Legend

Essential Fish Habitat Legend

- Bluefin Tuna
- Bigeye Tuna
- Albacore Tuna
- Skipjack Tuna

National Marine Sanctuaries Legend

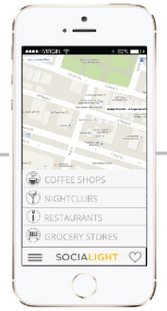
START




DISTRICT VIEW

tap icons to view more info

CATEGORIES

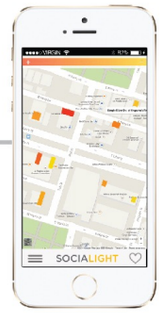



select a category

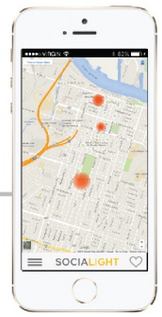
select a location

exit location info

tap outside window




tap logo




tap heart for favorites

FAVORITES

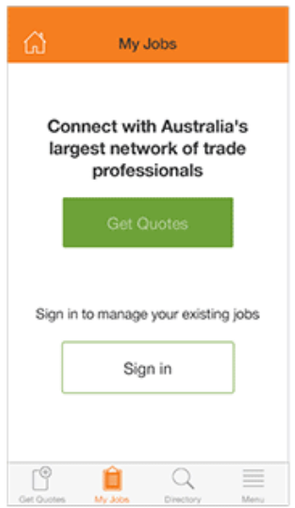
tap name for more info

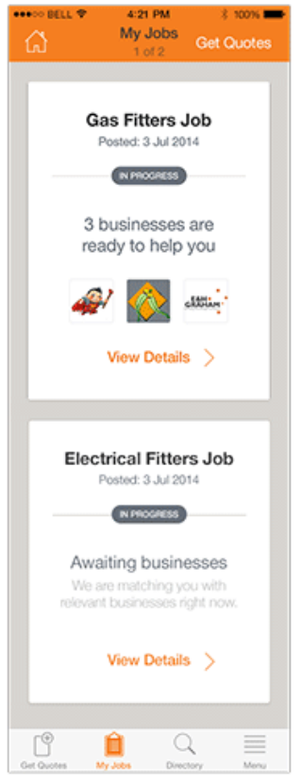
# Prototypes

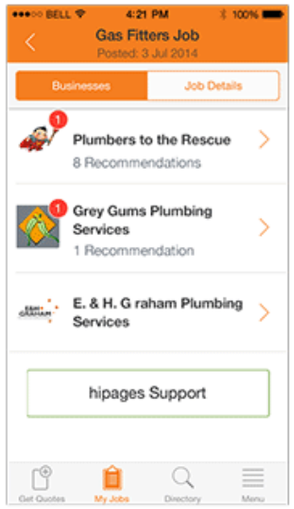
A **prototype** is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or learned from.

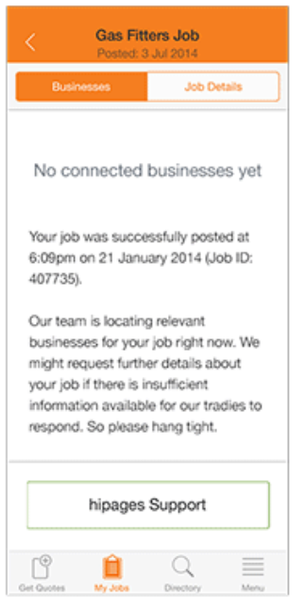
hipages
Home Improvements Start Here

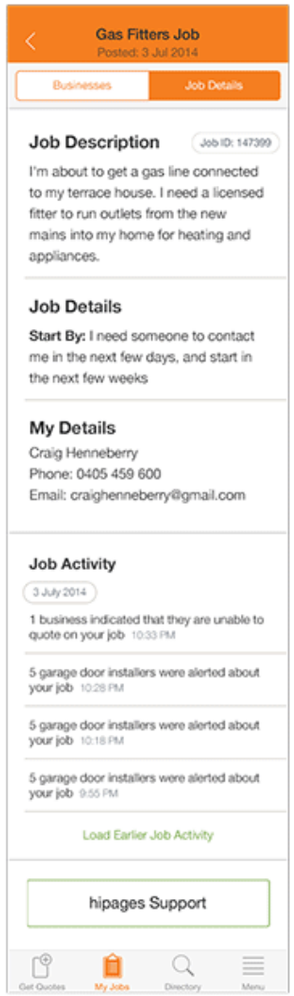
hipages
Home Improvements Start Here
Get Quotes
Get available trades people to call you about your job
Manage Jobs
See progress on the quotes you've requested
Directory
View profiles of over 40,000 local trades and professionals
Sign In
Synchronise your jobs across mobile and web

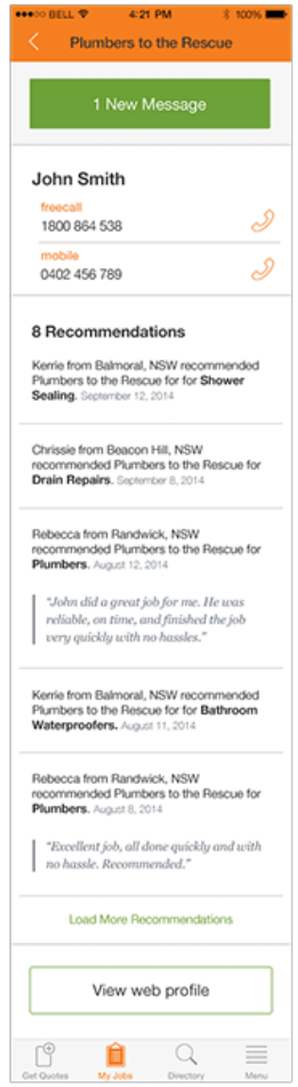

My Jobs
Connect with Australia's largest network of trade professionals
Get Quotes
Sign in to manage your existing jobs
Sign in
Get Quotes
My Jobs
Directory
Menu

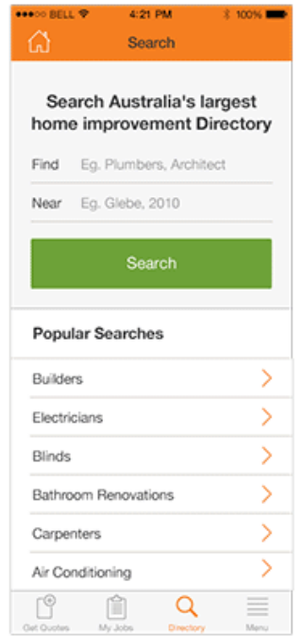

My Jobs
1 of 2
Get Quotes
Gas Fitters Job
Posted: 3 Jul 2014
IN PROGRESS
3 businesses are ready to help you
View Details
Electrical Fitters Job
Posted: 3 Jul 2014
IN PROGRESS
Awaiting businesses
We are matching you with relevant businesses right now.
View Details
Get Quotes
My Jobs
Directory
Menu

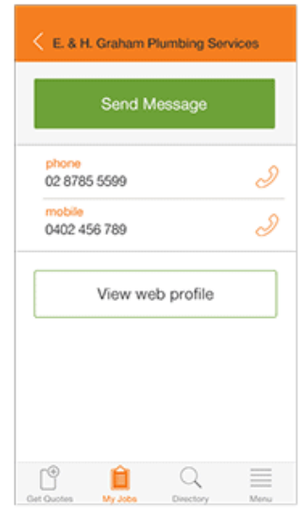

Gas Fitters Job
Posted: 3 Jul 2014
Businesses
Job Details
Plumbers to the Rescue
8 Recommendations
Grey Gums Plumbing Services
1 Recommendation
E. & H. G raham Plumbing Services
hipages Support
Get Quotes
My Jobs
Directory
Menu

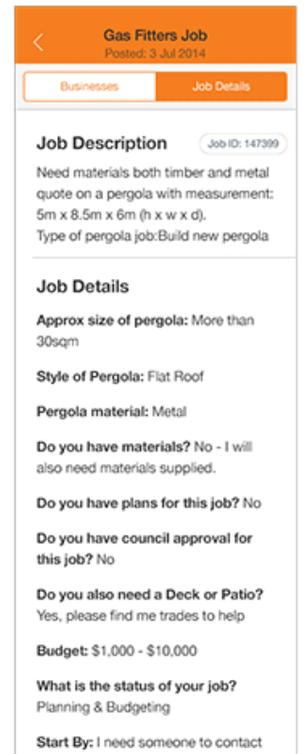

Gas Fitters Job
Posted: 3 Jul 2014
Businesses
Job Details
No connected businesses yet
Your job was successfully posted at 6:09pm on 21 January 2014 (Job ID: 407735).
Our team is locating relevant businesses for your job right now. We might request further details about your job if there is insufficient information available for our tradies to respond. So please hang tight.
hipages Support
Get Quotes
My Jobs
Directory
Menu


Gas Fitters Job
Posted: 3 Jul 2014
Businesses
Job Details
Job Description
Job ID: 147399
I'm about to get a gas line connected to my terrace house. I need a licensed fitter to run outlets from the new mains into my home for heating and appliances.
Job Details
Start By: I need someone to contact me in the next few days, and start in the next few weeks
My Details
Craig Henneberry
Phone: 0405 459 600
Email: craighenneberry@gmail.com
Job Activity
3 July 2014
1 business indicated that they are unable to quote on your job 10:33 PM
5 garage door installers were alerted about your job 10:28 PM
5 garage door installers were alerted about your job 10:18 PM
5 garage door installers were alerted about your job 9:55 PM
Load Earlier Job Activity
hipages Support
Get Quotes
My Jobs
Directory
Menu


Plumbers to the Rescue
1 New Message
John Smith
freecall
1800 864 538
mobile
0402 456 789
8 Recommendations
Kerrie from Balmoral, NSW recommended Plumbers to the Rescue for for Shower Sealing. September 12, 2014
Chrissie from Beacon Hill, NSW recommended Plumbers to the Rescue for Drain Repairs. September 8, 2014
Rebecca from Randwick, NSW recommended Plumbers to the Rescue for Plumbers. August 12, 2014
"John did a great job for me. He was reliable, on time, and finished the job very quickly with no hassles."
Kerrie from Balmoral, NSW recommended Plumbers to the Rescue for for Bathroom Waterproofers. August 11, 2014
Rebecca from Randwick, NSW recommended Plumbers to the Rescue for Plumbers. August 8, 2014
"Excellent job, all done quickly and with no hassle. Recommended."
Load More Recommendations
View web profile
Get Quotes
My Jobs
Directory
Menu


Search
Search Australia's largest home improvement Directory
Find
Eg. Plumbers, Architect
Near
Eg. Glebe, 2010
Search
Popular Searches
Builders
Electricians
Blinds
Bathroom Renovations
Carpenters
Air Conditioning
Get Quotes
My Jobs
Directory
Menu


E. & H. Graham Plumbing Services
Send Message
phone
02 8785 5599
mobile
0402 456 789
View web profile
Get Quotes
My Jobs
Directory
Menu


Gas Fitters Job
Posted: 3 Jul 2014
Businesses
Job Details
Job Description
Job ID: 147399
Need materials both timber and metal quote on a pergola with measurement: 5m x 8.5m x 6m (h x w x d).
Type of pergola job:Build new pergola
Job Details
Approx size of pergola: More than 30sqm
Style of Pergola: Flat Roof
Pergola material: Metal
Do you have materials? No - I will also need materials supplied.
Do you have plans for this job? No
Do you have council approval for this job? No
Do you also need a Deck or Patio? Yes, please find me trades to help
Budget: $1,000 - $10,000
What is the status of your job? Planning & Budgeting
Start By: I need someone to contact

# What are the Differences?

**Wireframe** = Representation

**Mockup** = Shape/Size/Colors

**Prototype** = Function

(wireframes/mockups + interactions)

# Lo to Medium Fidelity

**Balsamiq** http://balsamiq.com/

**Flinto** https://www.flinto.com/

**Proto IO** http://proto.io/

**Moqups** https://moqups.com/

**Pop**. (iPhone/Android App)

**Mockups.me** http://www.mockups.me/

**App Cooker** http://www.appcooker.com/

**Fluid UI** https://www.fluidui.com/

**UX Pin** http://uxpin.com/

# Medium to High Fidelity

**Axure** http://axure.com

**OmniGraffle** http://www.omnigroup.com/omnigraffle/

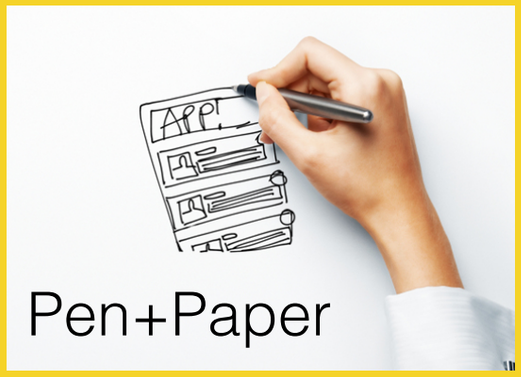
**InVision** http://www.invisionapp.com/

**Justinmind** http://www.justinmind.com/

**ProtoShare** http://www.protoshare.com/

| TOOL | TIME/SPEED | FIDELITY | COLLABORATION/ SHARING | USABILITY TESTING | SUPPORT | INTERACTIONS/ GESTURES | ANIMATIONS | DEVICE TESTING |
|---|---|---|---|---|---|---|---|---|
| **Briefs** | 120 min | Above Average | Low | Average | Low | None | Average | High |
| **Flinto** | 5 min | Above Average | Average | Average | Low | Low | Average | Above Average |
| **InVision** | 10 min | Average | High | Average | Above Average | Low | None | None |
| **proto.io** | 120 min | Above Average | High | Average | Above Average | High | Average | Average |
| **Axure** | 30 min | Above Average | Average | Average | High | Average | Above Average | Low |
| **Protoshare** | 40 min | High | High | Average | High | Low | High | Low |
| **Solidify** | 20 min | Average | High | High | Above Average | None | None | Above Average |
| **Easel** | 15 min | Average | High | Average | High | None | None | Low |
| **Justinmind** | 40 min | Above Average | Above Average | Average | High | High | Above Average | Above Average |
| **Fluid** | 45 min | Above Average | Above Average | Average | Average | Above Average | Above Average | Above Average |

## Wireframes




balsamiq

## Prototypes

Ps + invision

## Mockups

Ps

JUST IN MIND

B

# My Process

**Pen + Paper**

**Wireframe** - Balsamiq

**Lo-Fi Prototype** - Balsamiq + InVision

**HiFi Mockup** - Photoshop

**HiFi Prototype** - Keynote, Photoshop + InVision, Justinmind, Bootstrap

# Bootstrap
# vs.
# Foundation

# Robust Front-end Frameworks

UI components

Styled typography

JavaScript plugins

# Bootstrap - 2011

Search

stars>1

Search

Repositories 1,238,976

Code

Issues

Users

## Languages

| | |
|---|---|
| JavaScript | 245,114 |
| Python | 129,574 |
| Java | 111,543 |
| Ruby | 104,574 |
| PHP | 94,916 |
| C | 58,433 |
| C++ | 51,946 |
| Objective-C | 43,543 |
| Shell | 35,668 |
| C# | 34,525 |

Advanced search Cheat sheet

**We've found 1,238,976 repository results**

Sort: **Most stars**

### twbs/bootstrap

CSS ★ 89,836 ⑂ 37,963

The most popular HTML, CSS, and JavaScript framework for developing responsive, mobile first projects on the web.

Updated an hour ago

### vhf/free-programming-books

★ 46,586 ⑂ 10,783

Freely available programming books

Updated 3 days ago

### angular/angular.js

JavaScript ★ 44,880 ⑂ 20,622

HTML enhanced for web apps

Updated 21 minutes ago

### mbostock/d3

JavaScript ★ 44,266 ⑂ 11,758

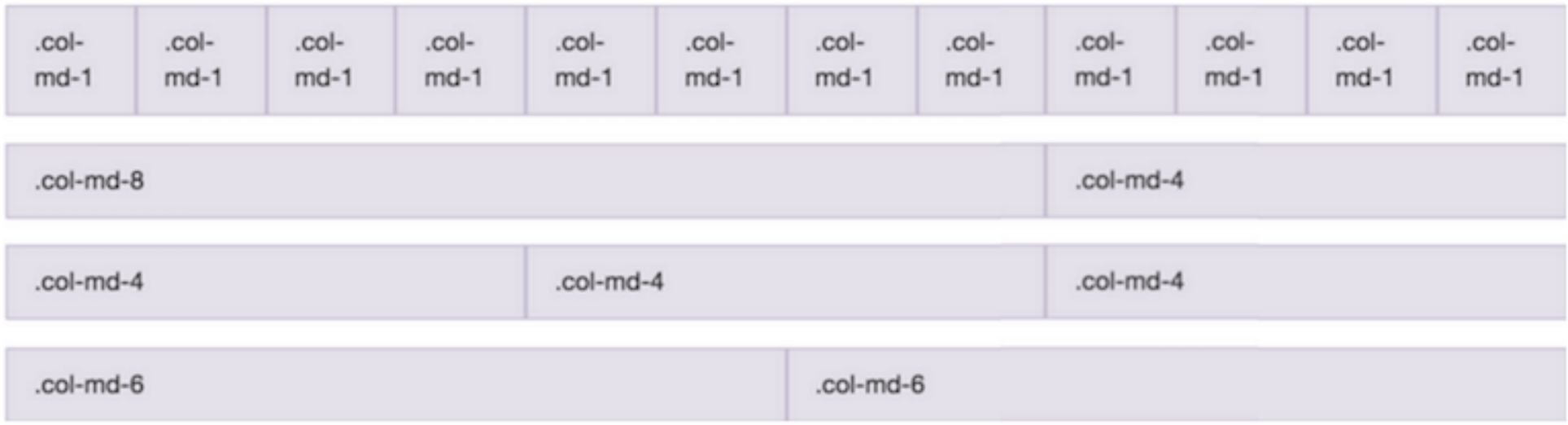
A JavaScript visualization library for HTML and SVG.

# Bootstrap vs. Foundation

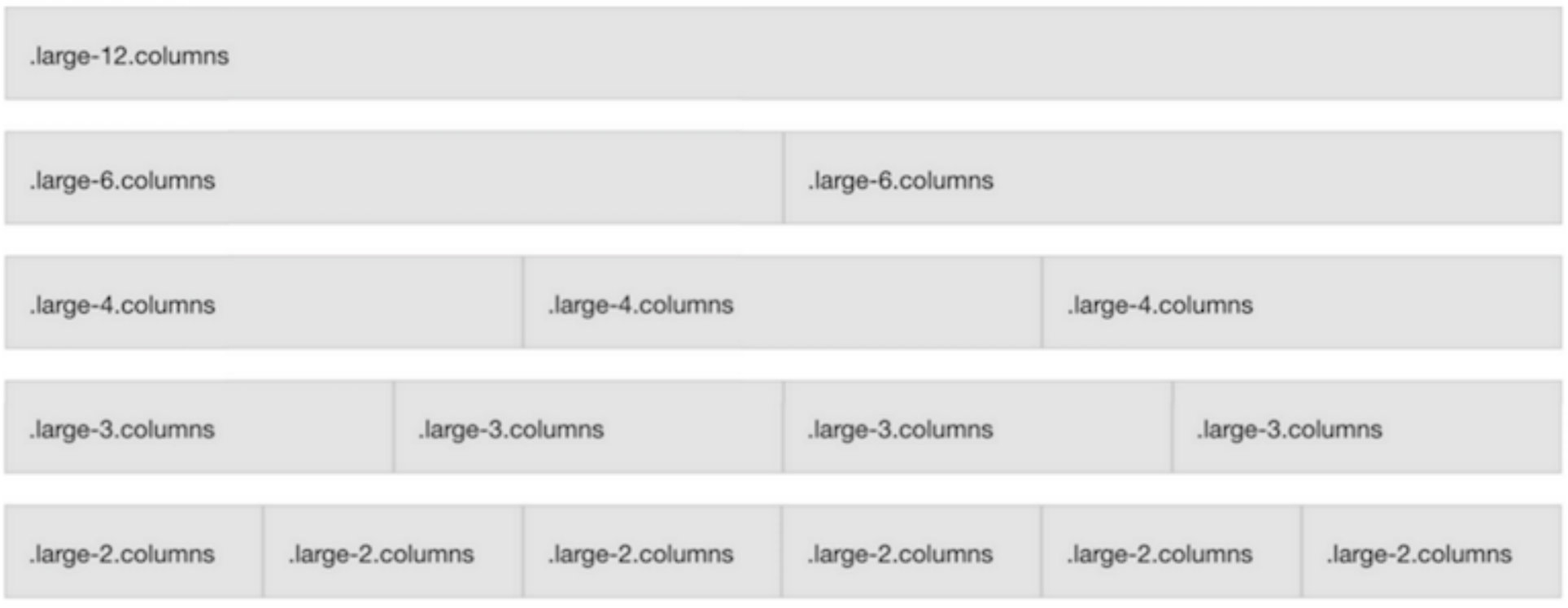
| | | |
|---|---|---|
| **Version** | 3.3.4 | 5.5.2 |
| **Date of last release** | March 16, 2015 | April 30, 2015 |
| **Stars on Github** | 82,000+ | 20,000+ |
| **Tagged questions on Stack Overflow** | 41,000+ | 3,300+ |
| **Browser support** | Chrome (Mac, Windows, iOS, and Android)Safari (Mac and iOS only)Firefox (Mac and Windows)Opera (Mac and Windows)IE8+ | Chrome (Mac, Windows, iOS, and Android)Safari (Mac and iOS only)Firefox (Mac and Windows)Opera (Mac and Windows)IE9+ |
| **Sizing units** | Pixels | rems |
| **LESS** | Yes | No |
| **Sass/scss** | Yes | Yes |
| **File size** | 14 files at 1019 KB | 30 files at 936 KB |
| **Grid setup** | 12 column layoutFluid and fixed | 12 column layoutFluid, block and centering available |

**all info based on time of writing, June 2015*

# Bootstrap vs. Foundation: Grids

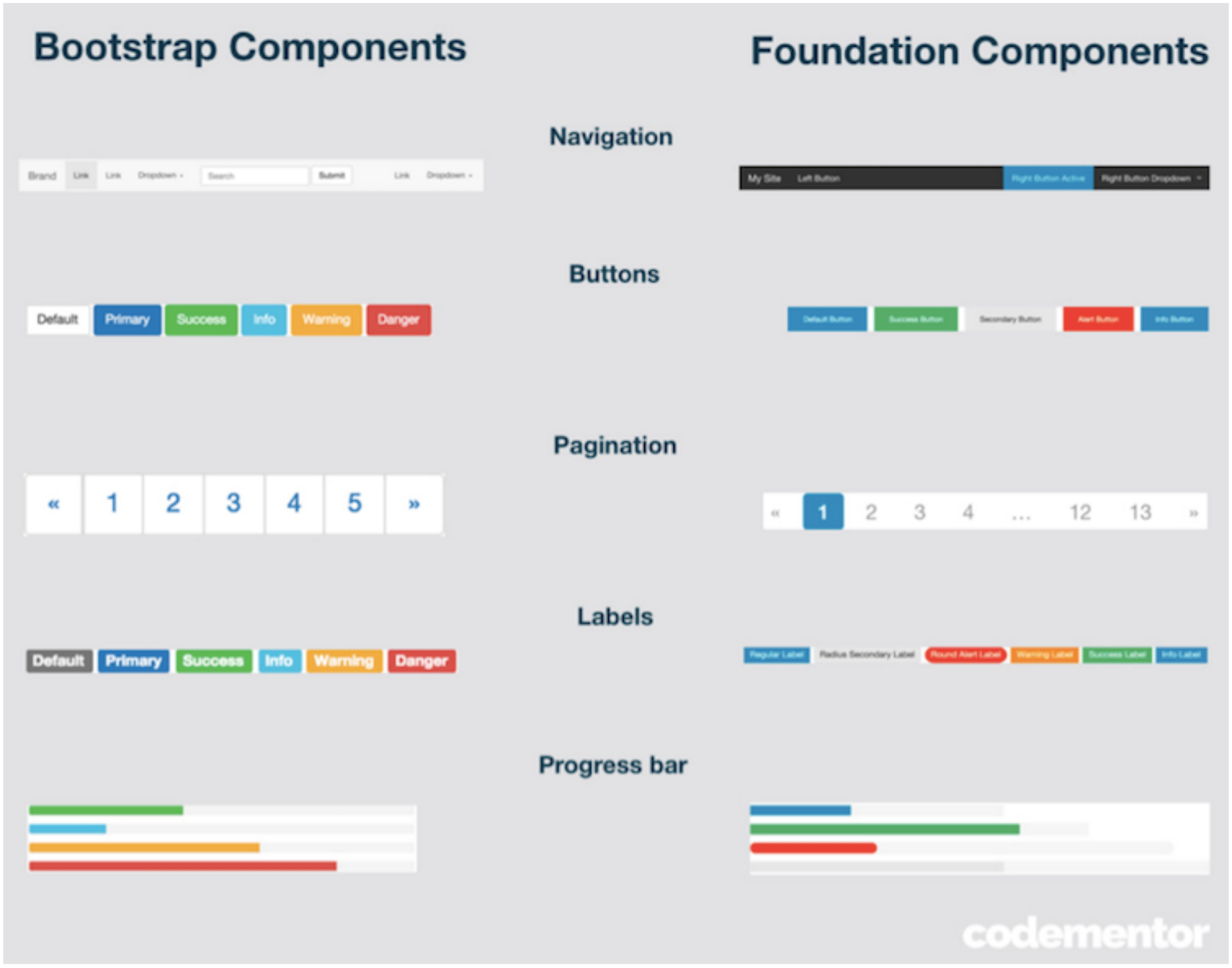



*Bootstrap Grid Example*




*Foundation Grid Example*

# Bootstrap vs. Foundation: Grids



# Understanding the Grid

Let’s play with the grid:

github.com/caterinasworld/rapid-prototyping-workshop/tree/master/bootstrap-grids

# Bootstrap

# Documentation

getbootstrap.com/components/

# Bootstrap Templates

startbootstrap.com/template-categories/all/

# Exercise File

github.com/caterinasworld/rapid-prototyping-workshop/tree/master/bootstrap-step0

# Foundation

# Documentation

foundation.zurb.com/sites/docs/

# Foundation Templates

foundation.zurb.com/templates.html

# Exercise File

github.com/caterinasworld/rapid-prototyping-workshop/tree/master/foundation-step0

# Credits

Bootstrap 3 vs. Foundation 5: Which Front-end Framework Should You Use?

www.codementor.io/css/tutorial/bootstrap-3-vs-foundation-5-front-end-framework-comparison

# Questions