SUMMER OF TECH 2017

Mobile First Development

Logan Elliott - @L0gyb

I am a Full stack developer with experience doing:
Angular, C#, React, React Native, CI/CD…

I work at Vista Entertainment Solutions

Mobile First Development!

Who has made a desktop website/app?

Who has made a native app?

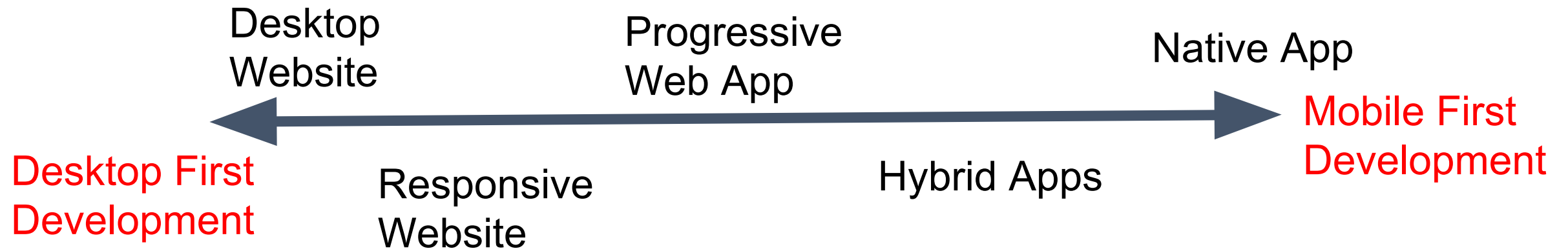Who has never used HTML/CSS/JavaScript?

Where is Mobile development going?

Native apps are dead

Progressive Web Apps are the future

.* First Development

Desktop
Website

Progressive
Web App

Native App

Mobile First
Development

Desktop First
Development

Responsive
Website

Hybrid Apps

Desktop Website

Why?
- No mobile users
- Usually made before mobile!

Pros:
- Cheap

Cons
- Not responsive to screen size
- Usually has pages you have to click links to get to

Result: Poor mobile experience!

Example: http://www.sailone.co.nz/

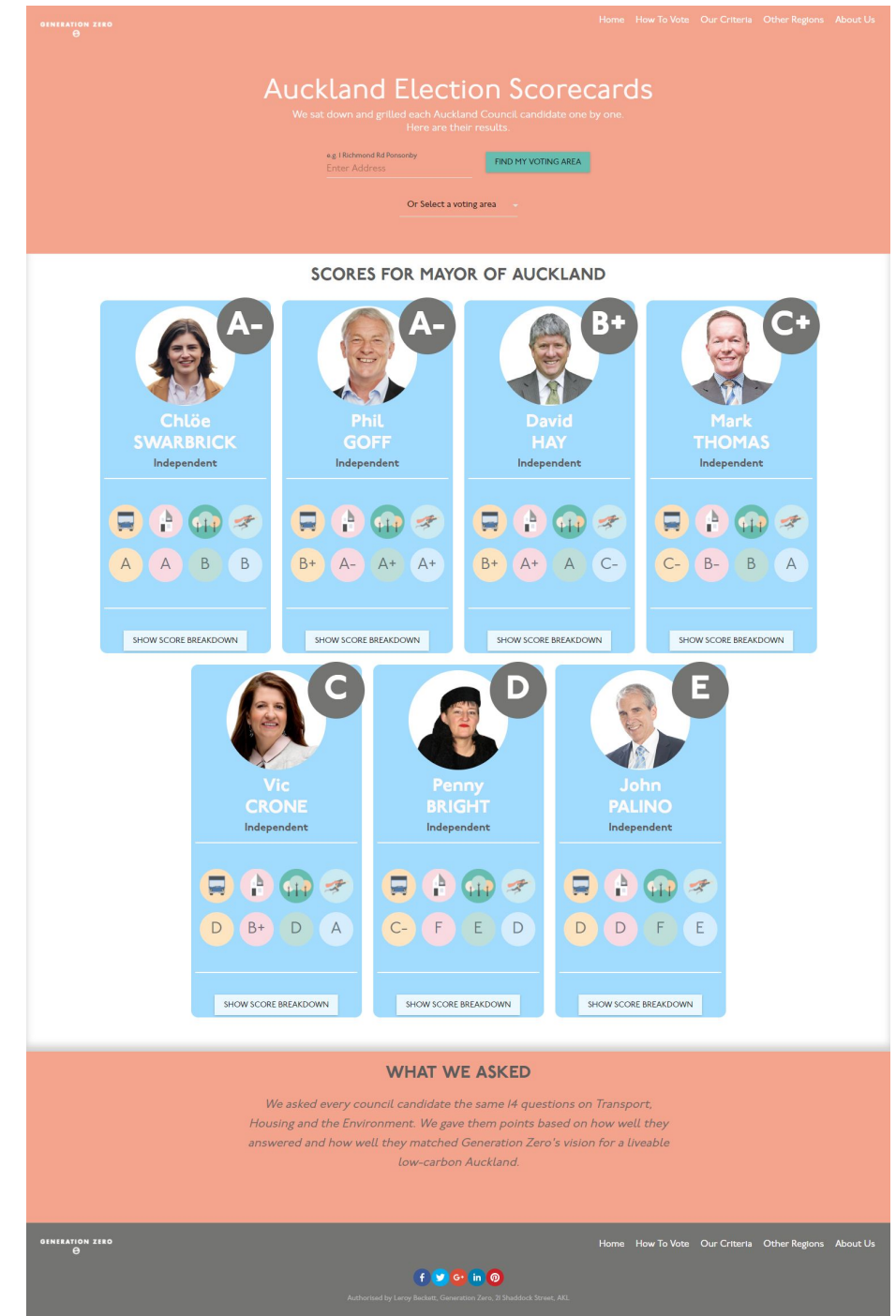# Responsive Website

Why?
- You want mobile users…

Pros:
- Changes to suit your screensize
- Can be a Single Page App
  - Interactive rather than url based
- ~Good~ experience on mobile

Cons:
- Quality can vary a lot
- Expensive because you still might have to make an app
- Bad ones typically don't have the same features as the desktop site :(

Result: Useable on mobile, could be better

Example: http://aucklandelections.nz/

Making a website responsive in css

```scss
.candidate-breakdown {
 width: 616px;
 border-radius: 12px;
 padding-bottom: 8px;

 @media screen and (max-width: $small) {
   width: 300px;
 }
}
```

This makes the breakdown section of the card 300px wide instead of 616px wide

Simple example making a website responsive in javascript

```javascript
const screenSize = window.innerWidth;
const desktopSize = 700;
const tabletSize = 350;
const mobileSize = 200;
if (screenSize > desktopSize) {
    return <div >
        Desktop View!
    </div>
} else if (screenSize > tabletSize) {
    return <div >
        Tablet View!
    </div>
} else {
    return <div >
        Mobile View!
    </div>
}
```

This renders a different sized div depending on how big the screen is

https://jsfiddle.net/m1cm5L3d/5

Real life Javascript mobile/tablet responsive design
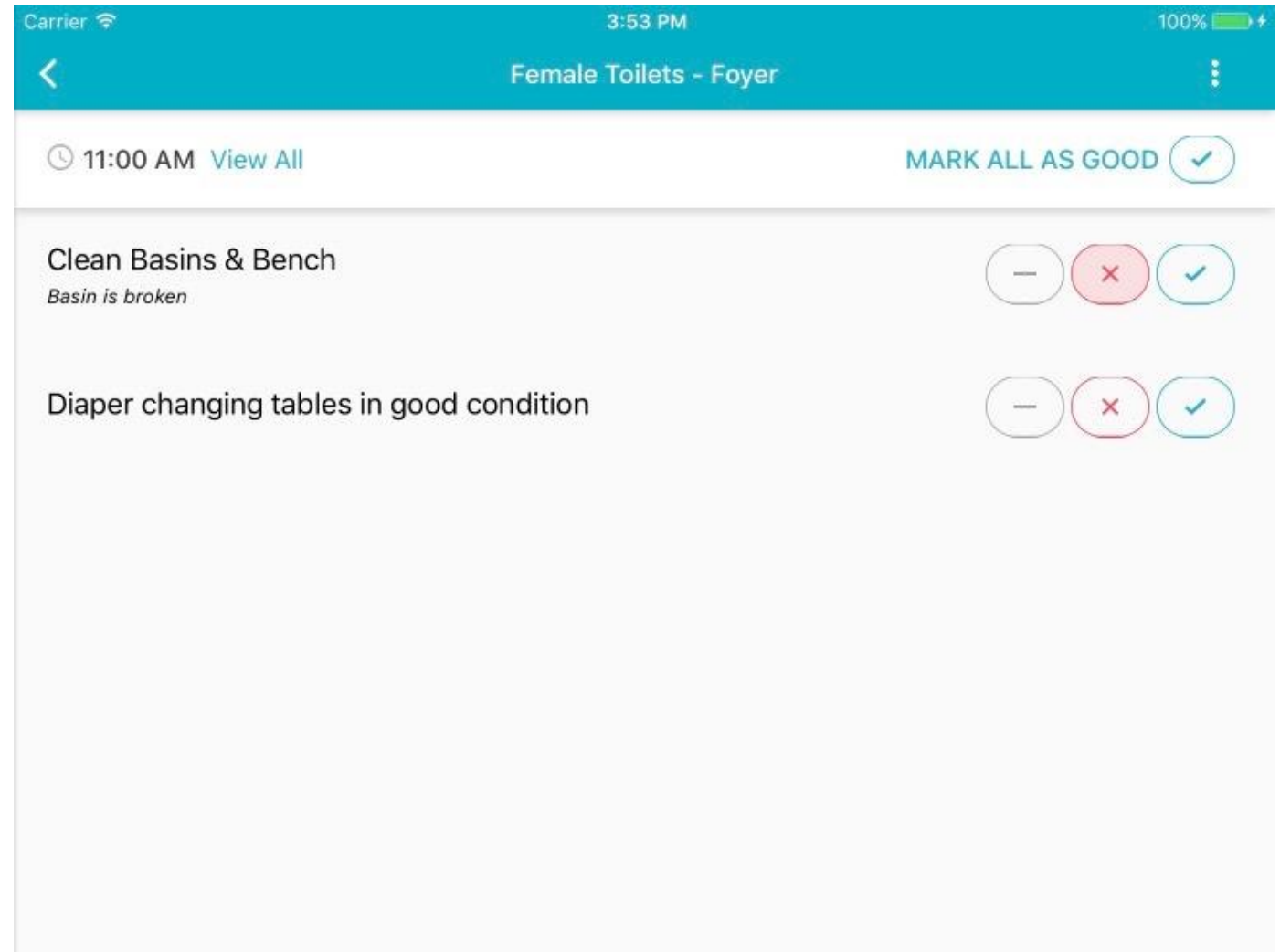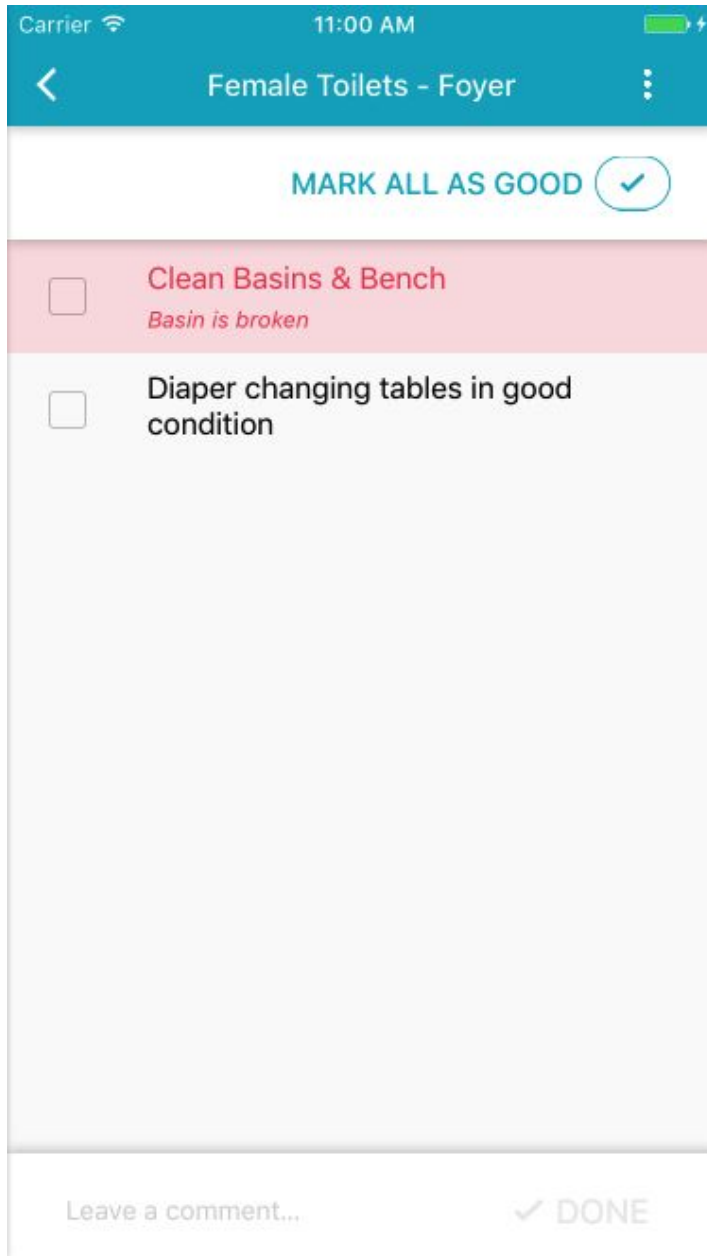
Native (IOS/Android/Windows)

Why?
- You really want mobile users

Pros:
- Changes to suit your screensize/device
- Can use phone hardware
- Great user experience

Cons:
- Expensive, you need to make per platform
- You still need a website
- Very complicated dealing with lots of different versions/devices

Result: Really good experience on mobile, but quite time consuming to make

Example: Twitter, Gmail, most apps you use

Hybrid Native App (React Native/Ionic)

Why?
- You want mobile users but aren't made of money/time

Pros:
- Changes to suit your screensize/device
- Can use phone hardware
- Great user experience
- Build once run anywhere™®
- Hypothetically can share code with website

Cons:
- You still need a website
- Very complicated dealing with lots of different versions/devices
- Still need some knowledge of native apps (e.g. Android/IOS permissions)
- Somewhat bleeding edge
- Not very functionally complete… I hope you like writing libraries
- Continuous Integration/Deployment/Testing is hard

Result: Really good experience on mobile, hard to develop, still need a website

.* First Development

Desktop
Website

Progressive
Web App

Native App

Mobile First
Development

Desktop First
Development

Responsive
Website

Hybrid Apps
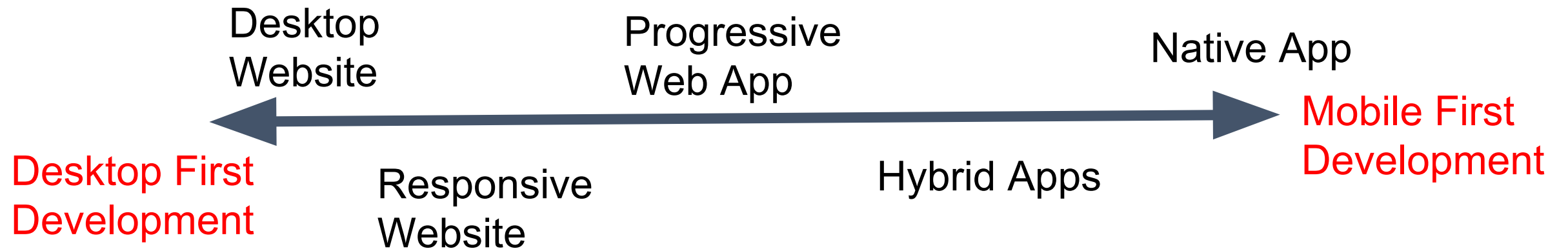
Progressive Web Apps

Why?
- You want to make mobile & desktop users happy

Pros:
- Changes to suit your screensize/device
- Great user experience
- Build once run anywhere™®
- Easy to deploy & update
- mostly uses existing technology, don't need to reinvent the wheel for libraries
- Hardware control

Cons:
- Safari doesn't really work...
- Bleeding edge

Result: Really good experience on mobile, doesn't work everywhere yet

Example: https://pwa.rocks/
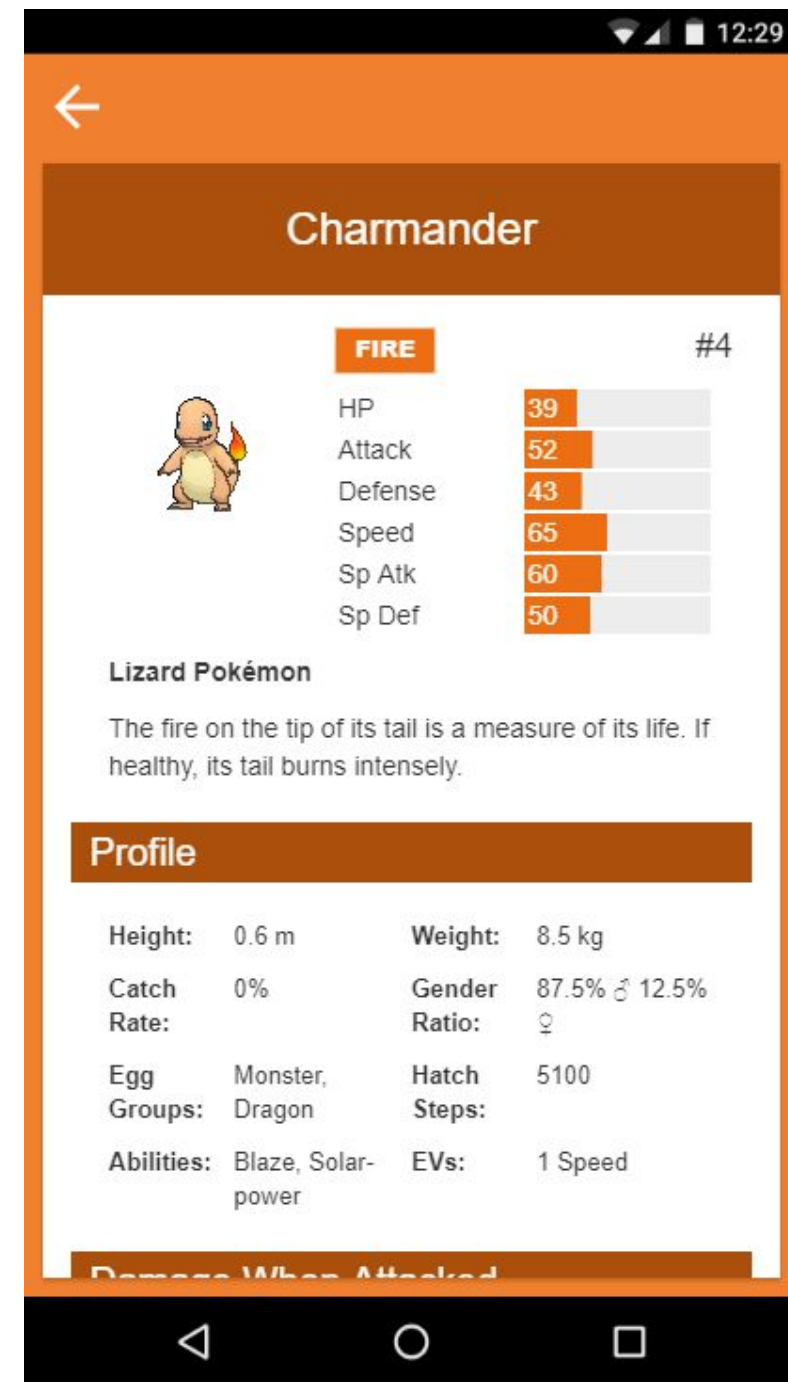
Why isn't everyone doing a Progressive Web App?

Native apps are almost* dead

Currently Safari doesn't really support most of the best parts of progressive web apps.

https://whatwebcando.today/

https://caniuse.com/#search=getUserMedia

https://jakearchibald.github.io/isserviceworkerready/index.html

Mobile App comparison slide

	Great User Experience	Build Once run everywhere	Complex Cross Platform	Bleeding Edge	Hardware support
Desktop Website	N	M	N	N	N
Responsive Website	M	M	N	N	N
Progressive Web App	Y	Y	N	Y	M
Hybrid App	Y	M	Y	Y	Y
Native App	Y	N	Y	N	Y

Why do we care so much about mobile users?
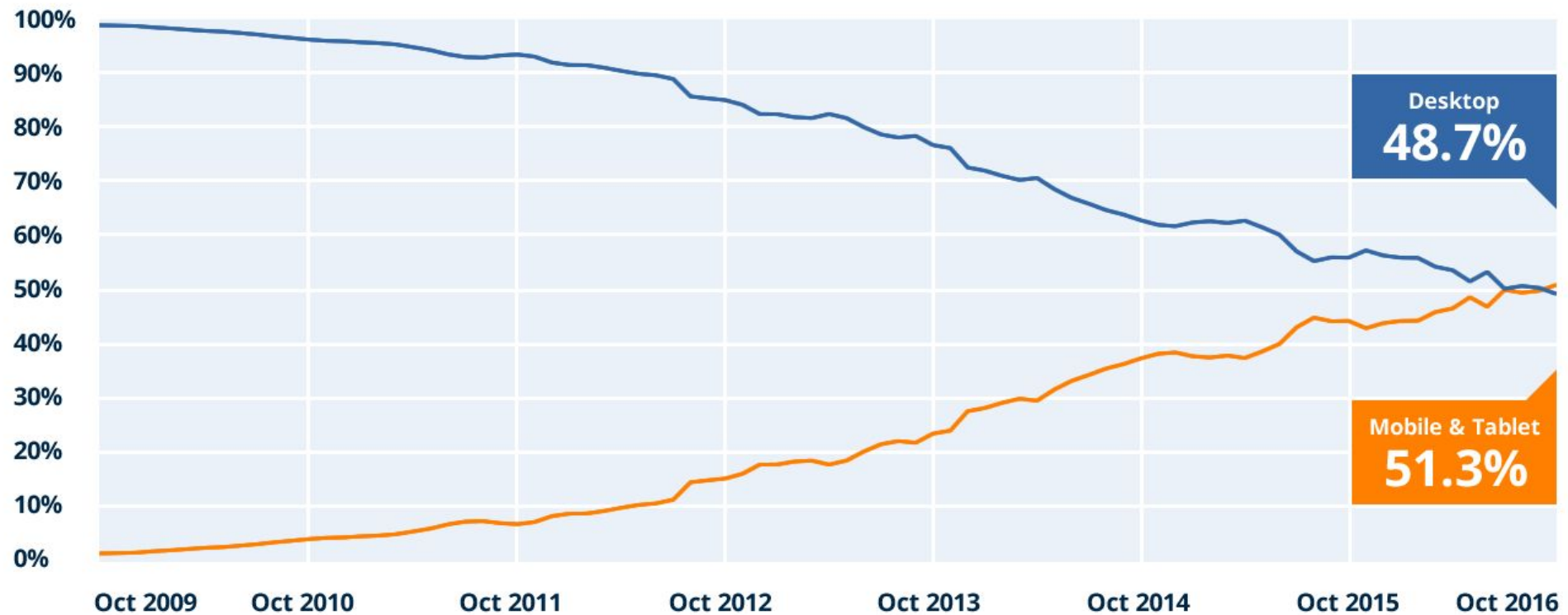
So what makes a website a PWA?

According to Google they are:

- **Reliable** - Load instantly and never show the downasaur, even in uncertain network conditions.
- **Fast** - Respond quickly to user interactions with silky smooth animations and no janky scrolling.
- **Engaging** - Feel like a natural app on the device, with an immersive user experience.

https://developers.google.com/web/progressive-web-apps/

Ok so what do I need to add to my website to achieve that?

See
https://developers.google.com/web/progressive-web-apps/checklist …

Or just use the automated tool lighthouse...
https://chrome.google.com/webstore/detail/lighthouse/blipmdconlkpinefehnmjammfjpmpbjk

Lighthouse in action

Lets see what I need to do to make my http://aucklandelections.nz/ a better PWA...

Lighthouse in action

Lets see what I need to do to make my http://aucklandelections.nz/ a better PWA…

Main things I am missing:

- Offline support
- Manifest file
- HTTPS

Making a new app

What to think about when making a
new app or modifying an existing one

Design is key!

New Zealand Film Festival App

http://www.loganelliott.space/nziffo/
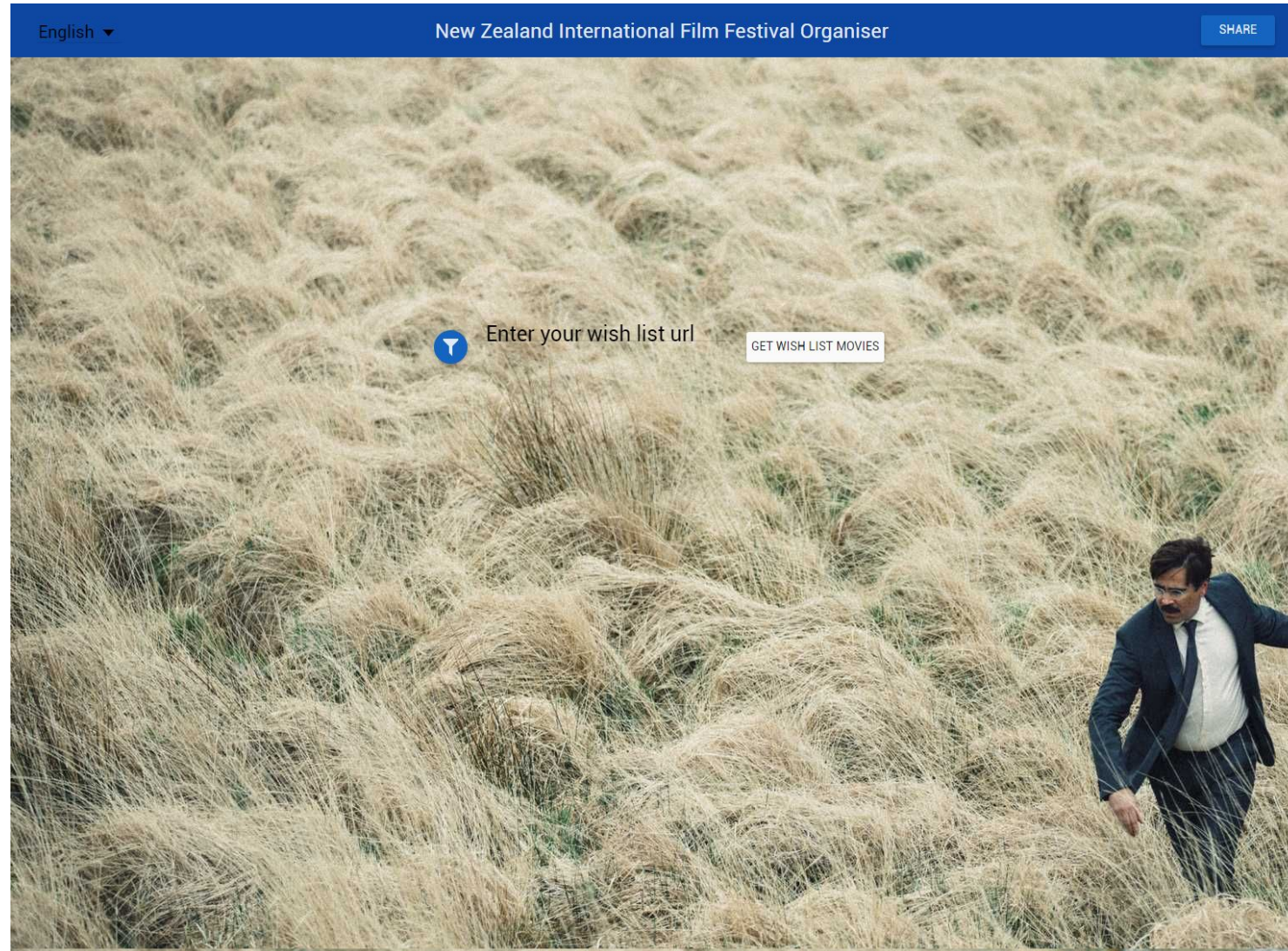
New Zealand Film Festival App

- Old app, old technology (Angular 1 □)
- No offline mode
- Average design

Mobile

NZIFFO

NZIFFO

Home

Lists

Language

About

Filters

Desktop

Langauge **New Zealand Film Festival** Lists About

Filters
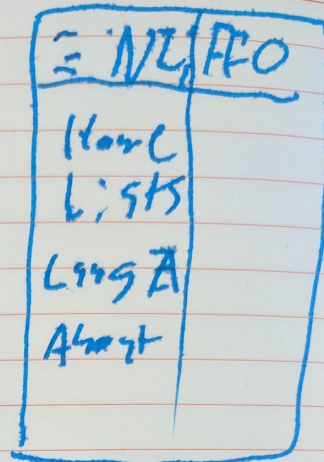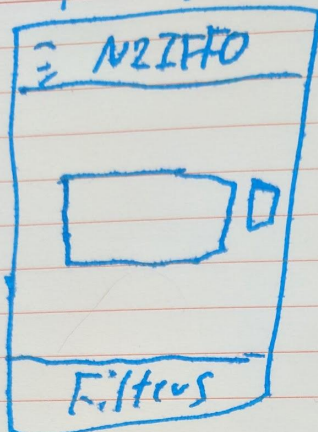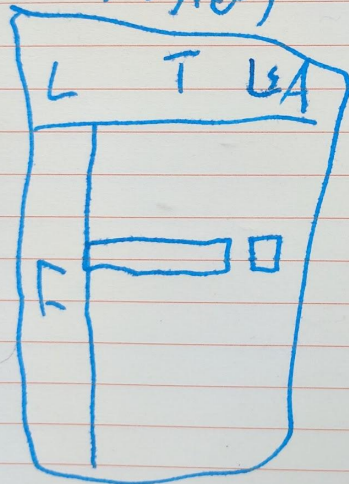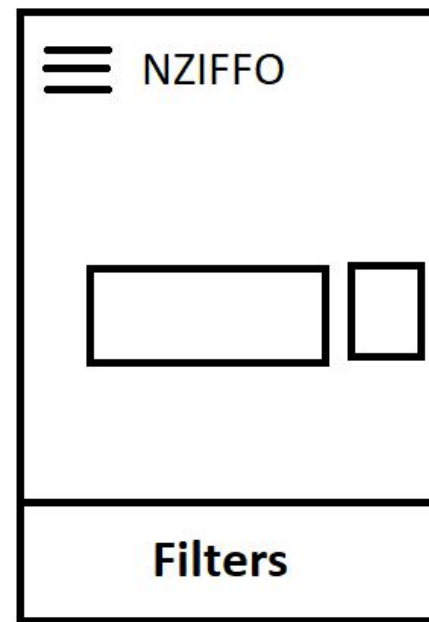
Design is first principle

What makes a good mobile first design?

- Be focused: More is not better

- Be your user: You should enjoy your apps experience

- Know your use case: What is the purpose of this app?

- RESPONSIVE

https://www.thinkwithgoogle.com/marketing-resources/experience-design/principles-of-mobile-app-design-engage-users-and-drive-conversions/

Design is first principle

Iterative vs Incremental

A good design is incremental, users will help you make it better!
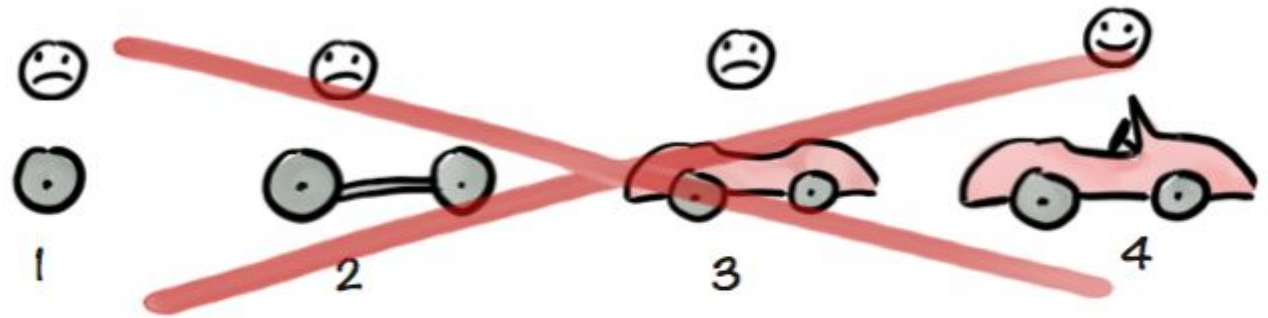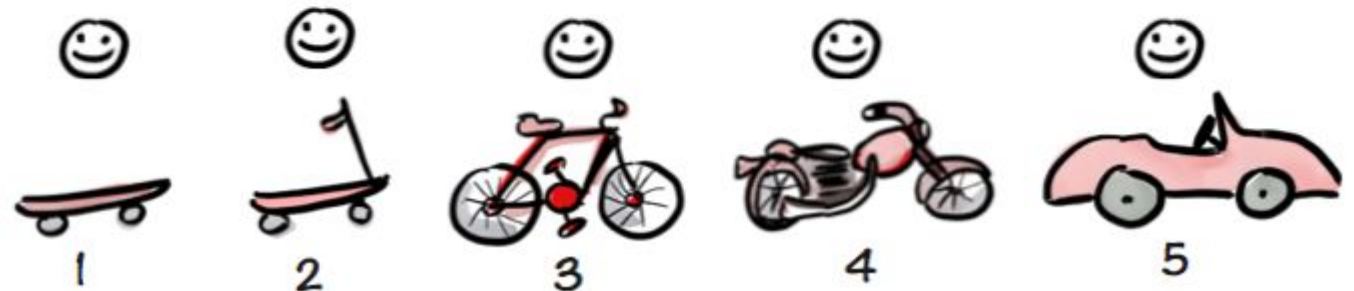
What does responsive mean?
Why care?

If your page doesn't load people aren't going to see it...

PATIENCE OF MOBILE WEB USERS

How long are users willing to wait for a site to load before they abandon the page? The following graph seeks to answer this question.

Observation: Most participants in the survey would wait 6-10 seconds before they abandon pages.

3% of those surveyed said that they would wait **less than one second** for a page to load before abandonment.

16-20 seconds

1-5 seconds

15%

16%

30%

16%

20%

6-10 seconds

20+ seconds

11-15 seconds
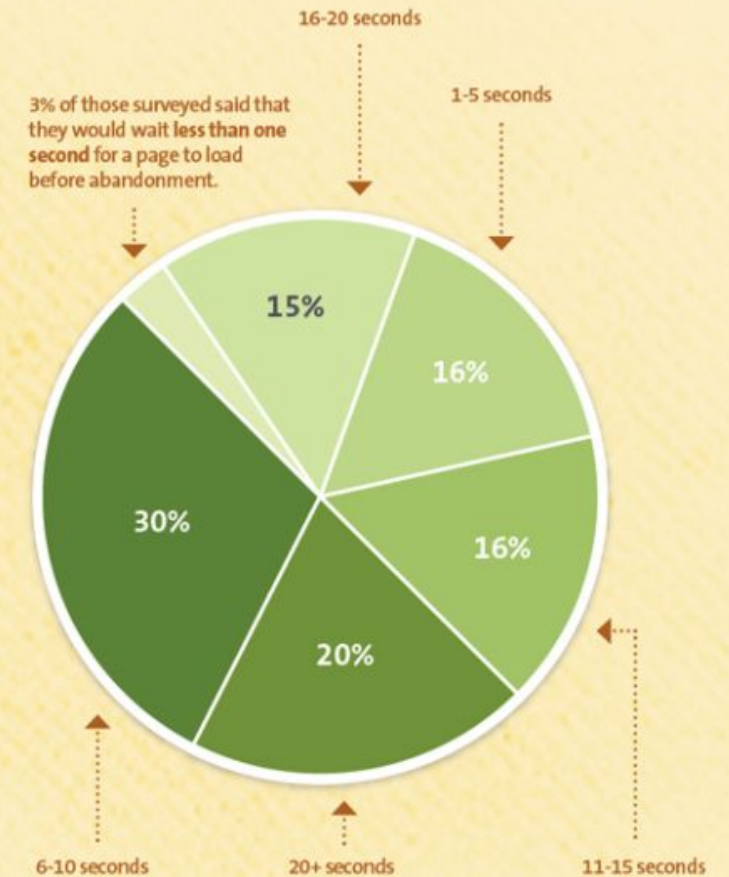
First Meaningful Paint
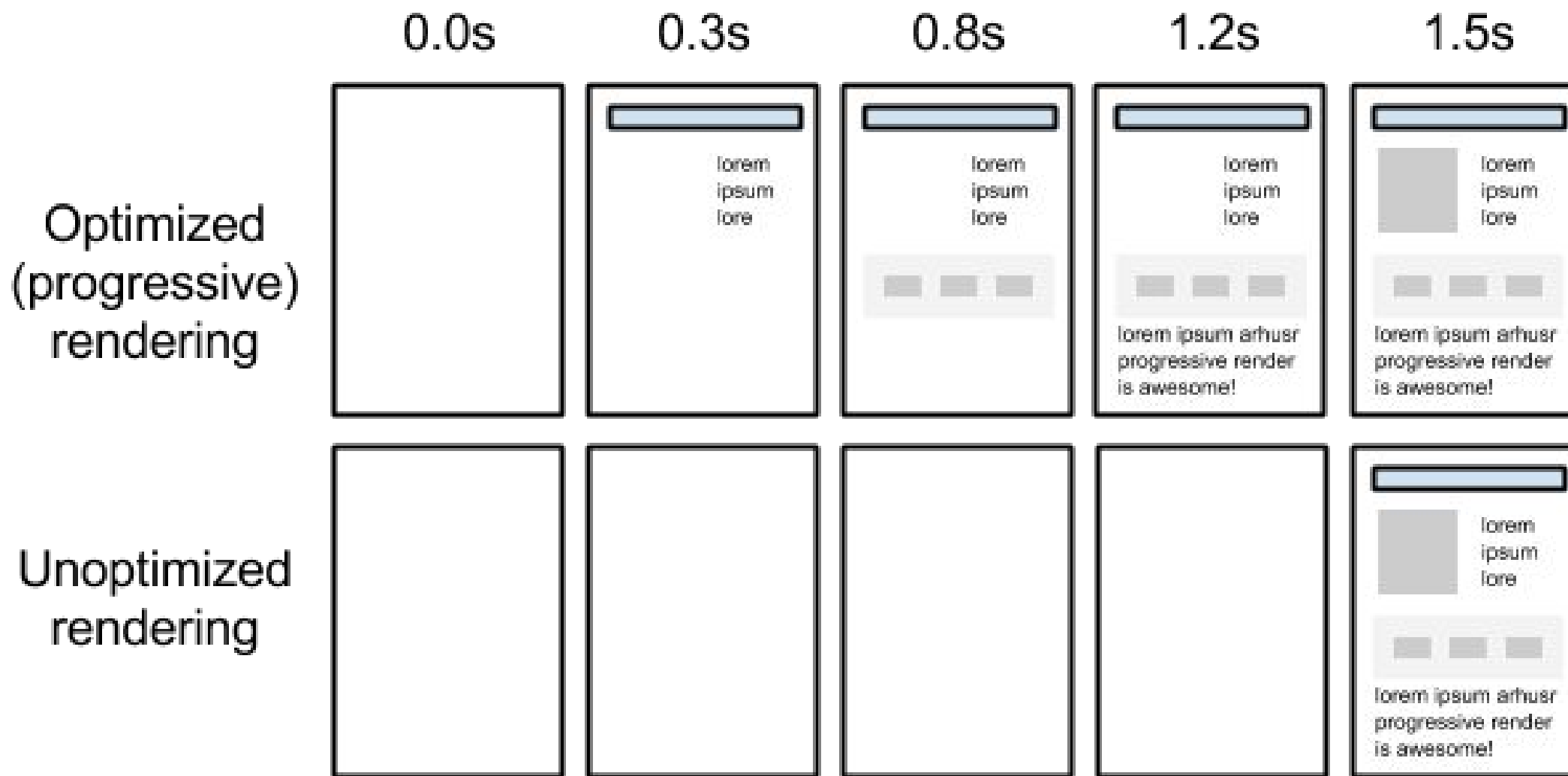
Slack is a really good example of this

Example!

https://www.pokedex.org/
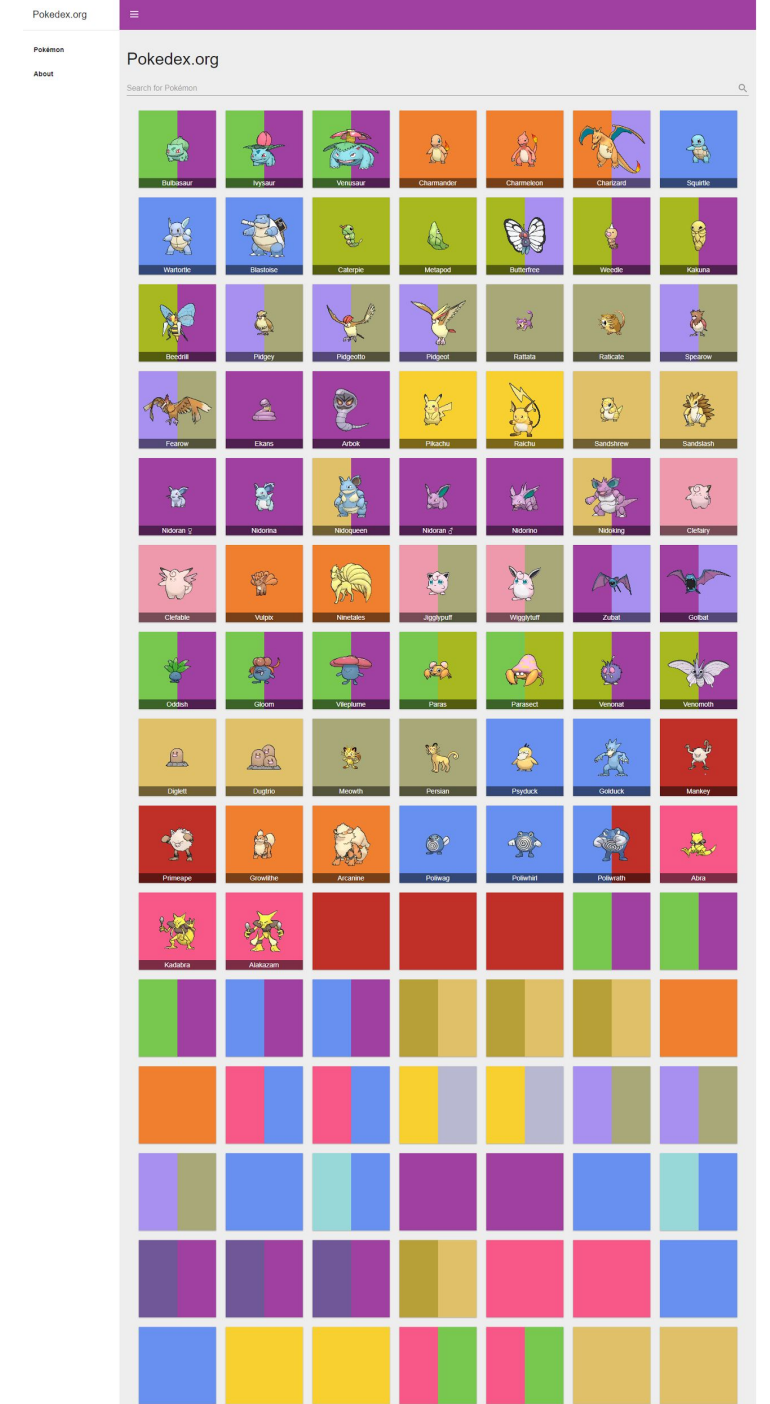
Development tools for webapp dev

https://developers.google.com/web/tools/chrome-devtools/

Mobile first development Summary

- Progressive Web Apps are the future for mobile

- Know your users, help direct their focus

- Good design is key to a good app

- A good design is incremental, users will help you make it better

Web app live demo and deployment

Let's make and deploy a super simple webapp!

Don't worry if there is a lot you don't understand.

npm

npm is a way to use other people's packages

https://docs.npmjs.com/getting-started/what-is-npm

https://www.impressivewebs.com/npm-for-beginners-a-guide-for-front-end-developers/

React

What is react?

React is a declarative, efficient, and flexible JavaScript library for building user interfaces.

https://facebook.github.io/react/

create-react-app

This is a super easy to use npm package that hides most of the hard painful stuff with front end development

https://github.com/facebookincubator/create-react-app

create-react-app

This is a super easy to use npm package that hides most of the hard painful stuff with front end development

following
https://github.com/facebookincubator/create-react-app#getting-started

We run

1. npm install -g create-react-app

2. create-react-app sot-app

3. cd sot-app

4. npm start

Simple example making a website responsive in javascript

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const screenSize = window.innerWidth;
const desktopSize = 700;
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    </div>
}
```

This renders a different sized div depending on how big the screen is

https://jsfiddle.net/m1cm5L3d/5

So we have a app running locally

That's all well and good but what if you want to show some else your new cool site?

Send a video…?

Github pages!

My Auckland Elections website is hosted on github

https://github.com/LoganElliott/aucklandelections/tree/gh-pages

Github pages info
https://www.thinkful.com/learn/a-guide-to-using-github-pages/

https://guides.github.com/features/pages/

Github pages

Let's host our new app on Github!

following
https://github.com/facebookincubator/create-react-app/blob/master/packages/react-scripts/template/README.md#github-pages

'`npm install gh-pages --save-dev`'

Make a github repository
https://github.com/new

initialise our current folder as a git repo 'git init'

'npm run deploy'

Browse to https://loganelliott.github.io/sot-app

Material Ui

Don't reinvent the wheel!

http://www.material-ui.com/#/

How do I learn about new and interesting front end tech?

Follow people on Twitter!!

I recommend these people

https://twitter.com/jaffathecake
https://twitter.com/sarahmei
https://twitter.com/ThePracticalDev
https://twitter.com/_ericelliott
https://twitter.com/dan_abramov
https://twitter.com/addyosmani
https://twitter.com/codinghorror
https://twitter.com/ireaderinokun
https://twitter.com/tomdale
https://twitter.com/noopkat
https://twitter.com/samccone
https://twitter.com/left_pad
https://twitter.com/kosamari
https://twitter.com/johanstn
https://twitter.com/TheAmyCode

Questions?

Logan Elliott	
Bootcamp Resources	I'll put my slides on GitHub after presentation
Extra Online Resources	See in slides
Extra Offline Resources	JS Meetup, React Meetup

Next steps after Mobile First Development Bootcamp
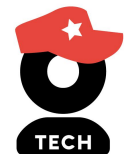
Should I get a Slack channel set up so you can all ask me questions?

Slack Channel for Q&A's: #<name>

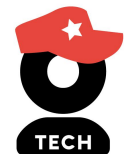# Our sponsors

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ACG SCHOOL OF DESIGN

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WAIKATO
Te Whare Wānanga o Waikato

Cigna

Key dates	Key events	You need…
August (weekend)	Hackfest (code & design)	Completed SoT profile with evidence of your project work. This is an invitation-only event. And DEFINITELY worth going to!
13 September (evening)	Wellington Meet & Greet	Completed SoT profile & rsvp asap!
20 & 21 September (9am-4pm)	Speed Interviews	Employers invite students they want to interview
4 October (10am)	Offers	*…GOOD LUCK!!!*
Mid Nov 2017 – Mid Feb 2018	Internships	

Key dates for SoT2017 students
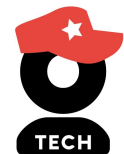
Register online or email us for more information:

summeroftech.co.nz | info@summeroftech.co.nz

@summeroftech #SoT2017 #SoTWLG #SoTAKL

www.facebook.com/summeroftech

Thank you!