Progressive Web Apps with VueJS

Make it simple!

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Current state in mobile software development

Mobile Web

- Easier to develop, maintain and support
- One app built for all platforms
- Relatively inexpensive
- Don’t take up storage on device

Native Mobile Apps

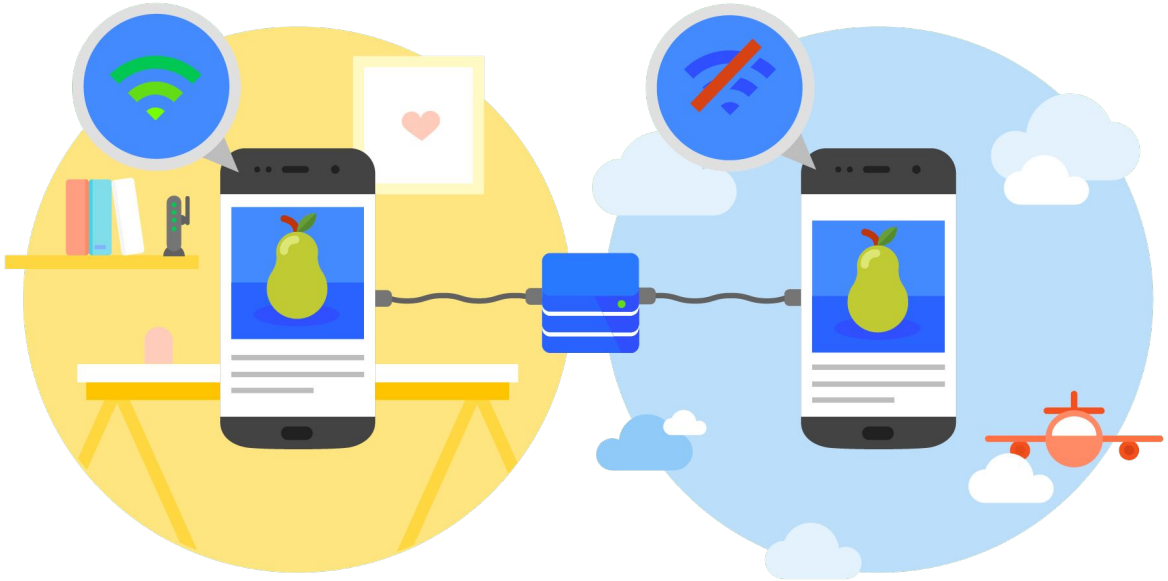
- Faster and more responsive
- More interactive and more functional
- More engaging with user
- Functional offline

What is a Progressive Web App?

Progressive Web Apps (PWAs) are web applications that load like regular web pages or websites but can offer the user functionality available only to native mobile applications

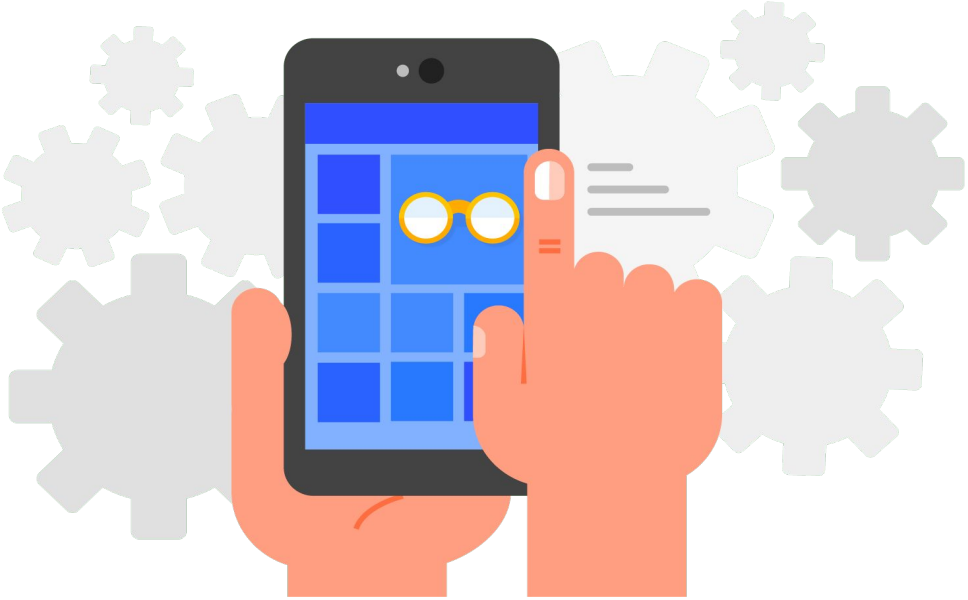
Why create a Progressive Web App?

A Progressive Web App is:



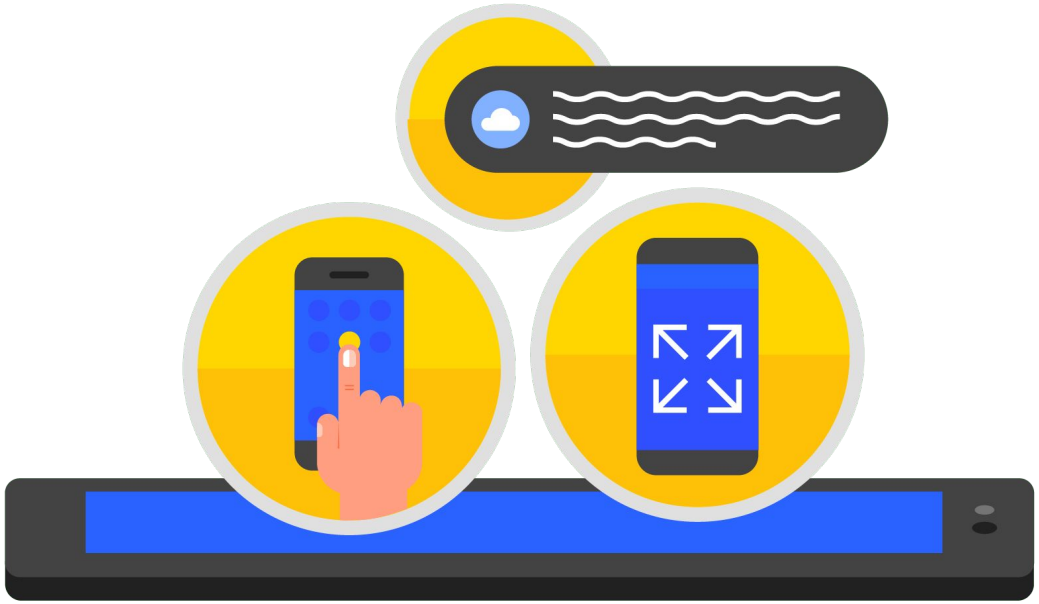
Reliable

Service workers allow work offline, or on low quality networks and at the same time reliable and “fresh” content



Fast

No janky scrolling or slow-to-respond interfaces, due to cached content



Engaging

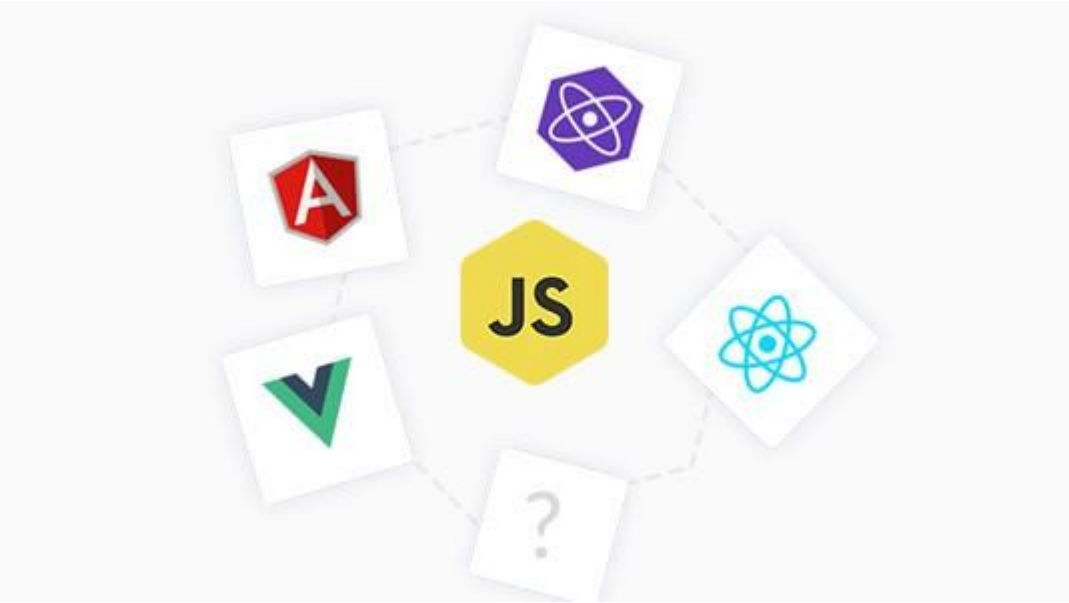
- Installable, kept on the user's home screen, without the need for an app store
- Immersive full screen experience
- Re-engage users with web push notifications

How to build a Progressive Web App?

We need the help of a tool to build a PWA.

This tool is often a JavaScript front-end framework.

But which framework?



VueJS framework

VueJS is a progressive JS framework for building user interfaces. Vue is:

➔ **Approachable**

Simple, but comprehensive

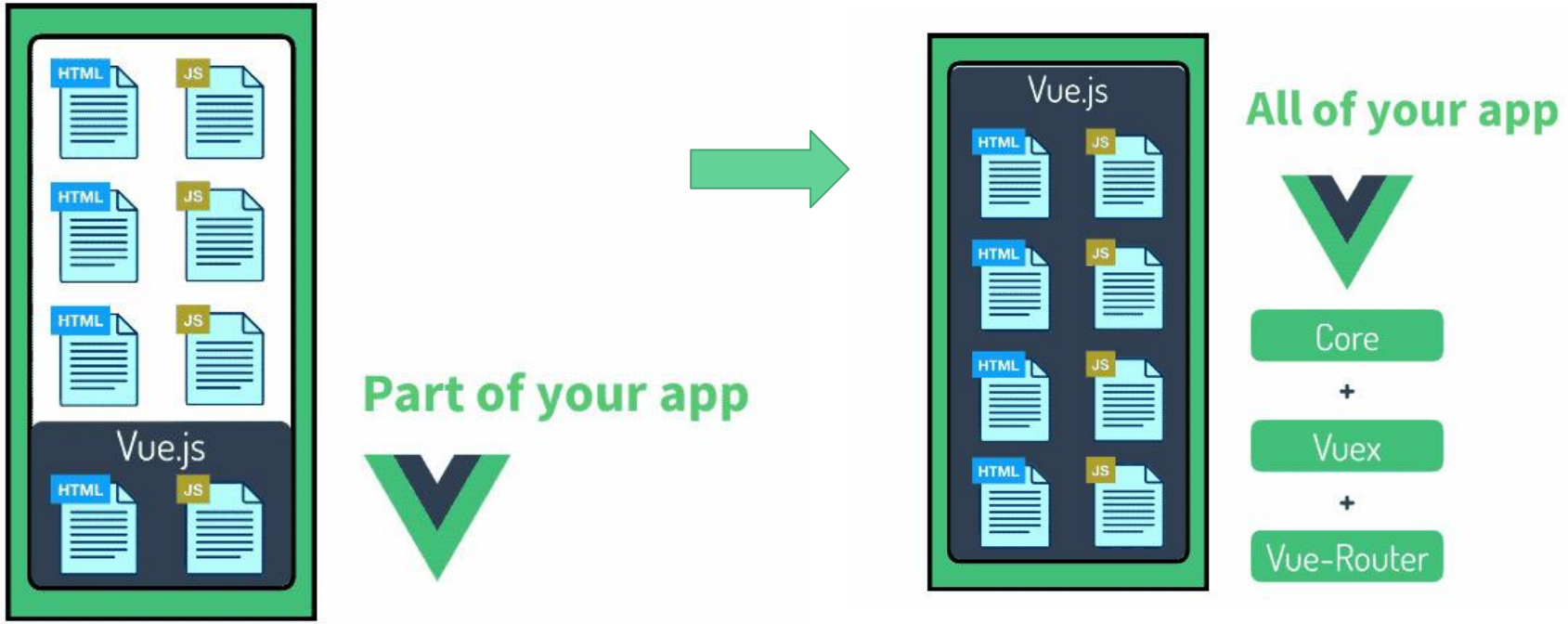
➔ **Versatile**

due to an incrementally adoptable ecosystem

➔ **Performant**

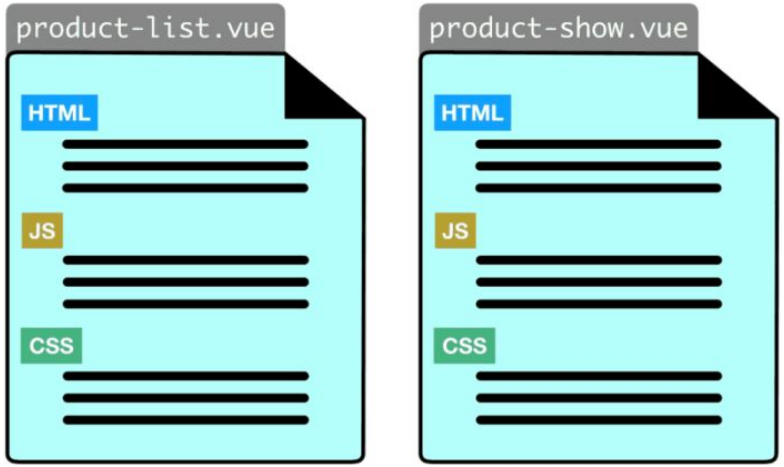
Lightweight and fast

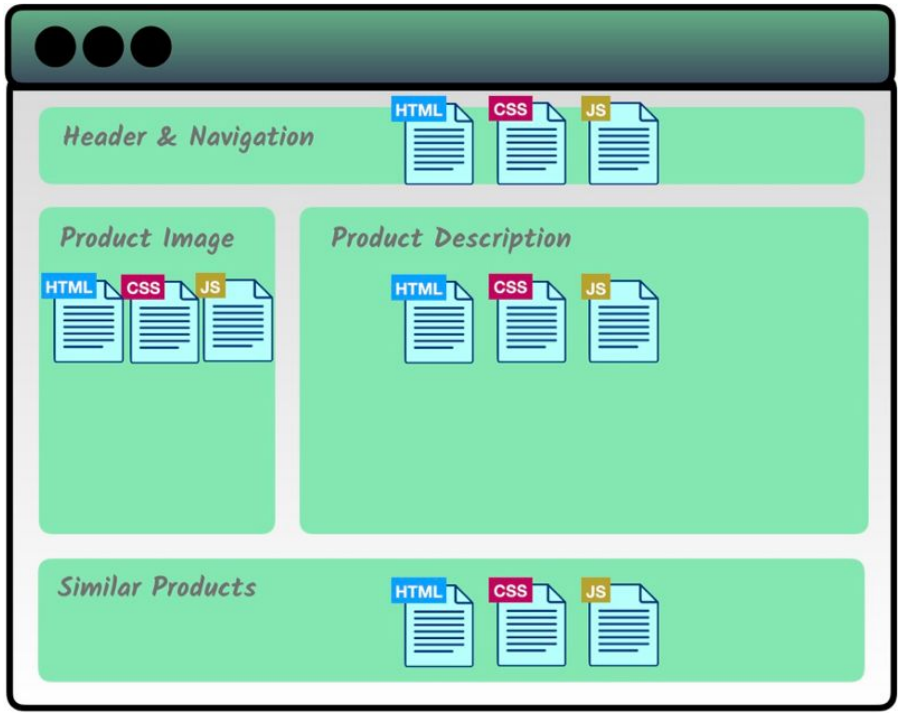
Vue JS: A Progressive Framework



Single File Components

Reusable components with a .vue extension, made possible with build tools such as Webpack or Browserify.





Why choose VueJS?

- Much easier to adopt comparing to other popular frameworks
- Use of Single File Components
- Vue embraces an Interface-First mentality
- Flexible, maintainable and scalable
- Documentation of VueJs is really helpful and comprehensive

- Small community
- Lack of some resources/libraries
- Lack of full English documentation

PWAs with VueJs

Creating a PWA with VueJS is similarly simple. Download official Vue CLI 3 and get started with command: `vue create`

```
mark@markOS:~/Projects/pwa_example$ vue create mypwa
```

```
Vue CLI v3.0.3
? Please pick a preset:
  default (babel, eslint)
❯ Manually select features
```

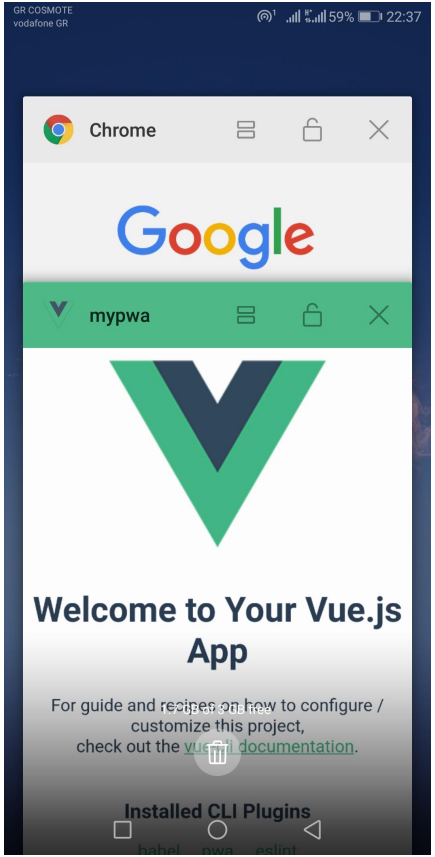
```
Vue CLI v3.0.3
? Please pick a preset: Manually select features
? Check the features needed for your project:
 ◉ Babel
 ◯ TypeScript
❯◉ Progressive Web App (PWA) Support
 ◯ Router
 ◯ Vuex
 ◯ CSS Pre-processors
 ◉ Linter / Formatter
 ◯ Unit Testing
 ◯ E2E Testing
```

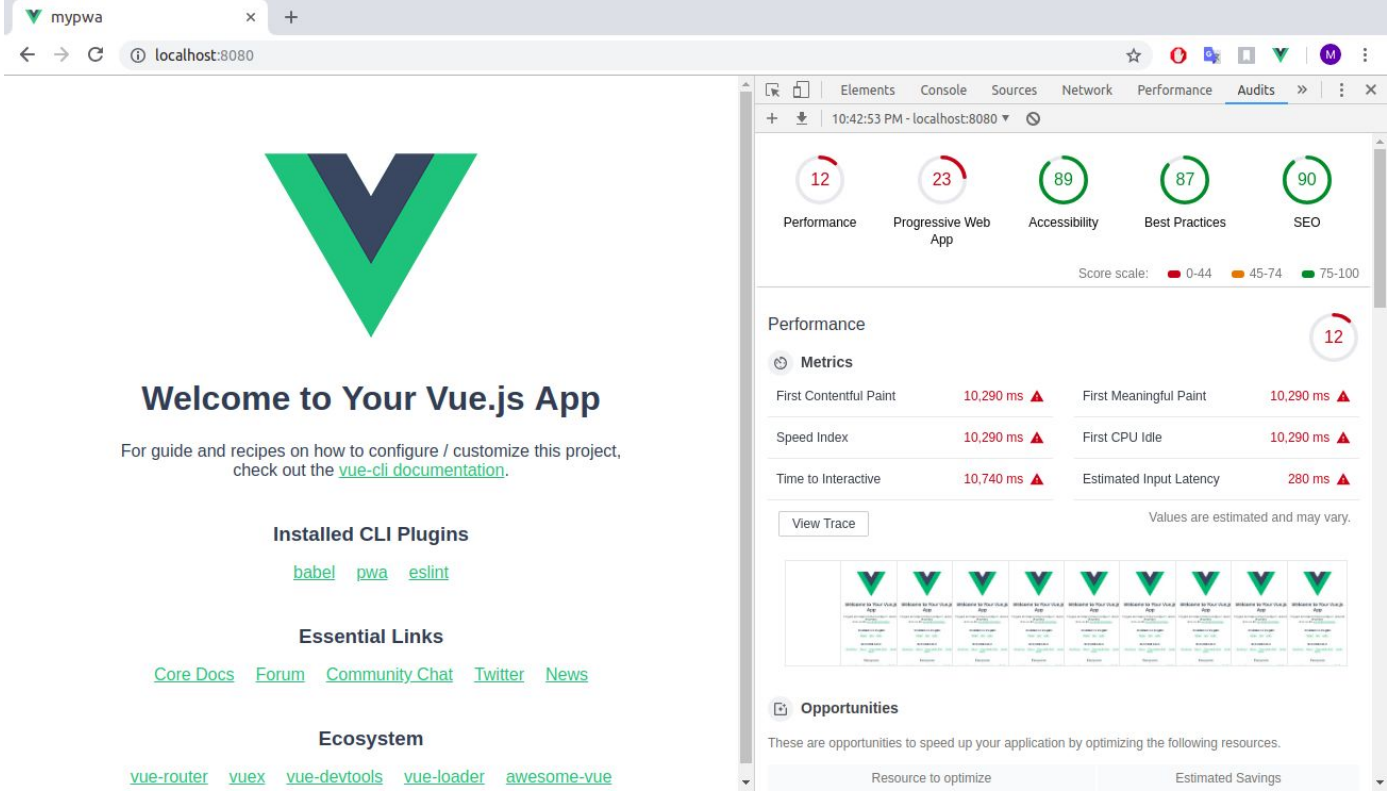
```
Vue CLI v3.0.3
✨  Creating project in /home/mark/Projects/pwa_example/mypwa.
🗃  Initializing git repository...
⚙  Installing CLI plugins. This might take a while...


> yorkie@2.0.0 install /home/mark/Projects/pwa_example/mypwa/node_modules/yorkie
> node bin/install.js

setting up Git hooks
done

added 1319 packages from 765 contributors and audited 14102 packages in 54.931s
found 0 vulnerabilities

🚀  Invoking generators...
📦  Installing additional dependencies...

added 4 packages from 1 contributor and audited 14107 packages in 20.752s
found 0 vulnerabilities

⚓  Running completion hooks...

📄  Generating README.md...

🎉  Successfully created project mypwa.
🗃  Get started with the following commands:

 $ cd mypwa
 $ npm run serve

mark@markOS:~/Projects/pwa_example$
```

npm run serve

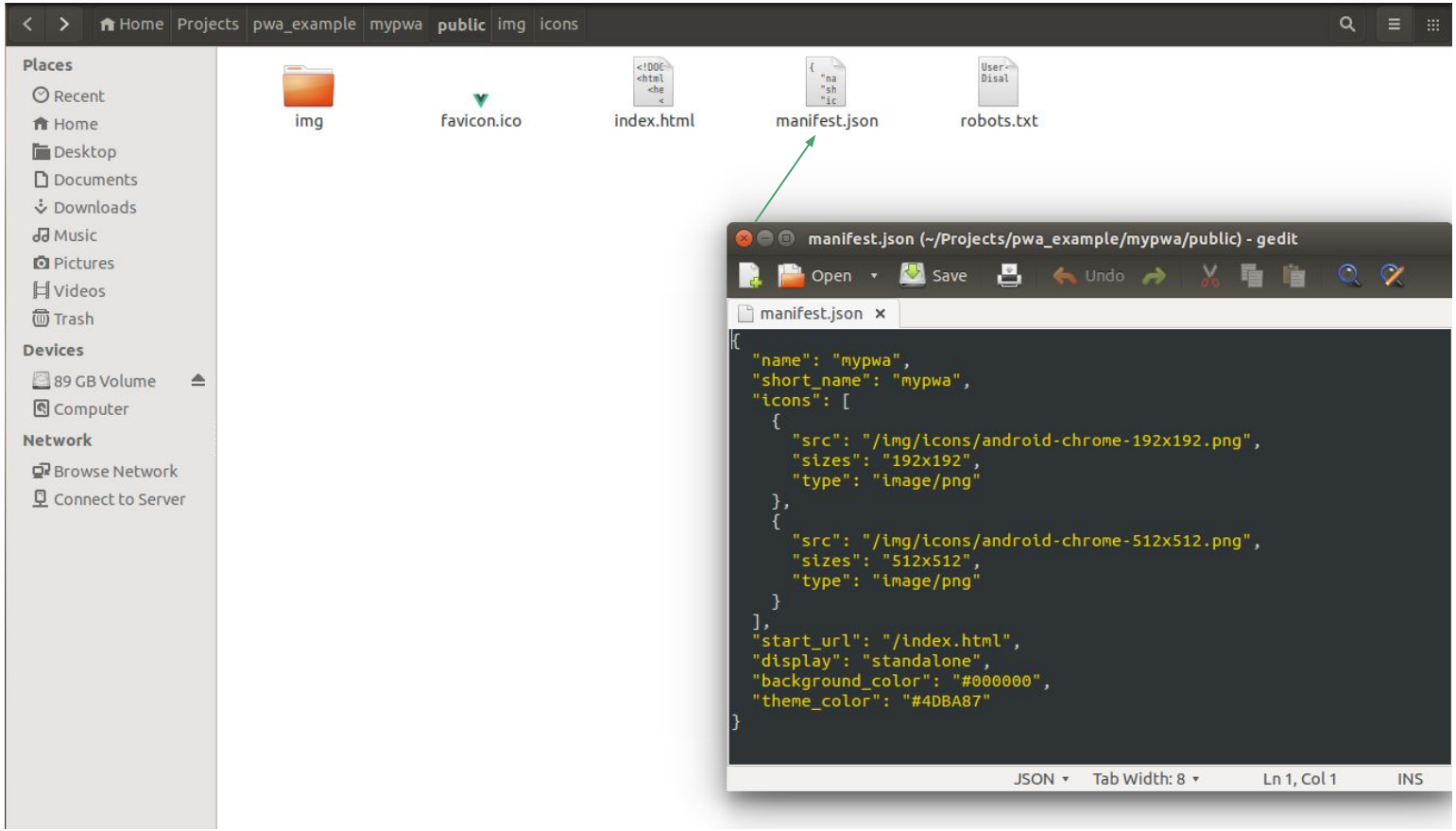
```
DONE  Compiled successfully in 6890ms


App running at:
- Local:   http://localhost:8080/
- Network: http://192.168.2.5:8080/

Note that the development build is not optimized.
To create a production build, run npm run build.
```

Just like a native app





Chrome Audits (Lighthouse) will help you make your PWA better



manifest.json file tells the browser about your app and how it should behave when 'installed' on the users mobile device or desktop.

References

https://vuejs.org/
https://en.wikipedia.org
https://developers.google.com/web/progressive-web-apps/
https://liquid-state.com/web-apps-vs-native-apps-which-is-best/
https://developers.google.com/web/fundamentals/web-app-manifest/
https://www.telerik.com/blogs/building-pwas-with-vuejs
https://buildfire.com/what-is-a-progressive-web-app/
https://medium.com/vue-mastery/why-43-of-front-end-developers-want-to-learn-vue-js-7f23348bc5be
https://www.agriya.com/blog/pros-and-cons-of-vue-js-framework/
https://medium.com/@dericksozo/want-to-get-things-done-and-ship-3-reasons-to-choose-vue-over-react-in-2018-8de3fe710211
https://medium.com/@TechMagic/reactjs-vs-angular5-vs-vue-js-what-to-choose-in-2018-b91e028fa91d
https://blog.francium.tech/why-choose-vuejs-8722cf88017f

Questions?