

Platform Selection

Frontend Technologies

- **React Native** allows us to have a single codebase that runs on both Android and iOS, reducing the amount of bugs, redundant code, and development time we need to invest. React Native is also supported by Facebook and a large open-source community, making it easy to find quality documentation online. Lastly, all team members know JavaScript already, so our learning is less steep.
- **React Navigation** will provide support for navigating between multiple screens. This feature isn't built into React Native and many developers have implemented open source solutions; however, React Navigation has now become the community standard. It is built using extensions to class React concepts, and is therefore easy to learn and apply in practice.
- **Expo** manages the runtime of our application during development with providing a command-line tool that lets us launch emulators, publish our app, and generate binaries for submission to the iOS and Android stores. It also exposes a SDK that gives us access to much of the phone's interface (cameras, locations, etc.) with a nicely abstracted JavaScript API.

Backend Technologies

- **Heroku** hosts both our server code and MongoDB instance on its cloud platform. It makes it easy to integrate our app deployments with new git commits from a command line tool, and we anticipate its free-tier to be sufficient for handling our app's usage requirements.
- **Node.js & Express** allow us to write server-side code entirely in JavaScript so that our entire app is powered by the same language. Express greatly simplifies the process of designing a web server/REST API using the Node.js platform, so it will reduce our development time and code complexity.
- **MongoDB** is a NoSQL database that will essentially allow us to store persistent data in the form of JSON documents. It is easily integrated with our Heroku backend and the JSON format is convenient to work with in JavaScript coding environments.

Languages & Tools

- **JavaScript** is quite simple yet powerful, and is widely used and supported by our other tools. We also already have experience developing in JavaScript, so our learning curve is smaller.
- **Git** is the industry-standard for version control and software collaboration. The project will also be hosted on GitHub for easy sharing and access.