
GBC NAVIGATION APP

GROUP T32

Jawad Butt

Mike Denton

Talha Sultan

Jason Thai

Technology Requirements

Database (NoSQL) - MongoDB	<ul style="list-style-type: none"> • Works on fly no schema required • No complex joins • It is easy to scale • Enables faster access of data • The team members are fresh and familiar with the technology as we just learned it.
Programming Language (Javascript) (TypeScript)	<ul style="list-style-type: none"> • Extended functionality to web pages • Platform independent without needing to compile the code. • Capability of object-oriented principles • Rich interface – easy to handle events, in our case: selecting the buildings, rooms and parking lots via clicking on images. • TypeScript allows for static typing to prevent dynamic typing issues on JavaScript
JavaScript runtime (NodeJs) - Backend	<ul style="list-style-type: none"> • Opensource and updated frequently • Easily scalable horizontally and vertically. • Process do their own thing, no need to create a large monolithic core. • Easily customized and extended. • Variety of opensource packages and tools available through the node package manager (npm).
Framework (Angular) - Frontend	<ul style="list-style-type: none"> • Opensource framework for Java script • MVC architecture, ensures higher reusability of components across the application. • Two-way binding reduces to write additional code so the Model and View can be synchronized easily. • The documentation of the framework is very detailed and available on the official website. • Ability to convert code to Native Script for smart phones
Framework (Native Script) - IOS and ANDROID	<ul style="list-style-type: none"> • Uses Angular, and JavaScript • Access to Angular data binding, dependency injection, reusable components • Use native components and has access to native device API Uses XML based markup language similar HTML • CSS style styling • Uses Node Package Manager for plugin Support • Large assortment of opensource plugins • Live syncing of code changes during development
Hardware - Laptops	<ul style="list-style-type: none"> • The developers are much better working with their own devices as it is already configured according to their needs and what they feel comfortable with. • Communication between members is simple via different applications

	<ul style="list-style-type: none"> ● Convenient to carry your own laptops anywhere and continue with the project where it was left off.
Hardware — ANDROID and IOS	<ul style="list-style-type: none"> ● Testing results are accurate than using an emulator as the location and components are rendered better on a physical device than an emulator. ● Easy to carry phones and walk-around the campus to test the application

Angular and NativeScript

Using the NativeScript framework will vastly improve the team's workflow due to the framework being integrated with Angular. This solves the issue of manually porting to other platforms. Angular can reuse code components. Uses static typing (TypeScript), along with many open source libraries.

Learning plan

Developers will have to understand how to work with a new framework, NativeScript along with its Command Line Interface and available components needed for the project in order to prevent cross platform compatibilities. The plan to learn NativeScript will begin once the first prototypes has met requirements. End date will prolong until team members have successfully completed the interior and exterior of the buildings first as a web application.