# Ascot Project Proposal

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## Description

For my senior project, I propose to continue the development of the Ascot Microforest Connect project, in collaboration with Dr. Demian Willette. The core functionality of the app is split into three components. First, there will be a data entry interface for users to log plant growth in microforests over time. Secondly, there will be an administrator's portal for microforest managers to view their data at a glance and perform essential administrative tasks. Finally, there will be an online web app for casual observers to view all microforests in the area and learn information about their locations and impact on the environment.

There is currently a working version of the first two components; the third is an idea of Dr. Willette that will hopefully boost engagement and encourage community participation. However, the current implementation leaves much to be improved upon. Namely, the database structure is currently set up assuming that there is only one microforest to log data for; given the project succeeds, we expect many more! Therefore, the project this semester will involve not only new development but also modernization and scaling tasks related to the anticipated growth of the Ascot project.

### *Technical Specs*

The application will be developed using Javascript / Typescript (using libraries such as React and React Native for mobile applications). The database is provided by Google Firebase. Regarding development software, I'll use familiar IDEs like VS Code, and ensure version control and collaboration using Github.

### *User Base*

Our user base is made up of anyone willing to contribute to logging the growth of a microforest, that have been authorized by an administrator to do so. We aim to make

the data entry app and Microforest Connect interface easy to use so as to be accessible for elementary-school age children and distinguished scientists alike.

## Justification

This project will require me to work at my best; while the individual applications are familiar in their composition and technologies, the development of all three in tandem offers a new level of complexity regarding web apps that I have not taken on before. Moreover, the intended complexity of the data structure in Firebase is also more complex than I have ever dealt with before.

Because the project was already in progress when I took it over, I'm confident I'll be able to complete key functionality in one semester's time. Starting off my project work, the majority of my time will be spent on updating database structure and code to more modern standards(for example, converting CSS to Tailwind) and removing redundancies to improve app efficiency.

On a personal note, collaborating with a department outside of Computer Science is something I've always wanted to do. I'm excited to work with subject matter related to nature and positive impact on our environment, and I'm inspired by the dedication of Dr. Willette and previous Ascot team students to bring the app to where it is now. I hope to take it even further and create a fun and easy-to-use experience to enable the proliferation of microforests around the LA area and eventually the world.