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Senior Project Proposal

**Problem**

My uncle owns a small business that is operated only by staff members in a small town different from where he lives. He receives monthly report from staff members and has to manage his ordering, restocking and profit based on that report. This causes problems because there can be errors in the report which will not generate the correct revenue, sales and so on.

**Solution**

To solve this problem, I intend to build a full stack web-app based on Mongodb database and potentially add useful functionalities for a small business owner to oversee a business that is far away from him. The website will have some kind of data visualization tool for the owner to effectively see and make decisions based on the inventory as well as other information such as sales, profit and revenues.

***Backend server***

Backend would be nodeJS api with Mongodb for database and TypeORM for Object-relational mapping and will store essential information such as orders, items and user accounts (owner, employee).

***Front End***

I intend to develop the front end in VueJs with either TypeScript or JavaScript and develop a graphic user interface for owner and employees to:

* Enter orders
* Manage account for owner
* Manage inventory
* Visualize data

**Schedule**

I intend to work mainly on the data visualization part in the Spring quarter with sample data and try to incorporate frontend and backend with data visualization. Then

I would work on other functionalities such as account management, data entries, and inventory management in the other half of Spring or Fall quarter. I would be implementing components by components and testing along the way.

**Meeting Minimum Criterion**

**Independence**

I would be implementing a full stack web-app using Mongodb.

**Ownership**

This project is going to be an individual project, so I am the one solely responsible for the projects’ success or failure.

**Background Research**

Since I haven’t work on inventory management projects, I have to do a lot of research in industrial inventory management software. Although I have used Mongodb, working with API will require a considerable amount of research. Moreover, data visualization will also require a fair amount of research for the Front end.

**Creativity**

The implementation is open-ended, meaning I can choose everything from how the front end would look like to how the Mongodb collections will be laid out. Every part of the web-app will be based on my creativity as well as my research.