

Michael Weinstein

Capstone Assessment

I have two priorities that led to my choice for senior design project - I wanted to improve my full-stack web development capabilities, and I wanted to work on an actual real-world project if possible. Fortunately, my sister works as a wedding and event planner, and needs a custom CRM-style software for her business once the venue opens next summer. I've worked with React, [Node.js](#), HTML/CSS, and PostgreSQL before for my co-ops and part-time position with the Demski Group, and am excited to continue to develop my skills with that stack. This project will give me the opportunity to apply what I've learned on a real product with real end users. By the end of my senior year, I hope to deliver a system that is both functional for her business needs and a strong demonstration of my competencies as a full-stack developer.

I've built a strong foundation in software development thanks to several of my classes at UC, including Data Structures (CS2028), Design and Analysis of Algorithms (CS4071), and Database Design & Development (CS4092). These classes introduced me to relational design, SQL, and scalable application design, as well as common software design methodologies. During my two co-ops with the Demski Group, I got real-world exposure to Software as a Service (SaaS) as well as how to maintain applications after they've been deployed. My role as an intern with the Demski Group required me to work with React, [Node.js](#), and PostgreSQL in a professional environment, experience that I hope to supplement via this project. In addition to these more technical skills, I've continued to build on my skillset as a member of team, both professionally and in academic projects. Group assignments in classes like Engineering Design (ENED1100 & 1120) as well as InfoSec & Assurance (IT2083) required close collaboration and the ability to integrate different perspectives and skillsets into a final product. My co-op

experiences further strengthened these skills by placing me in agile development environments in a small company where I was expected to meaningfully contribute not just as a web developer but also in DevOps and even reviewing other employee's code. For my senior project, the only reason I am not working as a part of a team is because I feel that it would be unfair to ask classmates to do unpaid work for a business, whereas in my case, the project directly supports my sister's company. Even though I am completing the project individually, I will be in close communication with both my faculty advisor and my client for the duration of the project. My previous project experience will help me maintain a structured process, manage deadlines, and deliver a product that meets the needs of real-world end users.

Again, I chose this project both because I wanted to showcase my skills as a full-stack developer, and also because this gave me the opportunity to complete a project with real-world users and actual deadlines. It doesn't hurt that if the app is successful and helps my sister manage her business, I'll be able to get married at her venue in 2027! With that in mind, my first steps are to determine what the application needs to do, so that I can choose platforms and frameworks appropriately. I'll start by building a local version of the app, running on my laptop, and then once my sister signs off on the features I've created, I'll work on transitioning to a fully web-hosted application. The actual list of functions that the app needs to handle are too long for this assessment, but broadly, I'll know I've successfully completed the application once it's a) accessible from a public domain with proper user access control and credentialing, b) capable of generating a plan for clients given their contact data and wedding date, and c) able to support third-party API connections like Honeybook and Calendly. All this together will involve a frontend hosting service with a configured and registered domain name, a backend with a custom API and robust security, and a database configured for minimal costs but reliable access.