

Smart Futures

Executive Summary

Community Partner

David Mosey

Student Consulting Team

Philip Baker

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Background

Smart Futures is a Pittsburgh-based non-profit software development organization in the field of education and workforce development. Smart Futures mission is:

To provide schools and education agencies with an online career and portfolio platform that helps all students prepare for post-secondary success.

The platform aims to not only bring career preparation, education, and planning into a single location for students, but also to enable educators to monitor student progress throughout their academic career.

Project Description

Project Opportunity

During our initial client meeting, our community partner David first presented to us a project opportunity that focused on improving the rostering system via a Clever integration into the current Smart Futures platform. We spent the first two weeks gauging the scope of the project and familiarizing ourselves with the codebase. We had found that the team's inexperience with the .NET framework, time-consuming onboarding process, and the difficulty of the Clever integration made the project infeasible for our timeline. After discussions and analysis of the business, our team decided to proceed with a Google SSO feature addition to the platform as it would allow us to further learn more about the existing .NET project and provide value as we found that many school districts have been adopting more G Suite features. We also had focused on targeting the troubling onboarding process and the software development process as a whole. Our group proposed the addition of a CI/CD pipeline to help with automated testing and deployment, documentation of all technical processes, and the better usage of Github branching and pull request features.

Project Vision

Our main goals for the project were to improve technology processes, implement testing pipelines, and integrate G Suite tools into the Smart Futures platform. Specifically, we aimed to improve the organization's developer onboarding process and Github usage. Additionally, we sought to integrate a continuous integration solution and implement Google Single Sign On functionality for all users.

Project Outcomes

The largest technology outcome was the implementation of Google Single Sign On, which is now live in production. While we were not able to implement a CI pipeline because the existing project failed to compile due to past development bugs, we unit tested our platform changes and setup an Azure pipeline for the project that will run when the compilation errors have been fixed. Additionally, we created documentation to improve technology processes within the company relating to Github use, Google SSO, and developer onboarding.

Project Deliverables

Our deliverables consisted of documents helping onboard new developers, maintain G Suite functionality, and highlight Github practices our team implemented. Our onboarding docs explain how to get the platform installed locally, as well as how to deploy from Visual Studio to the appropriate Azure deployment slot.

Recommendations

Moving forward, we recommend that the data store be updated to adhere to the One Roster data specification. We would also recommend that Smart Futures utilize the Azure pipeline that our team has setup and continue to build on the tests that we have written. The two recommendations above could potentially be done by a future CMU team if they were to start early in the first two weeks or so with implementing the CI pipeline to get a feel of the project from a higher level before diving into the specifics of the .NET framework. Then, following our team's recommendation, the team could use the rest of the semester to focus on the Clever integrations for OneRoster.

Student Consulting Team

Philip Baker served as the client relationship manager. He is a senior majoring in Information Systems. Upon graduating, he will be joining the Cleveland Indians; sitting across two software teams to support baseball and business operations.

Joshua Huang served as project manager. He is a senior majoring in Information Systems with a minor in Business Administration. He will be working at Facebook after graduation as a software engineer.

Albert Yuan served as quality assurance manager. He is a junior majoring in Information Systems. This upcoming summer, he will be working at Amazon HQ in Seattle as a software development engineer intern.