

The Bridge API

Executive Summary

Community Partner

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Student Development Team

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Background

Within Carnegie Mellon University (CMU), the Office of Student Activities serves to provide students with non-academic resources. In particular, Student Activities empowers the more than 280 student organizations officially recognized by Student Government. The client, Elizabeth Rapoport, is the Assistant Director of Student Activities. She is the primary administrator and planner for any projects or changes involving the Bridge, a third party system by CollegiateLink, that stores information on non-academic organizations at CMU. This system was implemented three years ago in the hope that it would act as a hub for all student organization workflows, including recruitment, event promotion, and organization management.

Project Description

Project Opportunity

Although the Bridge serves its purpose as an information repository, the goal of sharing this information effectively amongst the student body had not been addressed. There is an existing application programming interface (API) to access this information, but students can't easily get keys to use it due to security concerns – the existing process to apply for a key is a paper application that takes up to several weeks to be approved by all parties. This is because the API can only offer all public and private student organization data, not a portion of it. This raises several problems, including financial records and special interest group membership details. Consequently, use of the API is highly restricted. Our client wants to give student organizations and on-campus developers an API with suitable authentication management, so that students can access and use data for academic or personal projects.

Project Vision

We planned the design and development of a new API using Ruby on Rails custom built for the CMU Student Activities Office that serves as an authentication middleware between developers on campus and the existing API. Instead of handing out the master key, applicants will receive their own key with specific permissions determined by our client, the Assistant Director of Student Activities. At a high level, our system will have a front-end website where users sign on and use a text based form to request user keys for themselves. Key requests need to be approved by a list of staff approvers, who can leave comments and assign permissions to each application. Successful

implementation will remove barriers in allowing student developers on campus to create meaningful applications relevant to Carnegie Mellon's student activities and events and provide value to the campus community, while maintaining the security of the information on the Bridge.

Project Outcomes

We have developed a web application that serves as both an online application for an API key and a secure API that allows developers to access information stored on the Bridge. Developers on campus can apply for keys to access information on the Bridge, and the administrator of the system is able to review these applications and assign appropriate permissions on a per application basis.

Project Deliverables

The final project is hosted at <https://stugov.andrew.cmu.edu/staging/bridgeapi/>. We have set up staff and administrator accounts, and have trained our client on how to use the system as an administrator. We have open sourced our application code on GitHub at <https://github.com/cmu-student-government/shinymetal/>. We have also created an instruction manual for administrator reference and have documented our application code extensively for future maintainers of our project.

Recommendations

We recommend that Student Activities onboard previously interested organizations (Computer Club, CUC TV Screens) into our system. Following that, we recommend advertising our system to other campus organizations, and eventually classes/individual developers.

We recommend that future developers on this project keep in close contact with the administrator at that time to discuss improvements and new features.

Student Development Team

Jake Correa served as project manager and UI developer. He is a third-year student majoring in Information Systems. He will be working for Apple Inc. this summer as a project manager.

Melanie Freeman was the client advocate and developer. She is a third-year student majoring in Information Systems.

Ben Lam led development of the API functionality development of the API functionality. He is a third-year Information Systems student with a minor in Computer Science. He will be working at Epic this summer as a software development intern.

Aditi Sarkar contributed as a developer and QA manager for this project. She is a third-year student majoring in Information Systems with a minor in Physical Computing. She will be interning at Deutsche Bank this summer.