

Automated Fitness Instructor Certification Website

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Problem Statement

Our client AFIC currently managed their instructor certification by hand. In order to automate this process they requested that the process be brought online.

Functional Requirements

- Display all relevant AFIC data to different user permissions
- Instructors can apply for a certification
- Managers can approve applications
- The application process is straight forward and automated
- Well constructed database schema
- Users can manage their own account information

Main functional modules and their connection

- React - Populate frontend via transferrable components
- Express - Implement routing to send/receive data to/from the React frontend
- Sequelize - Translate universal query syntax into a database-specific language for communication between Express server and Azure SQL Database
- Jest - Testing framework used to test React frontend

Testing

- User testing for bug finding and documentation
- Jest testing for written code

Solution

We built a website for our client AFIC. This website would allow them to manage their instructors and managers while having their certification process automated.

Non-functional Requirements

- Only authenticated users will be allowed to access the service
- The website does not crash
- Users are only allowed to see the data they are authorized to
- The website will be intuitive and easy to use
- The website will be compatible with different browsers and devices

Constraints

- Instructor and manager data must be protected
- Users will not be able to approve their own applications
- The overall cost of the project must be low
- Project must abide by ABET standards
- Project must abide by IEEE standards

Operating Environment

Any device running a modern web browser.

Programming Frameworks

React, Sequelize, Express, Jest

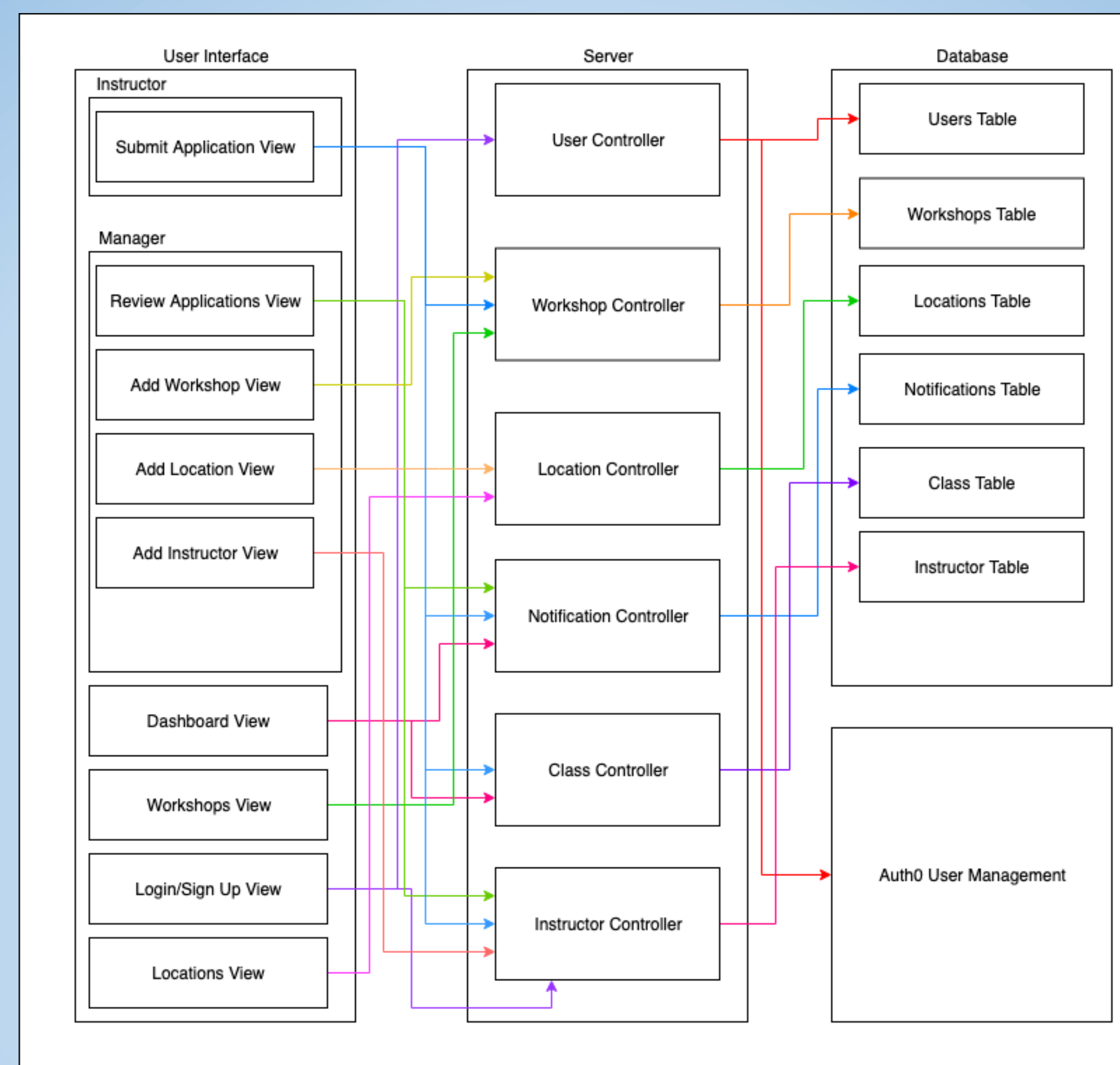
Programming Library

Material UI

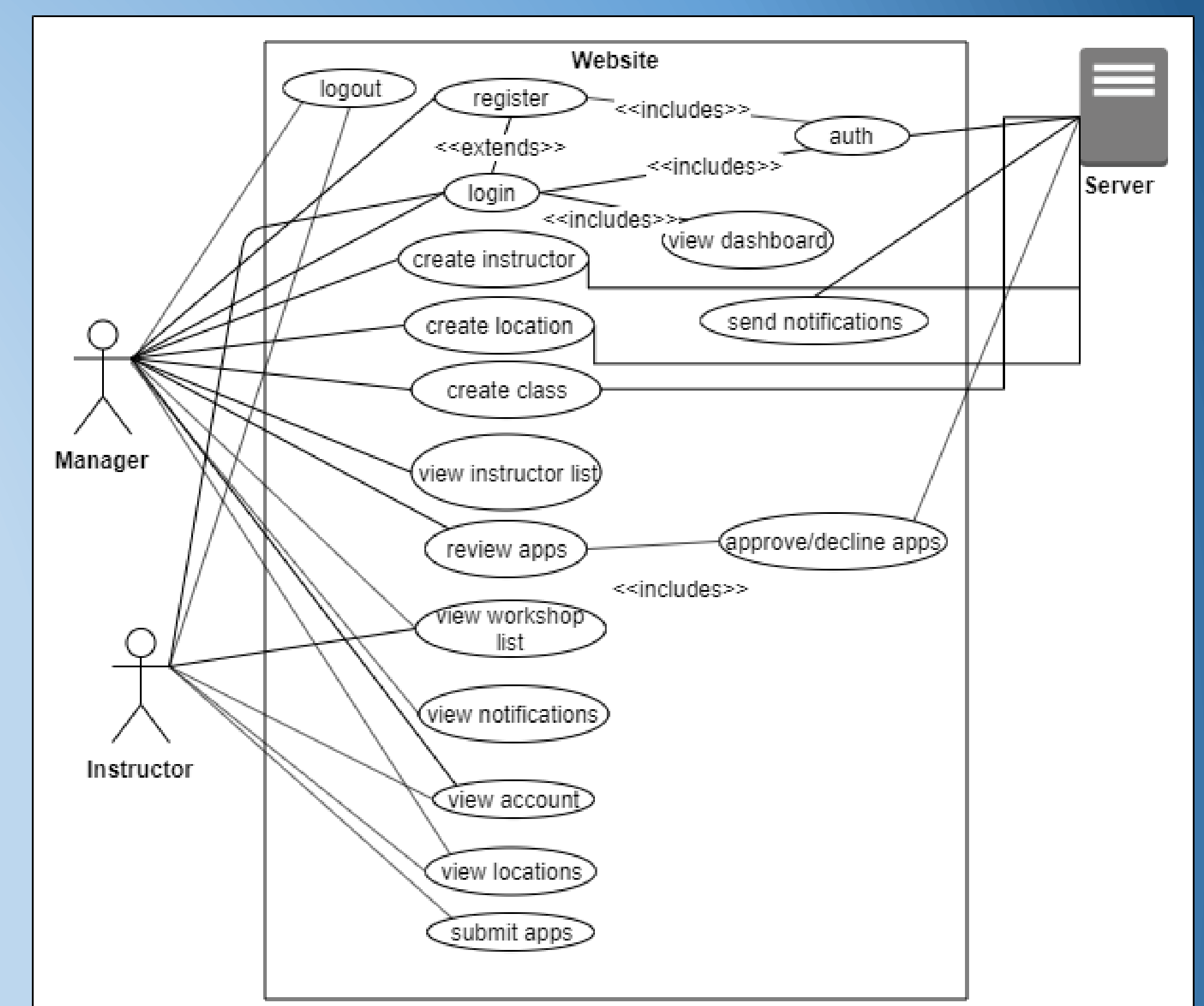
Development Tools

Microsoft Azure, SQL Server, PyCharm

Block Diagram



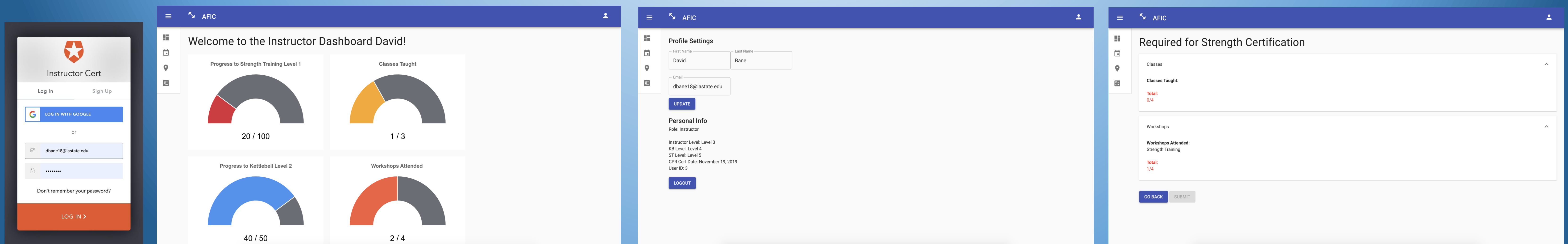
Use Case Diagram



Relevant Standards

1. IEEE 1012-2016 - IEEE Standard for System, Software, and Hardware Verification and Validation
2. Standard for Adoption of ISO/IEC 26513:2009 Systems and Software Engineering—Requirements for Testers and Reviewers of Documentation

Application Screens

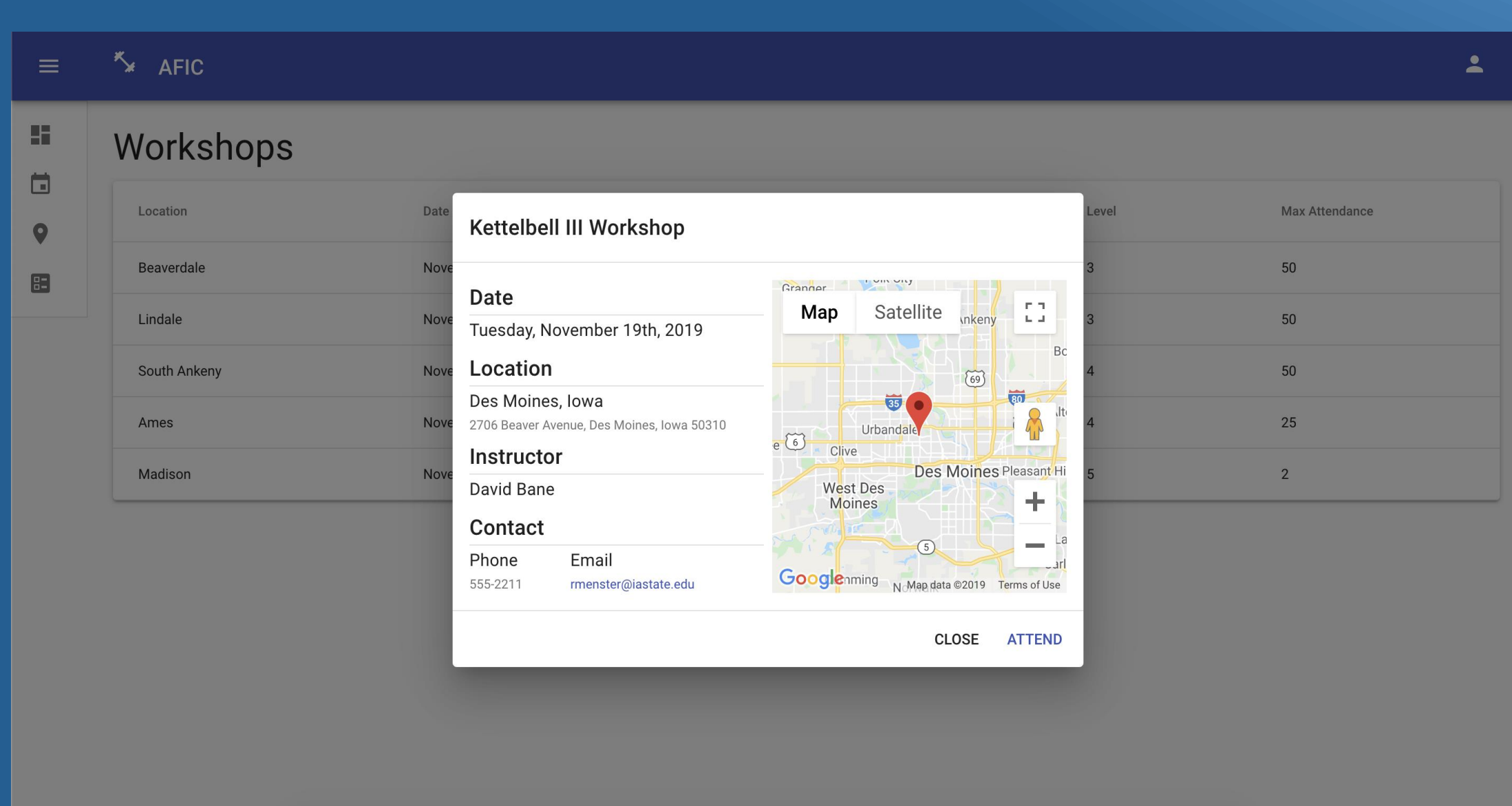


Login

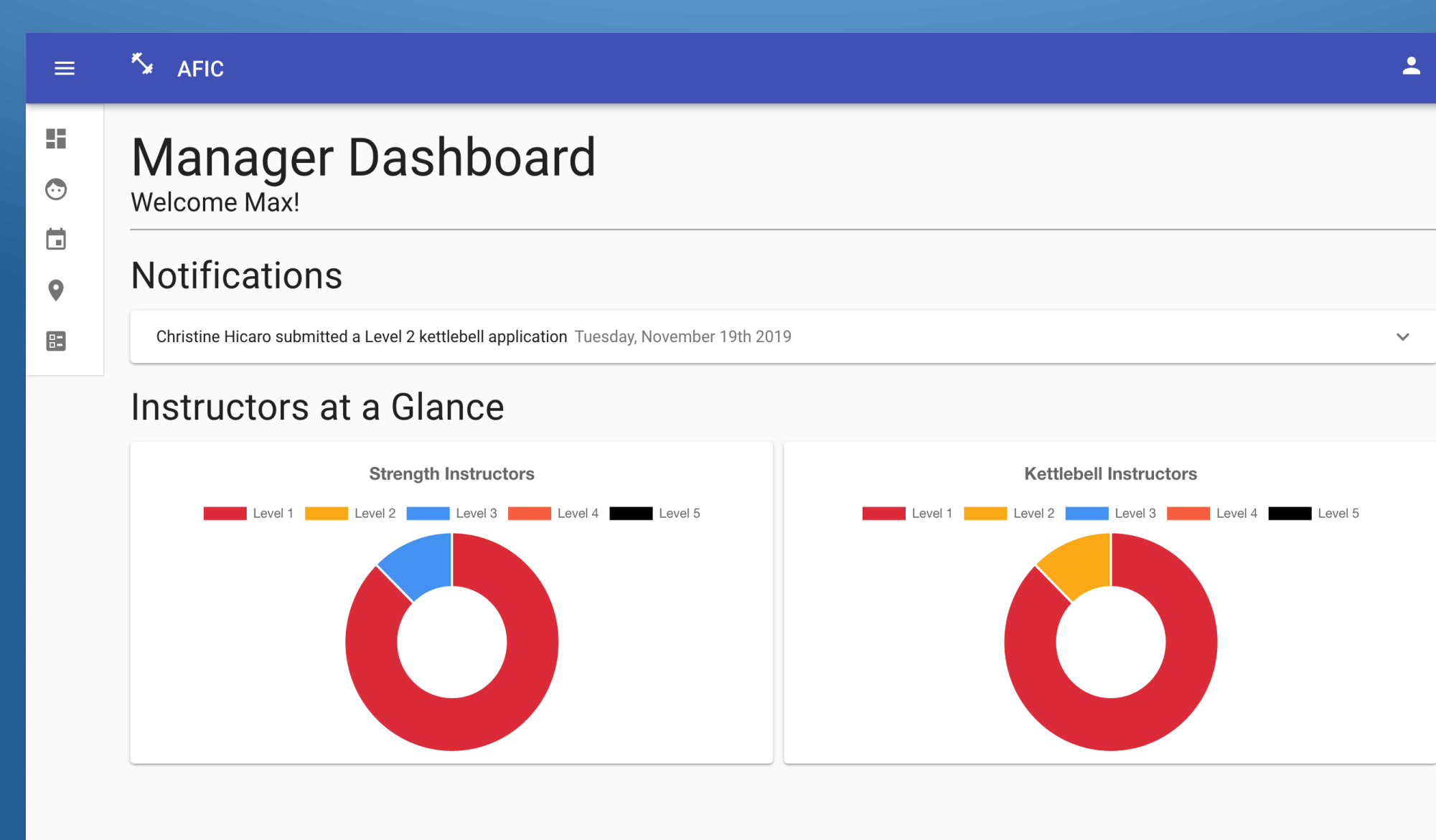
Instructor Dashboard

Profile Data Page

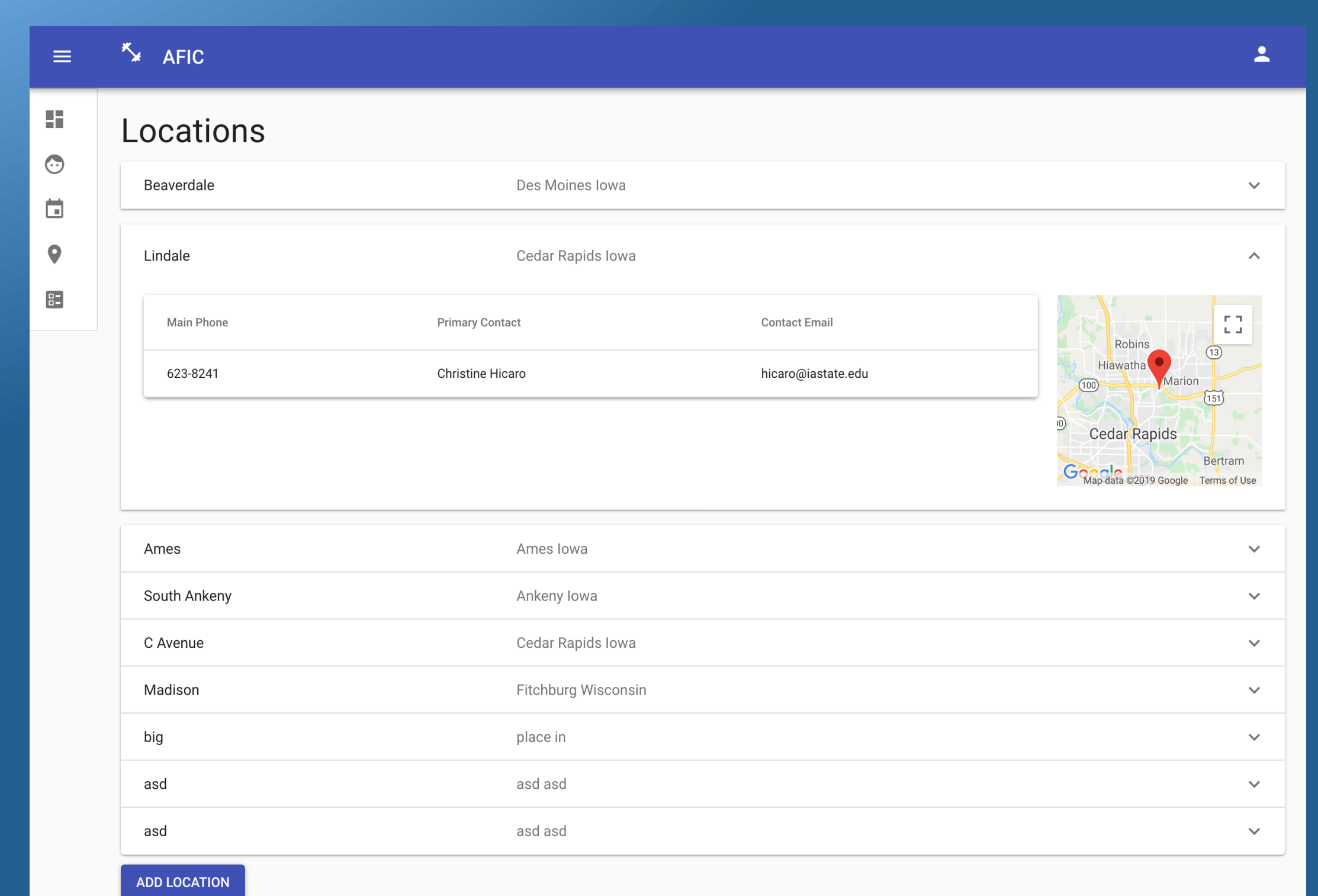
Instructor Application



Workshops Page and Dialogue



Manager Dashboard



Locations Page