MICHIGAN STATE UNIVERSITY

Project Plan

Review Aggregator for Educational Programs

The Capstone Experience

Team Malleable Minds

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From Students…
…to Professionals

Functional Specifications

Customers are accustomed to using review aggregators when making buying decisions. We will utilize this familiar model to create a web app for parents making educational decisions for their children.

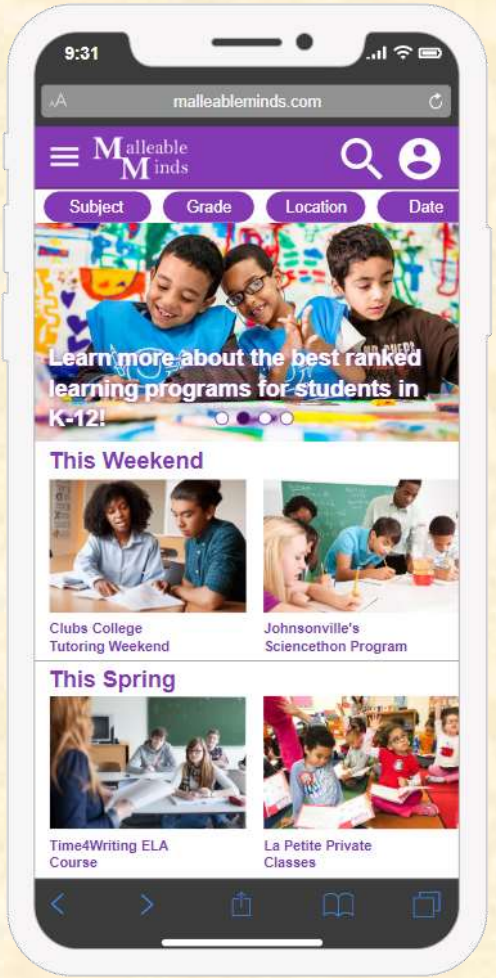
Features:

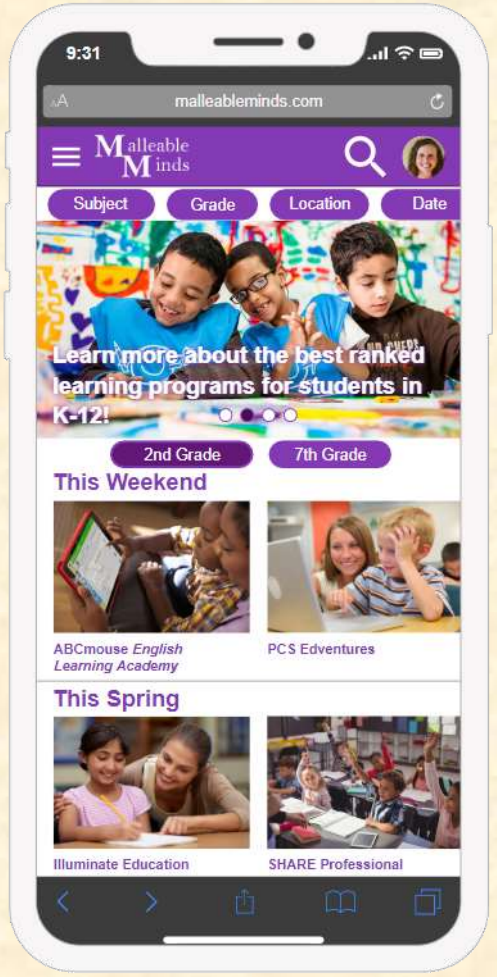
- Review aggregator
- General search capability
- User specific experience and reviews
  - Parent, Educator, and/or Provider
- Individual profile and program views
- Program likes, Educator following, personalized push notifications

Design Specifications

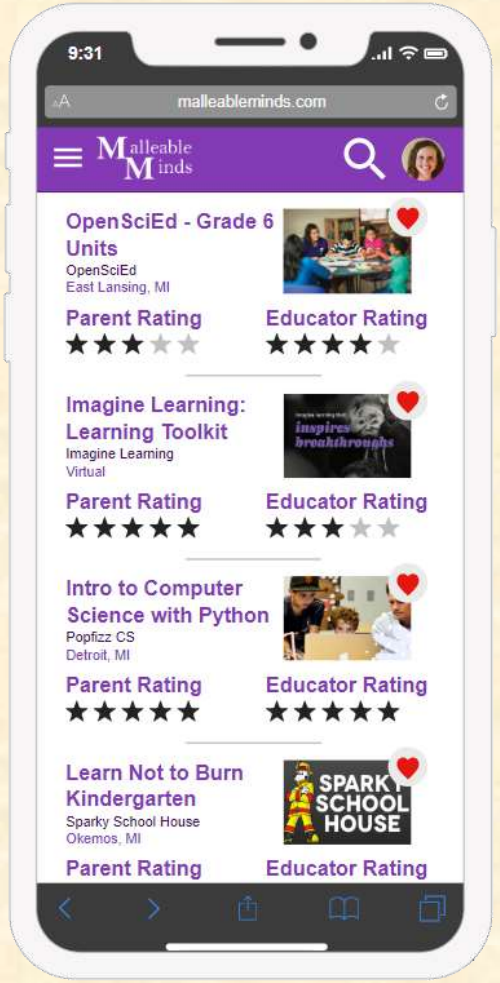
- Review aggregator web application that can be used on any web-enabled device (focus on PC and mobile internet browser compatibility)
- Search functionality to find a list of programs and look at a program's details
- Navigate different pages with a hamburger menu icon
- Different account types with account-specific features
  - Parent - tailored home page, likes, follows, notifications, suggest edits on program details, individual reviews identifying as parent
  - Educator - same as parent, but individual reviews identifying as educator
  - Provider - add/edit/remove program information, cannot review but can respond to reviews on their programs

Screen Mockup: Home Page

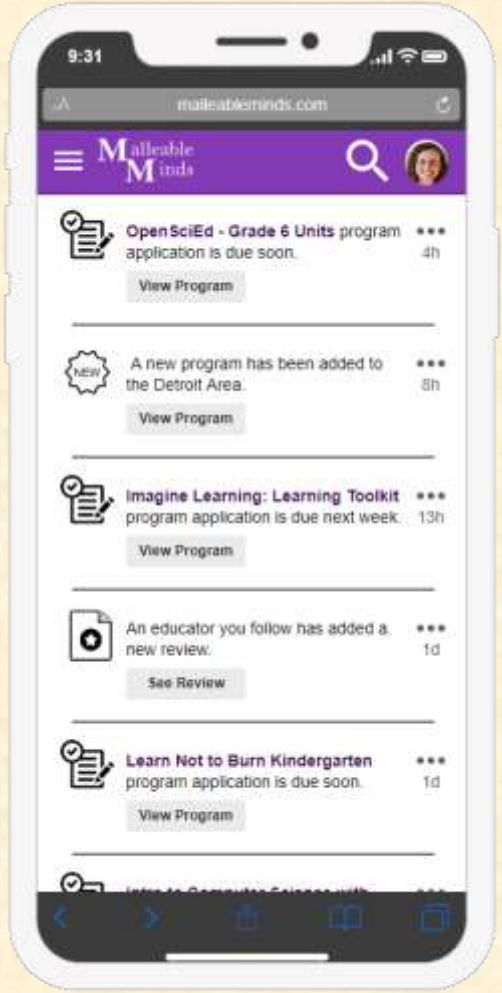




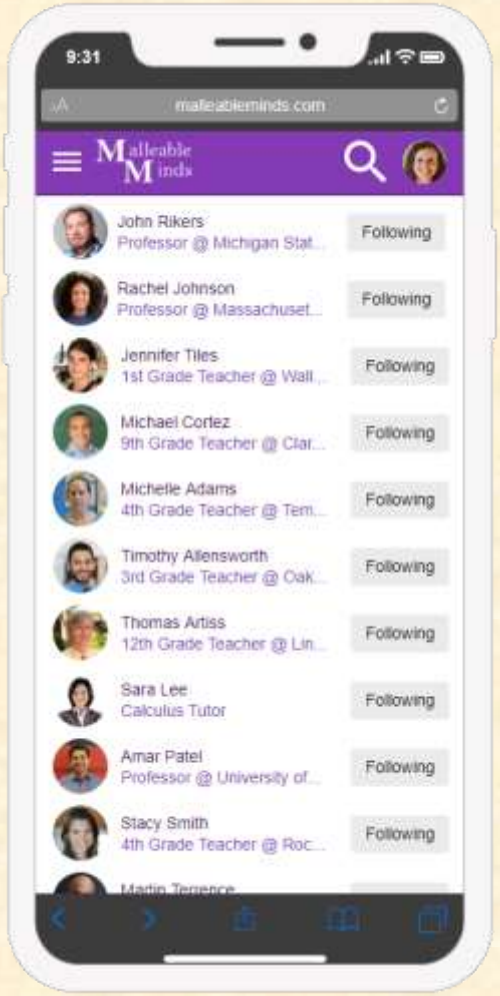
Screen Mockup: Likes Page



Screen Mockup: Notifications Page

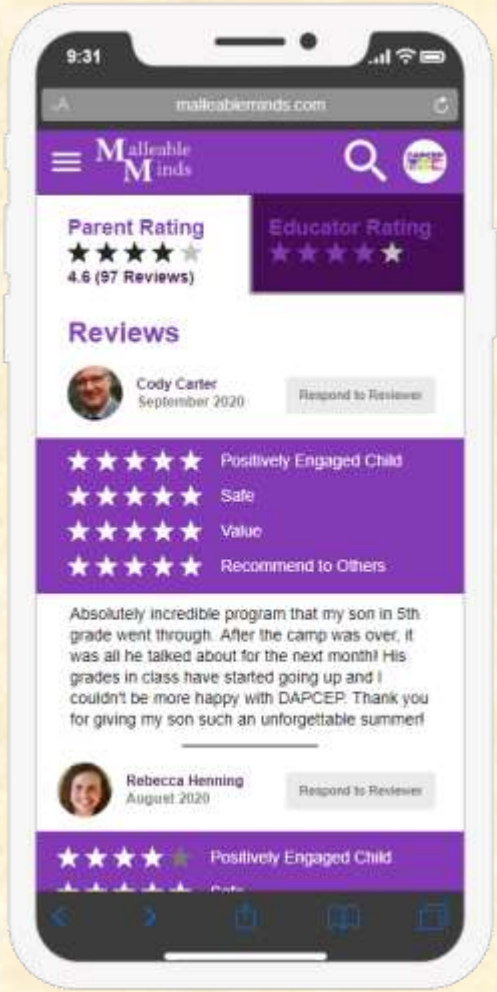


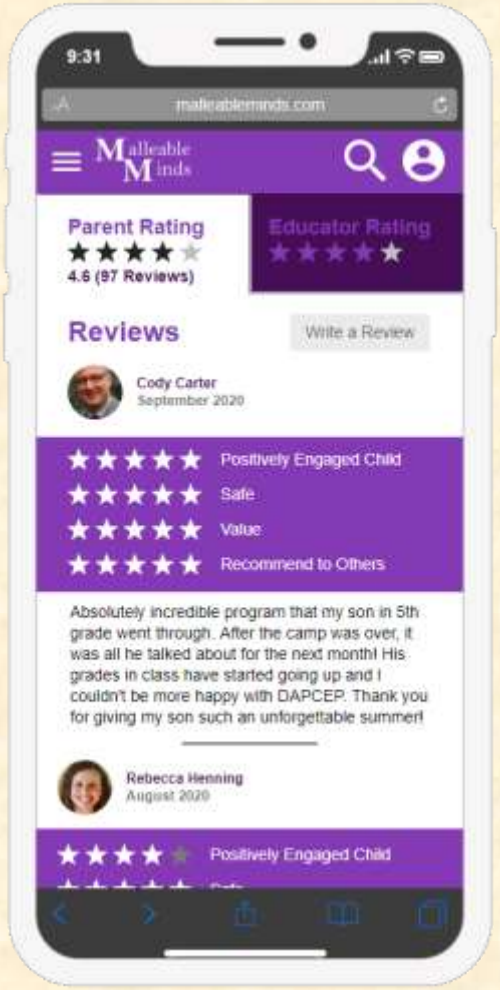
Screen Mockup: Following Page



Screen Mockup: Program Details Page

Screen Mockup: Reviews Page

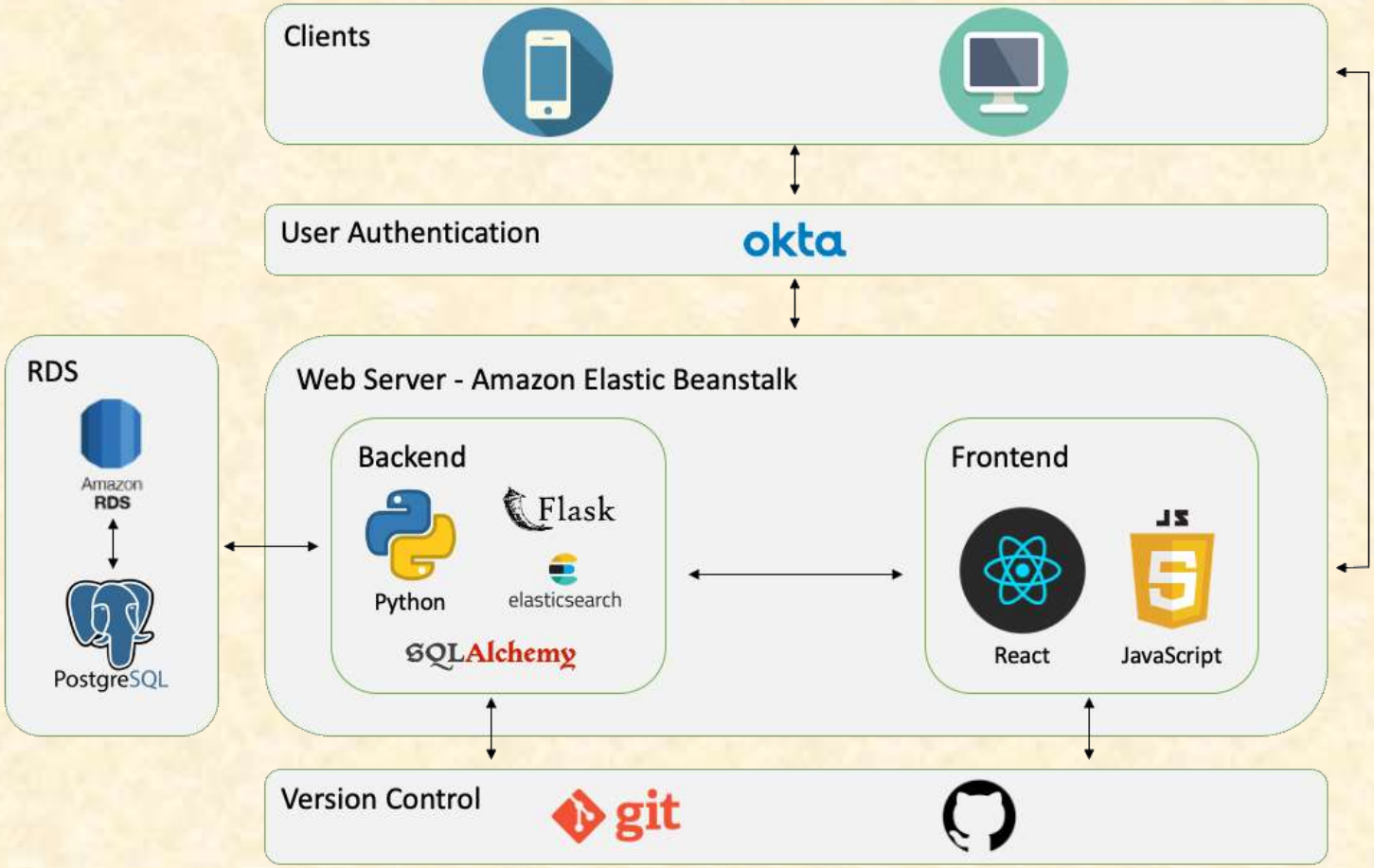




Technical Specifications

- Web-based application deployed and hosted through Amazon Web Services
  - Designed for Mobile and PC Browsers
- Leverages a Flask framework that connects the Python-based backend to the React-based frontend with the use of a RESTful API
- PostgreSQL database schema deployed through Amazon RDS
  - Accessed in backend using SQLAlchemy Library
- User Authentication verified through Okta
  - Also allows for unauthenticated “public” access
- ElasticSearch implemented in the backend for search and filtering capabilities

System Architecture



System Components

- Cloud Platforms
  - Amazon Web Services
    - Amazon Elastic Beanstalk – Web Server
    - Amazon Relational Database System
- Software Technologies
  - Frontend: React, JavaScript, Okta
  - Backend: Python, SQLAlchemy, ElasticSearch
  - Version Control: Git, SourceTree
  - Development Environment: PyCharm, Visual Studio

Risks

- Customizing Content for Multiple Children
  - Need to determine how to best present information to a parent with multiple children of varying ages
  - We will design a highly customizable experience with user filtering
- Efficient Database Storage and Query Design
  - As the app scales it will likely degrade performance, and database structural changes will be difficult once real users are involved
  - We will build in stress testing components with design as we go
- Evolving Project Requirements and Scope
  - We are building quickly and iteratively from the ground up, and when faced with unknowns we must rework and add new components
  - As we re-scope we will discuss what items must go out-of-scope in favor of reworking and replacing current features
- Initial Program Information
  - Database information will initially come from CEO, and we will not have data as we build to test our frontend/backend
  - We will work with CEO to nail down data fields well in advance and develop an automated process to upload data sets as they are delivered. We will also curate a dummy data set for testing purposes

Questions?