Scribe Scholars

PREPARED FOR

CS 307 Class Project

PREPARED BY

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1. Problem Statement

Technology is rapidly pushing itself to the forefront of our classrooms by providing cutting-edge advancements to learning, allowing the students to not only learn, but to have fun while doing so. Here is the problem though: there is no one stop shop for teachers and students to connect with each other. There needs to be a platform for all the students' and teachers' needs that is also user-friendly, easily accessible, and open to a wide variety of students of all ages. This application will feature in-class activities, out of class assignments, discussion boards, messaging systems between parents and teachers, a detailed dashboard for teachers to gauge student performance.

2. Background Information

Our product will fill the need for a clean, easily-accessible, virtual classroom with a hierarchy system of management for students, parents, teachers, and administrators. With our solution, each type of user will have all the necessary tools for their role in the education system, all in one place. Classes will be easy to set-up and manage for teachers, and students will be able to join classes and interact with other students and their teachers with ease.

Our idea stemmed from the possibility of combining tools like BlackBoard and Piazza, along with an attractive social media style and interface, into a single tool. While Blackboard is a nice hub for announcements, calendars, and grades there is no emphasis on doing in class activities through it or assigning homework on a regular basis. For Piazza, the system they have is a great application however it would be incredibly nice if the discussion boards were all set up when the class was created in our app. Not to mention we will be able to have administrators and or parents have access to the discussions as well Our application will allow school organizations to provide a simple and applicable tool to each classroom that allows administration to manage class setup, each teacher to manage each class and coursework, each parent to manage their child's account, and each student the ability to access all of these resources.

3. Requirements (Backlog)

Milestone	Tasks
1 - Functional	
	As a user
1.01	As a user, I would like to be able to create an account.
1.02	As a user, I would like to be able to login in to my account.
1.03	As a user, I would like to be able to adjust account information.
1.04	As a user, I would like to be able to reset my password.
1.05	As a user, I would like to be able to have all my information sync between devices.
1.06	As a user, I would like to be able to have an easy to navigate landing page.
	As a student
1.07	As a student, I would like to be able to join my current classes.
1.08	As a student, I would like to be able to see an overview of all my classes.
1.09	As a student, I would like to be able to access in-class lessons.
1.10	As a student, I would like to be able to access homework.
1.11	As a student, I would like to be able to receive notifications of deadlines.
1.12	As a student, I would like to be able to see an overview of my grades in a specific class.
1.13	As a student, I would like to be able to see my current class rank and GPA.
1.14	As a student, I would like to be able to see my classroom's top 3 students.
1.15	As a student, I would like to be able to have an easy-to-use question forum for discussion.
1.16	As a student, I would like to be able to have a function for creating groups for group project
1.17	As a student, I would like to be able to submit a regrade request to my teacher
	As a teacher
1.18	As a teacher, I would like to be able to have a dashboard with data on class performance.
1.19	As a teacher, I would like to be able to have a table of current students in my class.

1.20	As a teacher, I would like to be able to have a dashboard with data on individual students.
1.21	As a teacher, I would like to be able to see a live data feed of in-class lesson performance.
1.22	As a teacher, I would like to be able to see who is having issues with class lessons.
1.23	As a teacher, I would like to be able to receive notifications if a students is failing a lesson.
1.24	As a teacher, I would like to be able to see a descending-order list of class ranks.
1.25	As a teacher, I would like to be able to create my own in-class learning modules.
1.26	As a teacher, I would like to be able to create personalized homework assignments.
1.27	As a teacher, I would like to be able to create simple tests to test students understanding.
1.28	As a teacher, I would like to be able to input student grades in an easy to use manner.
	As an administrator
1.29	As an administrator, I would like to be able to see all classrooms using SS in my school.
1.30	As an administrator, I would like to be able to see data on specific classroom performance.
1.31	As an administrator, I would like to be able to get in contact with teachers through SS.
	As a parent
1.32	As a parent, I would like to be able to see my child's grades and class progress.
1.33	As a parent, I would like to be able to get in touch with my child's teacher.
1.34	As a parent, I would like to be able to see a pre-calculated GPA for my student.
1.35	As a parent, I would like to be able to manage my child's connected classrooms.
	As a developer
1.36	As a developer, I would like a repository setup that allows for easy updates for the site.
1.37	As a developer, I would like documentation throughout the code.
1.38	As a developer, I would like a wide variety of React Components for ease of reusability.

4. Non-Functional

a. Architecture

In an effort to be able to release more features in our application, we have decided to use Firebase by Google. Firebase supports all platforms and also has the built in

functionality to synchronize across the globe on all platforms. Having all the back-end handled through Firebase saves the hassle of dealing with servers, REST APIs, and other backend tasks. Some of the services we will be using from Firebase is Real-Time Database, Authentication, Storage, Crash Report, Analytics, Notification, and Cloud Messaging.

The frontend will be developed using ReactJS for fast, responsive user interfaces. We will also be use some frameworks such as Bootstrap and Font Awesome to aid in appealing interfaces.

b. Security

With using Firebase there are some apparent security benefits and downfalls. In terms of benefits the entire system is owned by Google and therefore protected by Google, so all user information will be very secure from unwanted access. The downfall is that being a back-end service provider, they own the database and have access to the data, so they own it. While it would be better if we had full control, the benefits that Firebase brings to the project's development speed well outplays the downfall. In terms of sensitive user information, our application will not store anything on the client side through variables or local storage. All sensitive information will be sent directly to Firebase.

c. Usability

Usability is a large concern for a product like this. We are expecting teachers and students to fully use this application, so we need to make sure no feature is hard to understand or get to. We will do this by making a minimalist home page for easy navigation for where they would like to go. The website will also be responsive, so whether they are using a phone, tablet, or computer, they will have a pleasant viewing experience.

d. Hosting

We will be hosting our website from our group Github repository using Github Pages. This system works extremely well because we can set up a branch and whenever we push to that branch, the site automatically updates with the new code. This is convenient not only because all of our code is already saved onto

github but it makes it nice so we can very consistently push out updates to the live version of out site.