Quizzical

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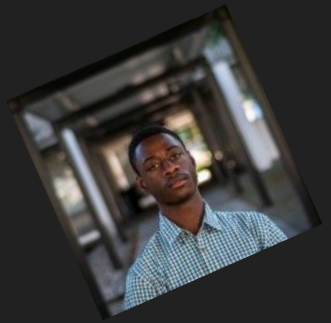
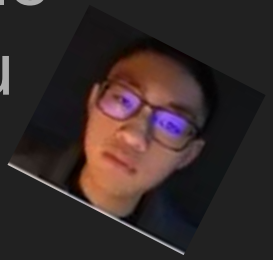




Project goals and target audience

Overall goal:

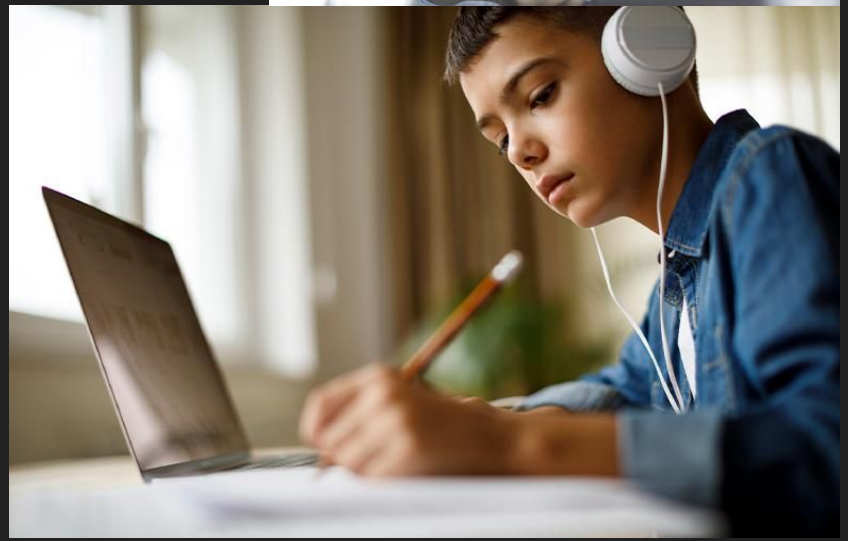
- To develop an application that helps students learn actively online

For teachers:

- Create multiple choice quizzes easily by taking pictures of questions and choices
- Keep track of students' progress in taught class

For students:

- Take quizzes to assess learning
- Practice learned concepts by redoing quizzes
- Compete with peers through leaderboard



Main functional and non-functional requirements

Functional requirements

- **Google sign in** for user login and fetching user data
- Users can change their profile picture, username, user email and push notification rate
- Teachers can create multiple class, multiple quiz modules and quizzes in each class
- When teacher creates a class, he/she will receive an email notification (using **Gmail API**) containing the class code
- When a teacher updates quiz modules in a class, all his/her students receive a **real time push notification**
- Teachers can earn EXP through creating quizzes and receiving likes from students
- Students can join multiple classes and do quizzes to earn EXP. The **EXP earned will be based on the correctness in the quiz**.
- Students can review which question they did wrong in each quiz, and see the class average and highest score
- Teachers can see the overall class statistics for each quiz, as well as the overall performance of a single student
- Leaderboard for both students and teachers should be updated based on EXP
- Push notification for leaderboard update every day/week/month based on user's choice

Non-functional requirements

- The users will be informed when clicking on each button so that they can have a chance to decide whether they want to proceed or not to avoid unintentional behavior (user experience)
- The teacher should be able to use only 1 picture (load/take it one time) with cropping function to setup one question with all its choices so that the quiz setup process can be easier and faster. (user experience)
- Users identities should not be revealed(security, using UID as main identifier instead of any personal info)

Contributions

- Everyone worked together to come up with the basic design of the app's pages, including creating a mock UI in Xamarin
- Everyone worked on assembling Milestone reports

Winston (frontend)	Andrew (frontend)	Jason (backend)	Ihsan (backend)
- Google authentication, login page - Quiz logic, user EXP logic - User profile image - Class adding, switching functionality - Migration of designs from Xamarin mock - Front-end tests - Refactored variable naming for frontend-backend communication - Leaderboard and class statistics - Email and push notification	- Frontend UI page layout design - Teacher quiz creation logic - Leaderboard - Camera integration into quiz creation - Front-end tests - Create quiz activity - Create quiz UI design and choices logic - Front-end tests - Frontend file upload to server	- Created MongoDB framework - Formatted collection of data to have fields: user ID, type, and data - Use user id to get fields: type, data - Back-end tests - Backend code fixes - Refactored variable naming for frontend-backend communication	- Deployed backend on Azure - Imported MongoDB, added dependencies to backend - Back-end tests - Migrated from Cosmos DB to our own database - Frontend-backend communication - Student like instructor increases instructor EXP at backend - Backend bug fixes

The Most Important Lesson from Our Project

- Well fleshed-out design process with careful teamwork, *communication*, and testing can be very powerful