SCSE21-0503

Developing a mobile-first educational tool for university students

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Introduction

MobileLearn is an educational tool that is specifically optimized for the best mobile learning experience for university students. This is to address the issue where many existing educational tools focused primarily on optimizing for desktop experience and not designed to be used effectively on their mobile application. This project has developed a set of prototype software and tested the idea by implementing it for the course CZ1013 (Physics for Computing).

Implementation live online quiz feature

This is one of the main highlight features of this project, where course admin can organize Kahoot-like live online quizzes which allow students to participate together in real-time. To achieve this, we need to have a mechanism for real-time communication between the mobile app client and the web admin portal. This is implemented by attaching real-time listeners to the backend Firebase database, where any changes to the data in the database will immediately be reflected in both the frontend web portal and the mobile app.

Key Features

- Consume educational content uploaded by course admin that are optimized for easy viewing on mobile form factor

- Attempt various quizzes set by their course admin to test their understanding of the content

- Course admin can organize Kahoot-like live online quizzes which allows students to participate together in real-time

- Students can post questions in the community section in the application to have discussion related to the educational content

Figure 2. Students consume education content

Figure 3. Home Page showing the list of chapters and all the corresponding lessons
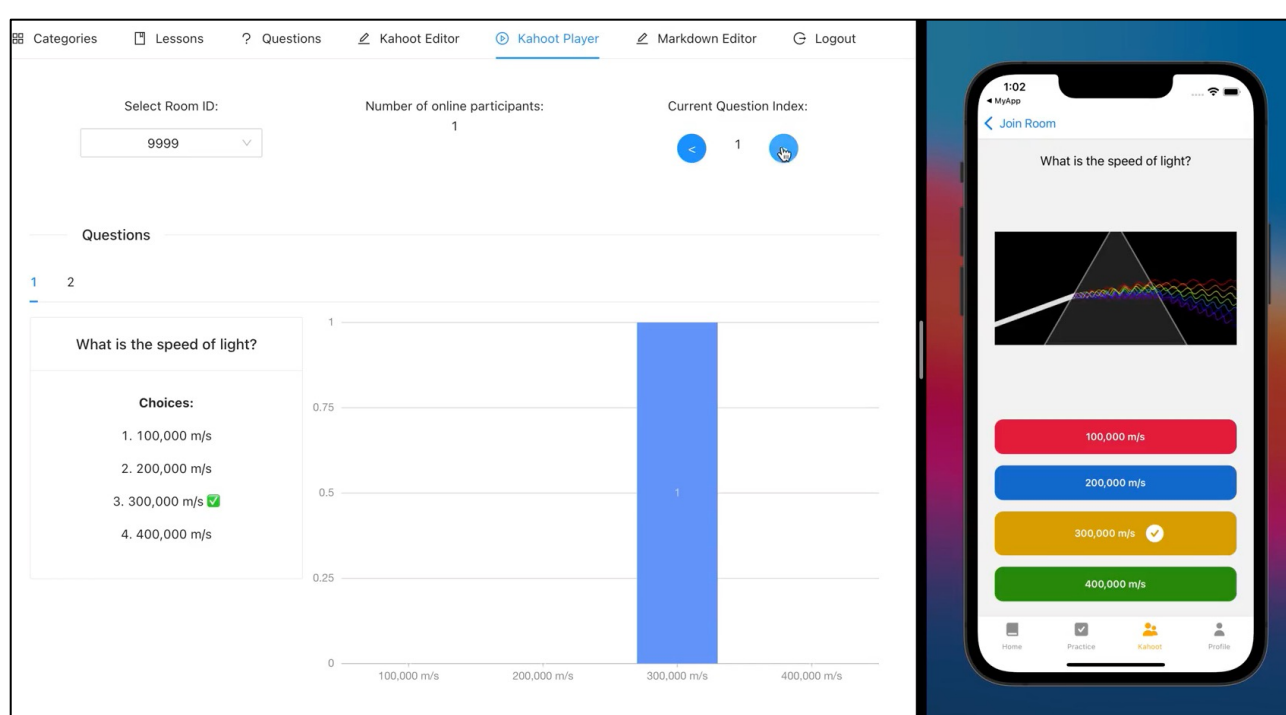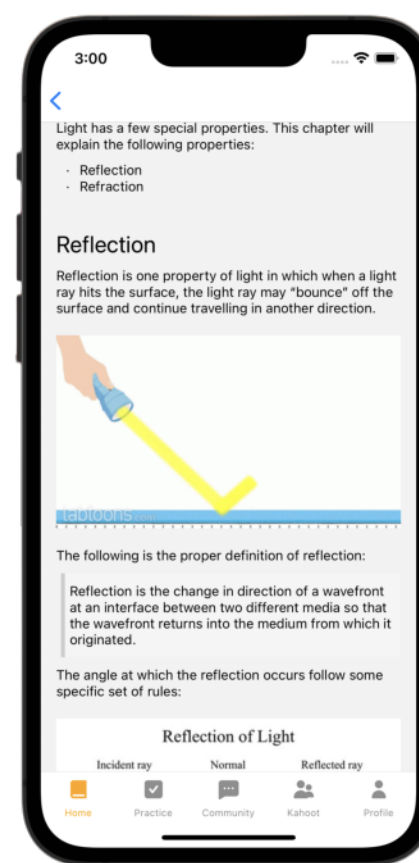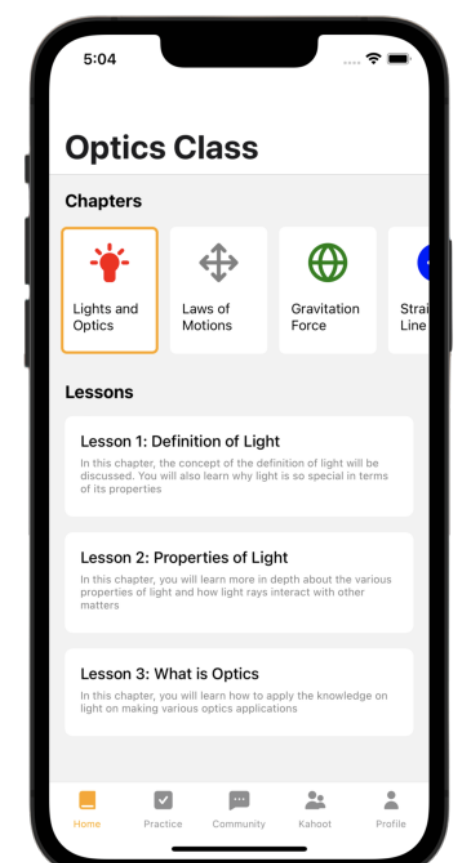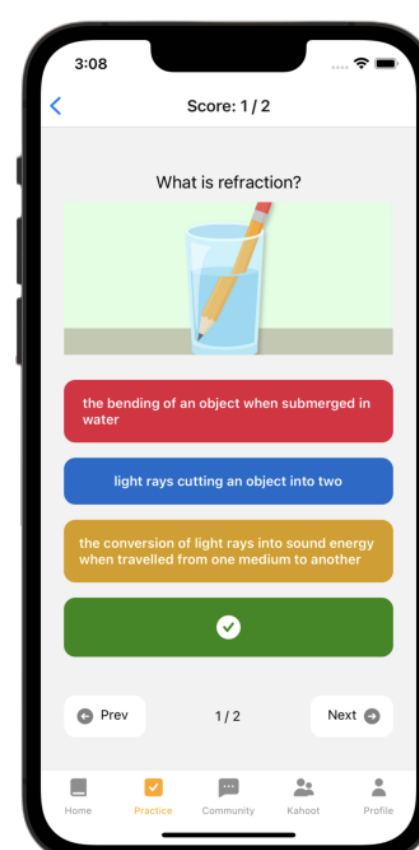

Figure 1. Course admin can control the live online quiz using the admin web portal shown on the left side of the screenshot. The students' responses to each questions are shown in real-time on the chart

Figure 4. Quiz Page allows students to quiz themselves through a serious of multiple-choice questions
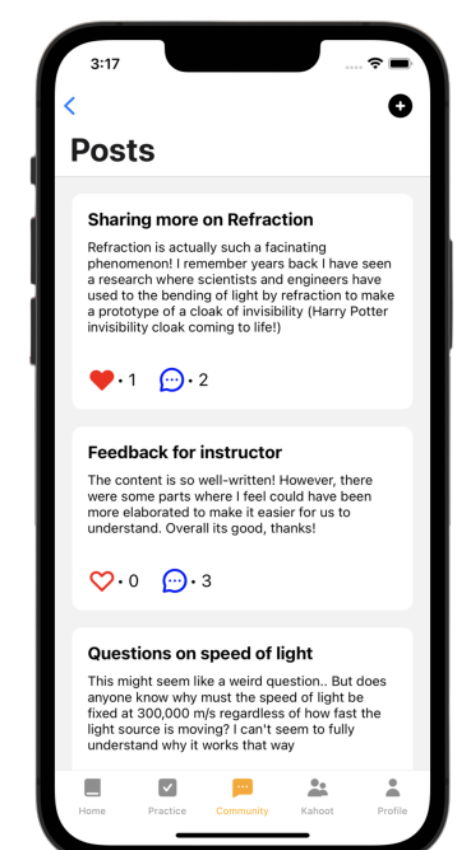

Figure 5. Forum Page allows students to post questions or read other posts, and comment of these posts from their classmates.