Medical Education Application
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Deliverable #1
3/2/18

Background knowledge:

We are currently developing a Medical Education Application designed to help medical students as a study tool. The inspiration for this project comes from Dr. Matt Broom, a doctor at Cardinal Glennon Children's Hospital in St. Louis, MO, who wanted to implement an innovative way to get medical students to study. This involves the teacher sending a multiple-choice based question to his or her students' phones, and they would answer the question, and once they get it correct, they get another question at the same time the next day. The idea is to get the students to think about these questions outside of a classroom setting in a somewhat more spontaneous manner, since that's how they're gonna have to know the material when they eventually become doctors. The idea wasn't to make them nervous about being tested at any random point in the day, but rather as a more "fun" study tool that tests how well they know the material in an atypical setting. Dr. Broom's colleague Dr. Chris Brownsworth, who teaches at Saint Louis University Medical School, tested this idea on his student residents at SSM Health Cardinal Glennon Children's Hospital using questions sent through text messages. The students overall reacted positively to this new study method, and this inspired Dr. Brownsworth to extend this to a mobile based application.

Project overview:

The ultimate goal of the project is to develop the text message approach used by Dr. Brownsworth into a mobile application platform to be used by Saint Louis University Medical Students. The application will prompt the user to create an account, which will ask whether to register as a student or a teacher. Since the questions will be officially made by doctors for medical school, users of the app will also be prompted to an end user legal agreement before creating an account. Teachers will be able to create classes, post questions (which will be sorted into groups based on what topic the question is for), control privacy restrictions of the content, and receive feedback reports of the students' performance. The students will be able to pull up a list of classes to register for (which the teacher will approve), filter questions by groups, highlight specific questions to review, and access reports for their overall scores and compare results.

Questions will be in a multiple choice format, and explanations will be given for each choice, regardless of if it's right or wrong. The teacher will have the option to add pictures or media to the questions as well as links to access more information related to the material. The questions will be peer reviewed, posted to private groups or all people using the app, and have the option to mark as a copyright violation. After answering the question, the students will be

able to decide if questions will be posted either in blocks or over time. Overall, the app will be structured to be easy to use and able to access "teacher" or "student" functionality within the same app. The information and statistics from the app will be recorded for educational studies including demographic information if needed.

We will be developing the application for iOS devices, so we will be coding the application in Swift 3, using JavaScript for the screens, and mySQL for the database of questions. Our goal is to have a prototype for the question screens and login by Deliverable #2, an alpha for the application as a whole by Deliverable #3, and a finished product by Deliverable #4.

Formal Requirements:

Requirement 1a.
Create a user application interface for IOS mobile devices.

Requirement 1b.
Have a login screen that will prompt the user for a username and password of an already enrolled user, or the option to create a new account for a new student or teacher.

Requirement 1c.
The new user screen should prompt the user for their email address, password, username, and whether they're a student or teacher.

Requirement 2a.
Have a home screen for the student account with the ability to access currently registered classes, join a new class, view their performance, and a logout option.

Requirement 2b.
Have a home screen for the teacher account with the ability to create a new class, open a existing class, access the overall performance of the students, and logout.

Requirement 3a.
The teacher account will have the create new class option, which will prompt the teacher to enter a class number and name.

Requirement 3b.
In an created class, the teacher will be able to create a new group of questions to provide to the class, or access a group of questions that already exists.

Requirement 3c.
For every existing group of question created, the teacher will be able to edit current questions, and create a new question to be posted.

Requirement 4a.
When the student has the option to select a class and open the groups of questions available or request to register sending the request to the teacher.

Requirement 4b.
When the student has access to the class it will select a group of questions to open the content available.

Requirement 4c.
For every group of questions, the student will have the option to prompt a new question, or review previously answered questions, with the option to highlight questions they want to focus on.

Requirement 5a.
The teacher creating a new question will type the question, create multiple answer choices for the students marking which are the right answers, add an image, multimedia, or links if desired, and provide an explanation for each answer.

Requirement 5b.
The question screen for the student will show the question, the multimedia, image or links added by the teacher, and the multiple possible answer for the student to choose from. When an answer is chosen, an explanation for whether the answer is right or wrong will be prompted.

Requirement 5c.
The student will be given the choice to access the next new available question after answering a question, or be prompted to answer a new question in 24 hours.

Requirement 6a.
The overall performance screen for the teacher will show each of the students' performance in a question group, how successful the students are with a specific question,

Requirement 6b.
The overall performance screen for the student will show the percentage of answering the questions right for all the different group of questions they have answered.