CS 251
Project Report

Classroom Companion

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ABSTRACT

Classroom Companion is an interactive platform for professors and students for course related information exchange to assist classroom learning. Professors and students have their personalised accounts, which on login gives them access to their respective user accounts. The user interface is - website for professors and android app for students.

It allows the instructor to create, conduct and analyse quiz, create polls, view feedbacks and clear the doubts of students. Evaluation of the quizzes is done programatically.

Students can login with their IITB LDAP Credentials to answer questions to quizzes, respond to the polls, submit feedback or put up doubts for discussions (anonymously or openly). Procedures are implemented to deter sharing of answers via other apps in quizzes.

MOTIVATION

The main inspiration for this project comes from the need to connect more easily with the professors. Anonymity is also a crucial factor we noticed which is not provided by moodle. So another platform which would support students to involve more in lectures through regular doubts and also a few polls for decisions which would require feedback from the whole class felt like a good idea.

Also, quizzes are an important part of a course and conducting a quiz is a bit hectic. Conducting a quiz over an app is convenient for both students and the professor. Also quizzes at the end of lectures would become pretty easy.

PROBLEM STATEMENT

To design a platform for interaction of students with professors which will assist classroom learning and performance evaluation. And to include features with anonymous support to ensure no hesitation from students.
SOFTWARES USED

- Android Studio for student app
- Django for backend
- HTML/CSS for professors website
- Git and Github for version control and collaboration
- Doxygen and Javadoc for documentation

DELIVERABLES

The following deliverables were promised during proposal:

- **STUDENT APP:**
  - LDAP Login
  - Quiz with a timer which doesn’t allow switching to another app
  - Answer a Poll
  - Feedback (both open and anonymous)
  - Query (both open and anonymous)
• **PROFESSORS WEBSITE:**
  - List of students (with an option to add students through csv)
  - Quiz: Create new and view previous responses
  - Poll: Create new and view previous responses
  - Feedback: View feedbacks submitted by students
  - Query: View query threads and also answer them
IMPLEMENTATION

- **STUDENT APP:**

  Student side is an Android App built using Android Studio. The main activity of the app is a login page where students will login using their LDAP ids. Login is followed by a list of courses in which professors have added the respective student. Within each course there are 4 major features:

  - **Quiz:** This section shows running quiz (if any) for opened course. Opening the quiz initiates a timer indicating time remaining to answer a question. If user minimise or try to open other app simultaneously, the currently marked answer will be finalised and no further change will be allowed to avoid cheating.
  - **Poll:** This section is also similar to quiz section in terms of interface apart from the timer and security feature. Through this section professor can ask for students opinion on deciding things like dates for some quiz, extra class etc.
  - **Feedback:** Through this section, students will be able to submit an anonymous feedback to the professor
  - **Queries:** Through this section, student can raise a query for the professor to answer. There is a feature of asking anonymously.

- **PROFESSORS WEBSITE:**

  Professor side is a web interface built on HTML and CSS linked to Django, which allows professors to create their account and login using those credentials. After logging in professors will be able to see a list of courses they have created, or create new course. Within each course there are 5 sections:

  - **Students:** List of all the students that are added in that course with option to add more students. Once a professor adds a roll no in this list, only then will the course be visible on the student’s account.
  - **Quiz:** In this section, professor will be able to add new quiz and view responses of previously added quiz.
  - **Poll:** This section will be very similar to quiz section.
- **Feedback:** In this section, professor can see all the feedbacks he received.
- **Queries:** Through this section professor is able to answer and view the queries raised by students.

- **DJANGO Backend:**

  The data for the courses is stored and processed using Django as a backend. The Django web app forms a SQL database which can convert the data to JSON format using REST framework which can be sent to the android app. Django also provides URLs which can be accessed using HTTP requests from the app to post data to the database. Thus, completing the connectivity between the two interfaces.