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# Building Astudent-centred Peer e-learning Environment using React, Redux and Firebase

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**ABSTRACT:** Campus Charcha is an on-campus discussion forum for the students of the campus. It is a self-contained website meant to be used as a student interaction platform, where the students can ask questions and have discussions pertaining to Institute-specific as well as global issues and topics. The user needs to create an account to post, answer a question or request a poll. The main purpose of this website is to develop a one roof platform for the effective interaction, effective exposure, and a right direction toward communication.

**KEYWORDS:** Peer learning, e- learning, Q&A, React , Redux, Firebase , Javascript

## I. INTRODUCTION

Peer learning is based upon the understanding that student to student interaction promotes students' engagement with course content and thereby deepens learning. Students get to interact with each other on course content which deepens their cognitive understanding and improves interpersonal skills. There is widely acknowledged value of student-to-student interaction in promoting engagement with content and deepening learning. It helps to draw students into online learning processes and encourages them to take a more central role in their learning. This is why our project is relevant in the present time. Spontaneous and unstructured conversations can take place on other platforms whereas this project provides greater flexibility for participants with the opportunity of studying almost anywhere at any time. The website enables the students of the institute to sign-up using the institute's email ID using which they can login and use the website further. Authorised users are provided the following facilities:

- Ask a question or create a poll under any of the pre-defined categories.
- Answer any question or vote in any existing polls
- Upvote any answer the user supports.
- Comment on any of the answers.
- The answers of a question are sorted on the basis of number of upvotes.
- The comments on an answer are sorted based on date.

Paper is organized as follows. Section II describes similar work that has been done in this area. Section III describes the methodology which was followed to build the project. Section IV presents experimental results through screenshots. Finally, Section V presents conclusion.

## II. RELATED WORK

Navedanjum Ansari, Rajesh Sharmain their research paper Identifying Semantically Duplicate Questions Using Data Science Approach: A Quora Case Study have performed similar work. In their research they have concluded that

identifying semantically identical questions on, Question and Answering social media platforms like Quora is exceptionally significant to ensure that the quality and the quantity of content are presented to users, based on the intent of the question and thus enriching overall user experience. Detecting duplicate questions is a challenging problem because natural language is very expressive, and a unique intent can be conveyed using different words, phrases, and sentence structuring.

### III. METHODOLOGY

This project uses React for frontend, Redux for State Management Tools, Firebase for Back End and Material-UI for Icons. It is bootstrapped with CREATE-REACT-APP and redux template.

1. Firstly, the project is initialised and configured. The command. `npx create-react-app quora-clone — template redux` generates the boiler plate react project.
2. Next the dependencies are installed using the command `npm install *dependencies name*`The dependencies are :@material-ui/core, @material-ui/icons, firebase, react-flip-move, react-modal.
3. Lastly the components are built. The functional components are built and the concept of HOOKS is implemented to achieve the full-fledged UI and Functionality.

### IV. EXPERIMENTAL RESULTS

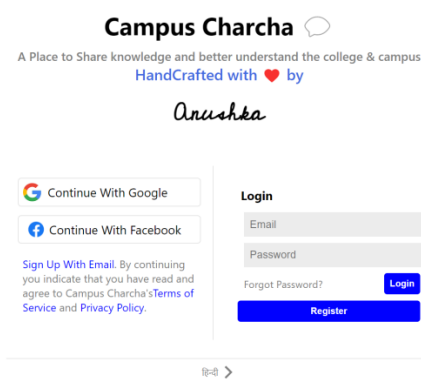


Figure 1

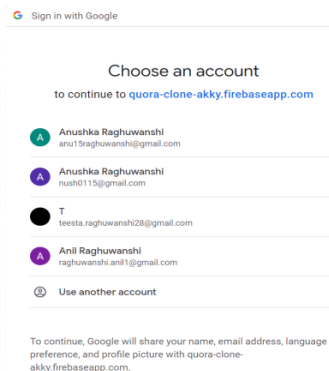


Figure 2

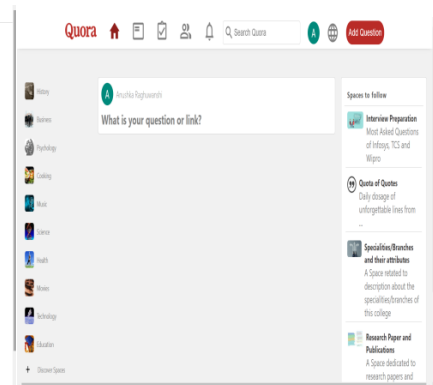


Figure 3

### V. CONCLUSION

We have implemented an online engineering platform that connects the information needs of students with information solutions provided by real students. Anyone can easily signup through an email/ a google+ account / a Facebook account. The flexibility in sign-up options allows us to reach out to a plethora of people. The website is simple and easy to use. explore various topics and absorb a ton of information and perspective or can step up and air his/her views to a diverse audience. People can comment on other people's answers or commend their views as they like all within the boundaries of civic sense. The concept of upvotes helps keep the motivation for writers going whereas the downvotes or collapsed answers compel a user to think more and write thoughtfully.

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