EUROPEAN UNIVERSITY OF LEFKE

FACULTY OF ENGINEERING

Graduation Project I

Student Forum

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My project is a forum for students. The project's main idea is a platform where students from different institutions can share questions, answers and projects about topics discussed in class.

The platform aims to bridge the distance between students in different locations, foster student community building and enable students to get and share their perspectives on different topics and fields.

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1. Introduction

1.1. Problem definition

It is mostly said that one of the best ways to learn is by sharing with others. This doesn't just apply to answering the questions of others but also to sharing one's questions. These help in the retention of information. It is therefore important to have platforms where these activities are encouraged.

This application will bring together a community of students from different fields, interested in different topics; exchanging thoughts and ideas and gaining new perspectives in a social setting. Most educational platforms are centered around teacher-student interaction which by itself is a good approach. This sometimes disregards a percentage of students who prefer a less formal approach to learning. This platform aims to address this by designing the system primarily to foster this student-student interaction, although other individuals(like teachers) can participate with the platform.

This project by no means aims to discredit the conventional instructor-student approach but to complement it. Students can share what they learn in the classroom and ask questions regarding it.

1.2 Goals

The goal of this platform is to:
1. Foster interaction between students from different universities
2. Provide a platform for the sharing of perspectives relating to thr courses of students
3. Bridge the gap between the curriculums of schools.
4. To facilitate student community building

2. Literature Survey

Below are similar projects and how they differ or are similar to mine:

1. **thestudentroom.co.uk**: This forum will be similar to mine in terms of the classic interface(although mine will have a more modern touch). But unlike this forum which accommodates a broader range of topics like Entertainment, Travel, Current Affairs, etc, which can easily give room to aimless discussions, mine aims to restrict the categories to academics.

2. **studentedge.org/forum:** In addition to a more restrictive range of topics, my project aims to implement a more personal feel to the forum, unlike "thestudentedge" forum which limits its

community to a general discussion group. My project will implement the creation of personalized groups containing selected persons with the aim to foster closer communication among these individuals around a specific subject matter.

3. **physicsforums.com:** Amongst all aforementioned forums, this comes closest to what I aim to build but unlike this which focuses on Physics, Engineering and the Sciences, my project will allow for a broader range of academic subjects with the goal to become a one-stop platform for all things academics.

3. Background Information

3.1 Required Frameworks and Software

NodeJs:
I choose nodeJs because of the performance benefits of its asynchronous programming Model and also to take advantage of the various npm packages available.

React:
I chose React to pair with NodeJs to take advantage of the Javascript feature to write the same syntax in both frontend and backend which will create uniformity in my code and also take advantage of the reusability of react components.

Visual Studio Code :
With hundreds of languages supported, VS Code makes it easy to be productive with features like syntax highlighting, bracket matching, auto-indentation, box selection, snippets, and more.

MYSQL :
MySQL is at the top of the list of fast transactional database solutions available today.

3.2 Other software

Figma:
For frontend design

Bitbucket:
Used for version control
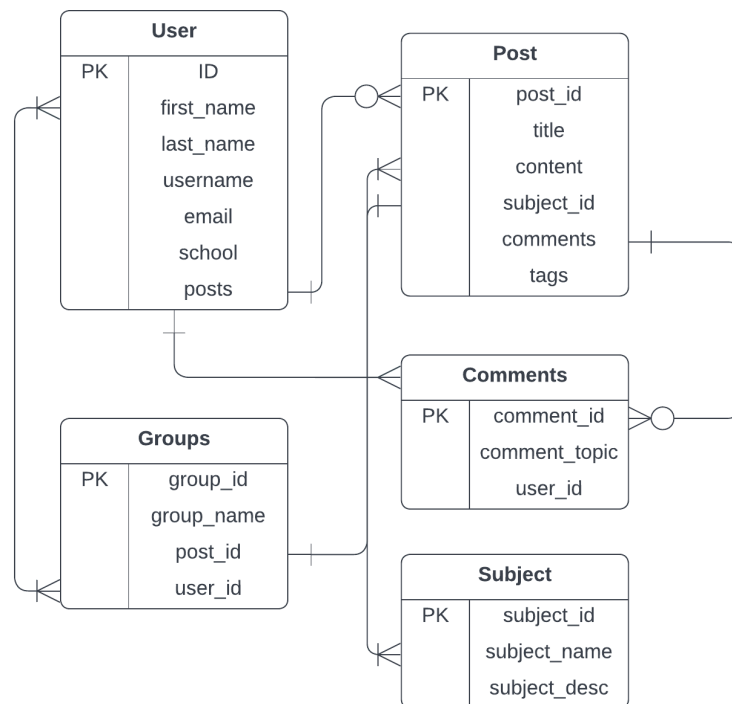
4. Modules

4.1. Frontend module:

The frontend of the forum(built with React) contains the following subsections/pages

- Login & Signup

- Home Feed page: This is the first page seen after the user login or sign-in successfully. It will feature posts/updates on/related to the user activities. Some considerations are posts from groups the user is a member of, updates from discussions the user is engaged in, etc.

- Group page: Would feature groups created by the user and groups the user was added to. This group is different from the general discussion which is public to everyone.

- Discussion following: This will feature all the public discussions/subjects the user is currently following.

4.2. Backend Module:

The backend(written in nodeJs) contains the following submodule:

- Database configuration and management: This module manages the database. The database schema to be used in the forum is shown below:

- Route module: This module will handle all routing mechanisms in the project.

- Controller module: This directs routes to their relevant business logic

- Business logic: The business logic is the part that handles how the information in the database will be created, stored or changed.

5. Risk Analysis:

Some risks associated with the development and deployment of my projects are:

- **Mishandling of user data:** If the business logic of my project is not properly implemented in relation to data collected in sign-in, etc, it could leave a hole in the system which could give room to a data breach.

- **Inadequate error handling:** I cannot vouch for excellent technical skill in handling server errors currently, this might pose a risk as a result of not handling potential errors which might crash the system.

- **Too rigid or too flexible middleware:** Middleware will be implemented for authentication, security, data management, etc. The risk arises if the middleware becomes too restrictive leading to slower processing time and might reduce the scalability of the system, or too flexible which might pose a security risk.

6. Ethics

- **Respect for user privacy and security.**

- **Value for performance:** The front end will be split into components and aim to load only requested pages instead of every page on the website. This will maximize the performance of the platform.

- User data will be properly managed and authenticated from the business logic and middleware function of the project.

7. Conclusion

7.1. Benefits:

a. Benefit for users:
- The project will be a platform for the user to get answers to academic questions they might have.
- It will give the user the opportunity to share their learning which will help in active recall of what they have learnt.
- Users of the platform will be able to build a community around their academic interest.

b. Benefit for me:
- It will be an opportunity to practice frontend and backend technologies.
- Working on a medium-scale project like this will increase my confidence to take on more challenging tasks in the future.

Why I chose this project:

I am personally interested in EduTech and Web development. This is the main driving motivation behind choosing this project. I am also a big advocate of learning by sharing your knowledge, getting a new perspective from friends helps in retaining information, these are the building blocks of this project.

Also, I thought about the issue of isolation for homeschoolers; how can they feel more connected to other students even while they study at home, also, how can students from all walks of life, different nations of the world and backgrounds build community beyond the walls of their individual schools and environment. From these questions was the project selected.

7.2. Future works

I'm not definite if I would continue working on this project but the possibility is very high. If I do continue, I would like to implement a one-to-one chat feature to this project for a more personal touch to community building for students.