PROJECT PROPOSAL

Title of the project: Notebase

Project team (Cake Tech**):**
- Ataberk Çeliktaş - 17070006048
- Emre Uzun - 17070006006
- Keremalp Durdabak - 18070006028
- Aynur Cemre Aka - 18070006007

Advisor's name: Assoc. Prof. Dr. Korhan Karabulut

Overview: Studying for a course is difficult in college, especially if you only have your own notes as a study material. Our project will help students by providing 'extra' materials for them to study, from other students who have taken the course from previous years. This will allow them to study from a plethora of different notes for a specific course.

There are several companies that are implementing a solution for this problem. (e.g. Chegg, Coursera, Slader) But they usually only provide the necessary course material to those who pay or subscribe to their system.

Notebase will provide a mutual trust system among peers where a student needs to upload a handwritten material, in order to see other study materials (i.e. Quid pro quo). Hence it will encourage students to upload their handwritten notes that they have at their disposal.

This will not only incentivize students to contribute more, but also increases the amount of authentic study materials in the system, thus creating a 'local community' among students where it removes the 'middleman' (i.e. company paywall)

There are several problems that might occur during the implementation process;

1. Students might re-upload the same study material, in order to gain access to more materials without contributing to the system. (i.e. exploiting the peer trust system)
    - We will implement an AI system that will check the ‘authenticity’ and ‘legitimacy’ of the study material provided by a student.
    - We train the model with randomly selected materials of lecture notes that we find online and scan our own lecture notes if necessary.

2. Format of the study materials differ from each course (e.g. PDF, PPTX, DOCX, JPG) this would cause a problem in the database and how the materials will be displayed in general.
   We have several options to solve this problem;
    - We can narrow down the valid extensions and use only the most popular one.
    - We can provide a conversion service among several extensions to one main extension.

3. Students might submit materials that are subject to copyright or any original material that is provided by the lecturer.
    - We would implement the system in a way that the platform only accepts handwritten documents with the help of AI (such as training an AI model that will classify whether it's handwritten or not).
    - That way we can prevent the distribution of copyrighted lecture notes that are written in LaTeX or in any other digital environment.
    - We will provide a report system for the copyrighted notes that are handwritten (see item below).

4. AI might classify documents incorrectly (i.e. False Positives and/or False Negatives).
    - If AI fails to classify documents properly, we would provide a complementary report system that the users will report the incorrectly classified document to the administration and the legibility of the said document will be decided manually (i.e. Admin Panel).

We are suitable for performing this project because our team has several past experiences in tech areas that are necessary to implement. Our team consists of 4 developers that are experienced in Web, Mobile, AI and Backend Server, we will divide the workload by expertise and fulfill the necessary requirements.

We are interested in this field and this problem specifically because we as university students are the ones that are experiencing the problem at first hand, implementing this project will help future students to study from different study materials and improve education as a whole.

Aims and objectives:

Aim

- The project aims to provide extra study materials for students that are taking a specific course, and to create a hub among them. Students from all over the world can share their notes and study materials in order to help each other study from different sources.

Objectives:

- Designing a user-friendly Mobile and Web interfaces
- Building a website in which students can upload their study materials and display other user's study materials by tag and their personal preferences.
- Building a mobile application that can scan an image and convert into a convenient format for uploading and displaying
- Implementing an AI system that checks the material to be uploaded is eligible, rejects otherwise.
- Providing a peer-trust system where in order to view study materials, you need to upload your 'authentic' material, and implementing an AI based algorithm to check the 'authenticity' of the materials.

Expected outcomes:

At the end of the project, we intend to submit a functional mobile and web based note sharing application. Students will register and upload their notes to the system, AI will check the eligibility and authenticity of the notes that will soon-to-be uploaded to the system. The application will have an incentivized uploading system where in order to display other notes, you need to upload your own notes to the platform. The web and mobile will function the same except some minor differences (e.g. Instead of camera scan, an upload area will be implemented for the web.)

Type of project:

This is a development project where we implement both Web and Mobile platforms with AI control systems in the backend.

Keywords:

- Artificial Intelligence
- Software Engineering
- Mobile Software Development
- Web Application