



Abstract

The rapid growth of digital education has increased the need for efficient and reliable platforms for sharing academic materials. This project aims to provide a question-answer web application and document sharing system among students designed to support accessibility of course-related resources such as lecture notes, exercises, and past exams. The system has a token-based reward mechanism to encourage active participation and content contribution. An AI-assisted chatbot will be integrated to improve search efficiency by enabling natural language queries. The web application is developed using web technologies aiming to focus on usability, security, and reachability. A relational database management system is used to store and manage user data, shared documents, and all transaction data efficiently. The proposed system's main goal is to enhance collaborative learning and improve accessibility to all education resources within university environments.

Methodology

The project introduces an AI-powered web platform that combines semantic search, natural language processing, and a credit-based sharing mechanism. Unlike conventional file-sharing systems, it intelligently matches users with relevant study materials while rewarding active contributors. This integration of intelligent retrieval and fair access management enhances both user experience and learning efficiency.

The project will follow the waterfall software development model, covering requirement analysis, design, implementation, testing, and deployment stages. Technologies such as Python, JavaScript, and SQL will be utilized for backend, frontend, and database development. AI components will employ natural language processing for intelligent search and chatbot functions. UML diagrams and system modeling tools will support the design and documentation process.

RESULTS & BUSSINES IMPACT

- The system developed has unique features in both technical and design. The project's core concept, a points-based sharing and reward system, offers an innovative mechanism aimed at increasing knowledge sharing by gamifying user interaction. This structure allows students to earn points as they upload exam samples, access other content with these points, and create a self-growing loop. This mechanism, thanks to its unique algorithmic logic, could be considered a utility model or software patent. Furthermore, the developed AI-powered search system, based on course code or course name, allows users to find results not only by-word matching but also by content meaning. For example, even if a user types "Computer Network" instead of "CMSE344" the system can return accurate results by leveraging course-specific historical data and a tagging algorithm. This semantic search feature is made possible by the unique AI-based content matching algorithm developed within the project. Additionally, the platform's modular web interface and the integrated display structure of the scoring system with user profiles are also noteworthy in terms of visual design. Designing the interface to be simple and understandable for students has created a unique design that prioritizes the user experience. Therefore, the overall appearance and interaction pattern of the interface are candidates for industrial design registration.
- Also, the chatbot module and suggestion system, which will be added to the system in later stages, will serve as an artificial intelligence-powered learning assistant. This module will enable students to receive automatic tag suggestions when uploading written content and be directed to relevant exam examples. In this respect, the project takes an innovative step towards becoming not only a traditional data sharing platform but also an intelligent learning support system.

