

StudyPilot

Group 3

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VISION STATEMENT

The StudyPilot System will be used to support academic instruction by reducing the administrative workload associated with teaching university-level courses. The system will assist instructors by automating repetitive student support tasks and by generating course-related materials from existing instructional content. StudyPilot will operate as an academic workflow tool that assists, rather than replaces, instructor decision-making and tasks.

The system will analyze pre-existing lecture slides and course notes uploaded by the instructors to generate quizzes, assignments, surveys and study guides. Generated materials will be explicitly aligned with course learning objectives that are identified within the uploaded instructional content. Instructors will be able to review, edit, and approve all automatically generated materials before and during release to students. Study guides generated by the system will be displayed within the interface and may be updated as additional course data becomes available.

The system will also manage student questions through a communication interface. Instructor responses to student inquiries will be recorded and reused to support future interactions when similar questions are flagged. This functionality is intended to reduce repetitive communication while ensuring that students receive consistent and instructor-approved guidance. The system may organize and prioritize student inquiries based on content and frequency. The instructor will have access to personalize the sorting system of these emails. StudyPilot will provide instructors with summarized information about student interactions and performance, allowing them to identify topics that students find difficult. It will provide group base organisation based on the requested surveys by instructors.

The primary users of the system will be university professors, lecturers, and teaching assistants responsible for managing course content and student communication. Students will interact with the system to receive course materials and responses to questions, though some system functions will be restricted to instructional staff. The system is intended to support large or content-heavy courses where administrative demands are significant.

In the initial release, the system will operate using simulated or non-persistent data storage. Future versions of the system may integrate with learning management systems such as Canvas, Moodle, or Blackboard and may include more advanced analytics and personalization features. The system is envisioned as a web-based application with the possibility of future extensions.

The StudyPilot System represents an improvement over existing tools that require instructors to manually create assessments and repeatedly answer similar student questions across multiple platforms. StudyPilot aims to simplify instructor workflows and reduce time spent on administrative tasks.

The project will be considered successful if instructors report reduced time spent on repetitive communication and assessment preparation, improved consistency in student support, and overall preference for the system compared to existing workflows. The system is intended to adapt to future AI technologies as they become available.

BIG USER STORIES

Big User Stories

Automated Assessment Creation

As a university professor, I want to upload my existing lecture slides into Studypilot so that the system can automatically create quizzes, study notes and guides.

Budget: 2 weeks

Priority: high

Automated Response Memory for Student Questions

As a university professor, I want the system to store my response to student questions so that they can be reused for similar questions in the future.

Budget: 8 days

Priority: high

Suggest Previous Responses to Students

As a student, I want to receive an instructor approved response to similar questions as mine or common questions so that I can get help quickly.

Budget: 8 days

Priority: high

Academic Workflow Management

As a university instructor, I want all course materials, assessments and student interactions to be managed in one platform. That way I can reduce administrative overhead and navigation confusion.

Budget: 2 weeks

Priority: medium

Difficulty Analysis and Content Outcomes

As a university instructor, I want an analytics dashboard that analyzes quiz, assignments and test results so that I can quickly identify which concepts the class is struggling with and adjust my teaching accordingly.

Budget: 8 days

Priority: medium

Adaptive Personalized Study Guide

As a student, I want the system to generate a personalized study guide based on my quiz and assessment results. So that I can focus my time on the specific lecture materials and concepts I need to improve.

Budget: 4 weeks

Priority: medium

USER STORIES

Instructor Question and response Management

The system shall allow a student question to be created and stored in memory

Budget: 3 days

Priority: high

Instructor Question and Response

The system shall allow an instructor to reply to a student question.

Budget: 3 days

Priority: high

Unit testing for Domain and logic

The system shall include unit tests for similarity matching logic.

Budget: 5 days

Priority: medium

Basic Instructor GUI

The system shall display a list of submitted student questions.

Budget: 5 days

Priority: high

Data Storage

Have a storage system to be replaced with real database in future iterations

Budget: 8 days

Priority: low

Basic GUI

Allow instructor to enter and save a response

Budget: 5 days

Priority: medium