

**CLARK UNIVERSITY**

**MSCS-3999**

**CAPSTONE**

***(Fall 2025)***

**Team - 6**

**Smart StudyMate – AI-Powered Learning Assistant**

**Assignment 3**

**Vision/Product Road Map/Release Planning**

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# PRODUCT VISION

The vision of Smart StudyMate is to create a smart educational aide that will allow students and learners in universities, colleges and training institutions to engage with their study materials more effectively. Smart StudyMate uses simplified textbooks and notes, and takes advantage of interactive summaries, Q&A, and video-type explanations, to reduce the feeling of information overload, improve accessibility, and embrace a diversity of learning styles.

This product aligns closely with the institutional goals of improving academic success, gaining productivity, and providing digital innovation for education. While our initial focus is to develop an MVP for individual learners, Smart StudyMate is designed for scalability, and can be used by entire campuses in the future and/or partnered with edtech collaborators. Smart StudyMate focuses on being summarization, interactive and engagement focused to be consistent with modern learning purposes while being clear and focused and in scope.

# PRODUCT ROAD MAP

The holistic view of the product road map for Smart StudyMate based on the product vision that highlights the core features of the product are as follows:

**Core Learning Features**

* File upload support for PDFs, notes, and textbooks.
* Automated text extraction and preprocessing.
* AI-powered summarization of study materials.
* Interactive Q&A chatbot powered by LLMs.
* Video explanations (text to narrated video generation).

**User Experience & Interface**

* Dashboard for managing uploads, summaries, and Q&A.
* Video playback panel for learning through generated videos.
* Chatbot interface integrated seamlessly into the dashboard.
* Simple and intuitive UI/UX for student-friendly navigation.

**Backend & Data Management**

* Database schema for structured storage.
* Storage and retrieval of both raw documents and processed summaries.
* Integration across upload → summary → Q&A → video workflows.

**Testing, Quality & Integration**

* Summary readability and accuracy testing.
* Chatbot performance and load testing.
* End-to-end integration of all modules (upload, summarize, Q&A, video).
* QA validation before deployment.

**Deployment & Delivery**

* Cloud deployment (Render for backend, Vercel for frontend).
* Documentation for end-users and developers.
* Final product demo and delivery.
* Scalability groundwork for future institutional adoption and LMS integration

# RELEASE PLANNING

The release timing for the specific product functionality are as follows:

**Pre-Sprint (Week 1):**

Requirements gathering.

High-level architecture design.

Environment setup (GitHub repo, Jira).

**Sprint 1 (Weeks 2–3): Foundation:**

Frontend: File upload dashboard + UI design.

Backend: PDF parsing, text extraction.

Database: PostgreSQL schema setup & integration.

Deliverable: Working file upload + text extraction.

**Sprint 2 (Weeks 4–5): Summarization:**

Frontend: Display summaries in dashboard.

Backend: Summarization pipeline (HuggingFace).

Database: Store parsed text & summaries.

Deliverable: Upload → Summary generation end-to-end.

**Sprint 3 (Weeks 6–7): Q&A Chatbot**

Frontend: Chatbot UI.

Backend: Q&A pipeline

Database: Optimize query handling.

Deliverable: Interactive chatbot answering from uploaded material.

**Sprint 4 (Weeks 8–9): Video Explanations + Integration**

Frontend: Video display panel.

Backend: Video explanation module (text → narrated video).

QA: End-to-end integration & testing.

Deliverable: Full MVP (Upload + Summarization + Q&A + Video).

**Post-Sprint (Week 10):**

Documentation (user + technical).

Final deployment on Render (backend) + Vercel (frontend).

Presentation & project delivery.

# PROJECT MANAGEMENT TOOL

For managing our project, we are going to be using JIRA. We are planning to move forward with SCRUM based Agile methodology.

A screenshot of a computer

AI-generated content may be incorrect.

JIRA Board Link:

<https://studymateai.atlassian.net/jira/software/projects/SCRUM/boards/1/backlog>

# GITHUB SETUP