MATURI VENKATA SUBBA RAO (M.V.S.R) ENGINEERING COLLEGE
(An Autonomous Institution)
Department of Information Technology

SMART PREP

Batch No -05

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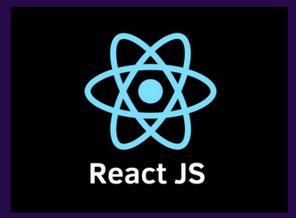
Internal Guide
Maya B Dhone

SOFTWARE REQUIREMENT SPECIFICATIONS

Software Requirements

- Python
- Django
- React
- Visual Studio Code
- Google.generativeai



Hardware Requirements

- RAM 8GB or higher
- Windows 10 or higher

FEATURES OF THE PROJECT

PDF Upload: Teachers can easily upload PDF files containing educational materials related to various subjects directly to the system.

Contextual Question Answering: Students can ask questions related to the content of the uploaded PDF files using natural language queries. The system provides contextually relevant answers based on the content of the PDF files.

Text Processing: The system processes the uploaded PDF files to extract text and segment it into smaller, manageable chunks. This ensures efficient analysis and retrieval of relevant information.

Contextual Representation: Text chunks are transformed into contextual representations using advanced embedding techniques. This allows the system to understand the semantic meaning of the text and provide accurate responses to user queries.

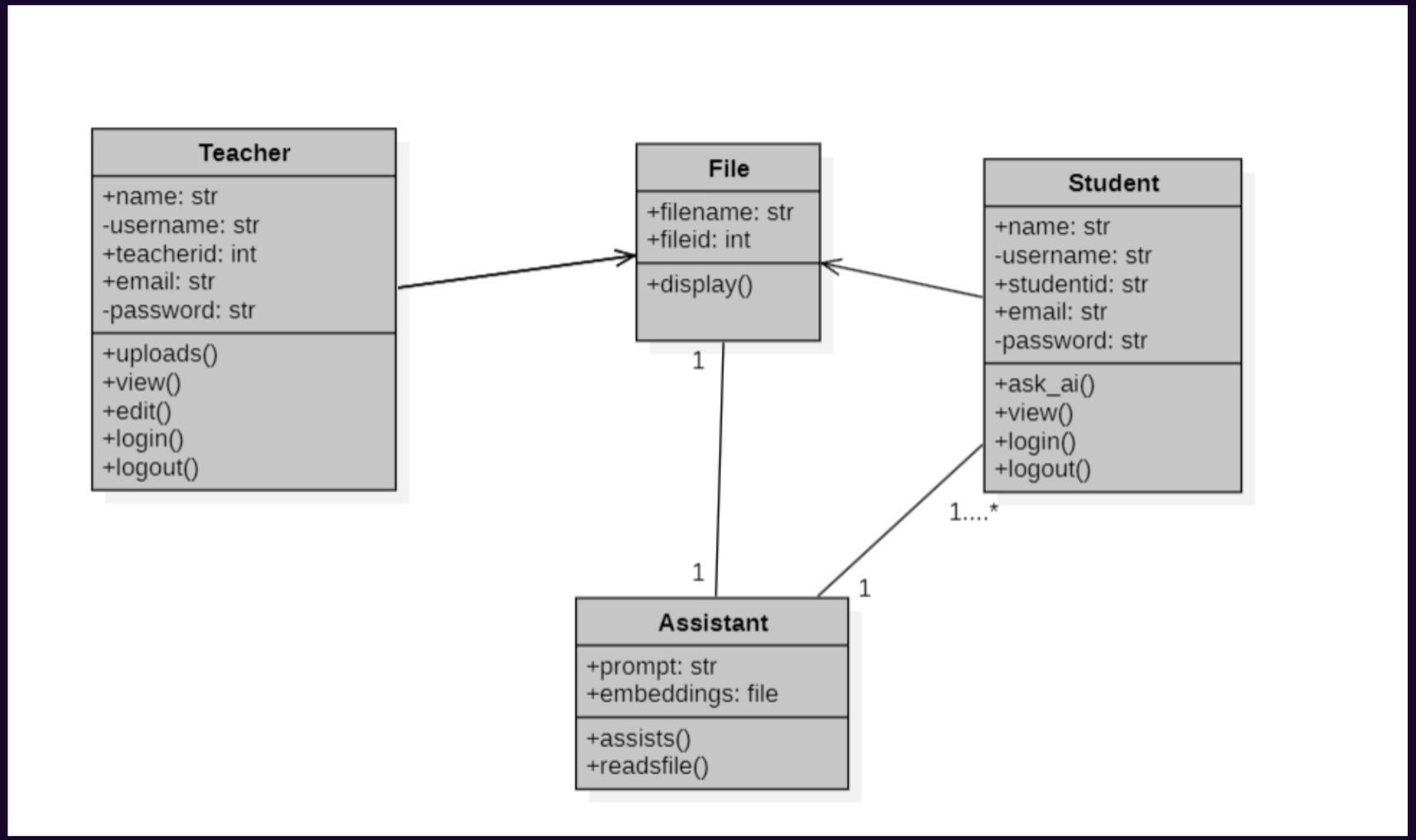
Efficient Search: A vector store is created using FAISS to enable efficient similarity search based on the embeddings of the text chunks. This ensures quick retrieval of relevant information in response to user queries.

User-Friendly Interface: Users interact with the system through a user-friendly web interface provided by Streamlit. This interface makes it easy for students to ask questions and receive answers in a seamless manner.

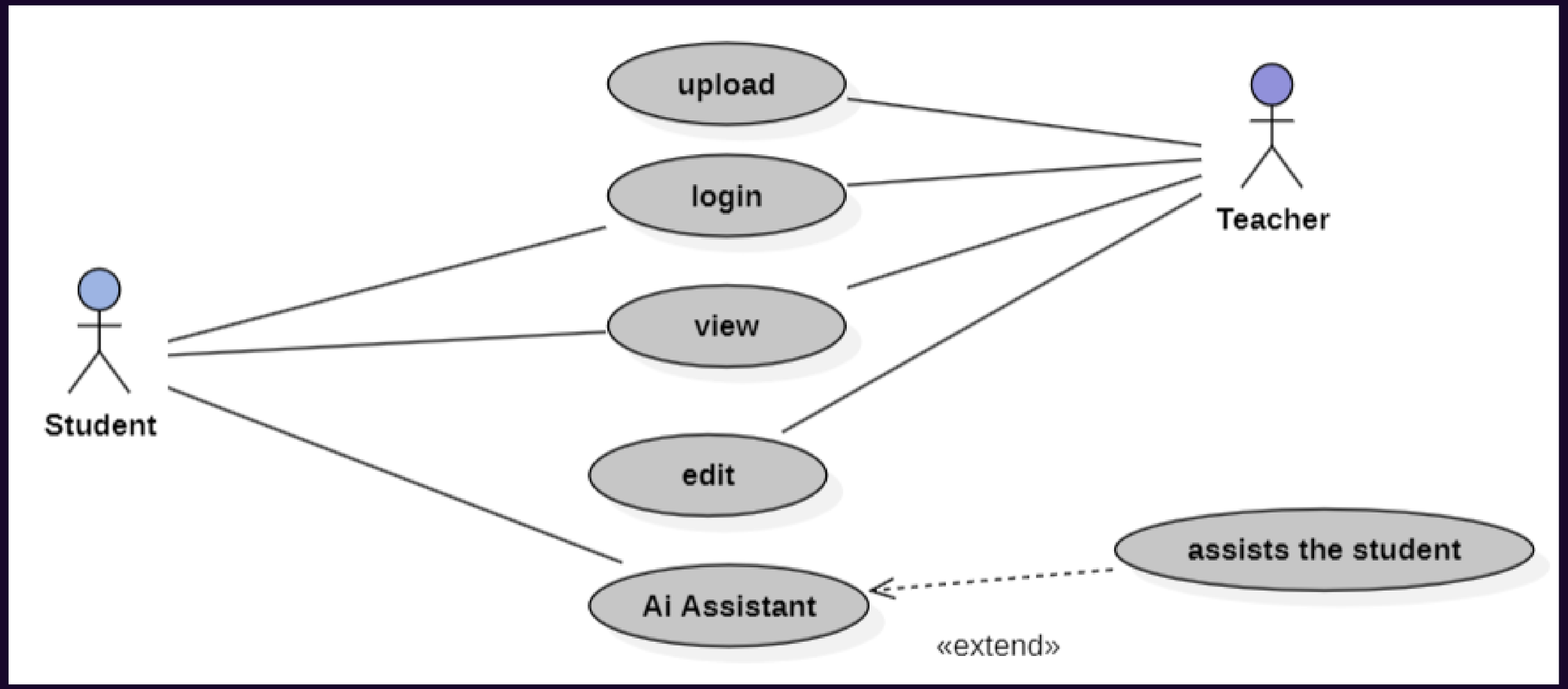
Educational Resource Access: Students have access to a wide range of educational resources uploaded by teachers. They can ask questions and clarify doubts directly from the educational materials provided.

UML DIAGRAMS

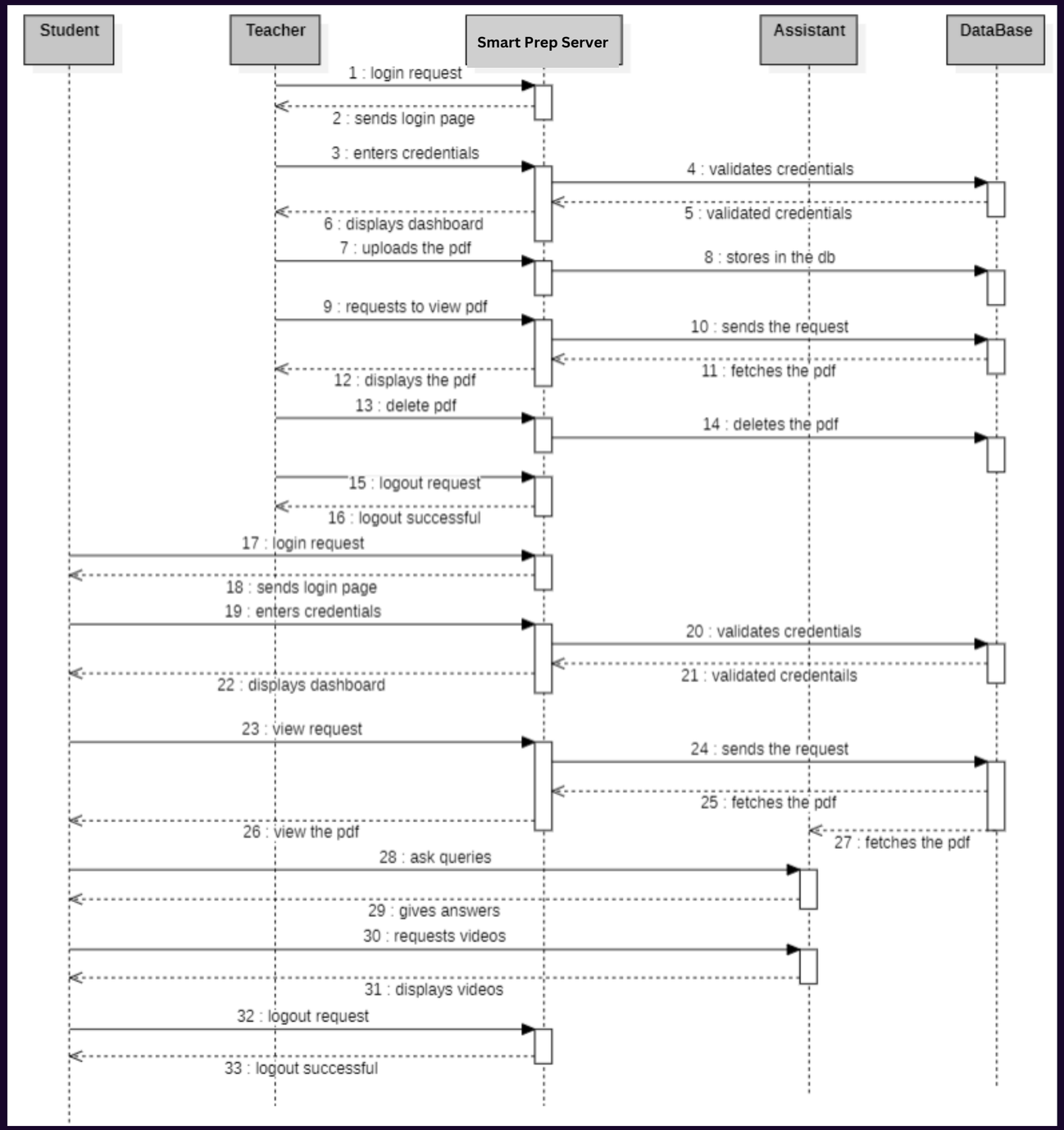
Class Diagram



Usecase Diagram



Sequence Diagram



ALGORITHM DESCRIPTION

- Recursive Character TextSplitter

Used for segmenting the extracted text into smaller, manageable chunks. This segmentation facilitates efficient processing and analysis of the text data.

- Google Generative AI Embeddings

Used for generating embeddings for the text chunks. Embeddings are numerical representations of text that capture semantic meaning, enabling contextual understanding and similarity computations.

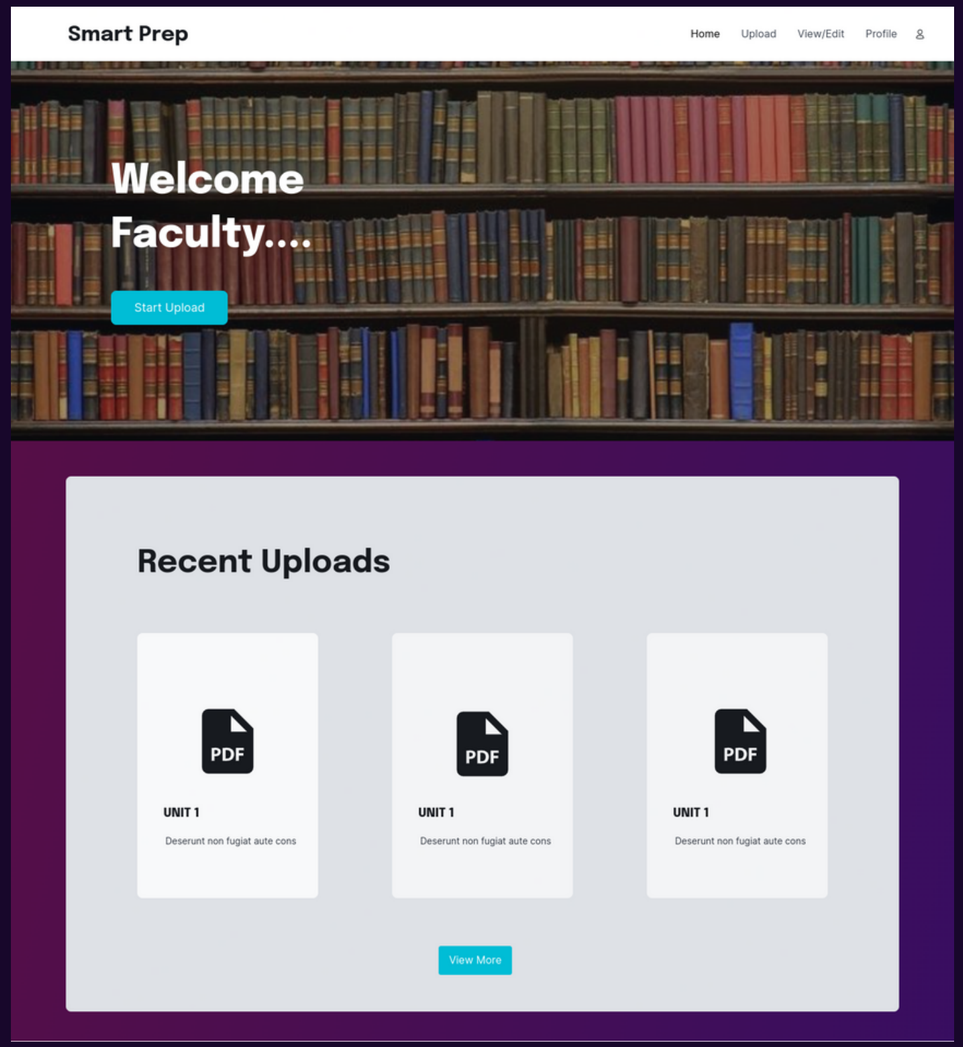
- FAISS (Facebook AI Similarity Search)

Used for creating a vector store and performing efficient similarity search based on the embeddings of the text chunks. This allows for quick retrieval of relevant information in response to user queries.

- Google Generative AI (Gemini model)

Used for generating contextually relevant answers to user questions based on the content of the PDF files. This model is trained on large-scale conversational data and fine-tuned for question answering tasks.

WIREFRAMES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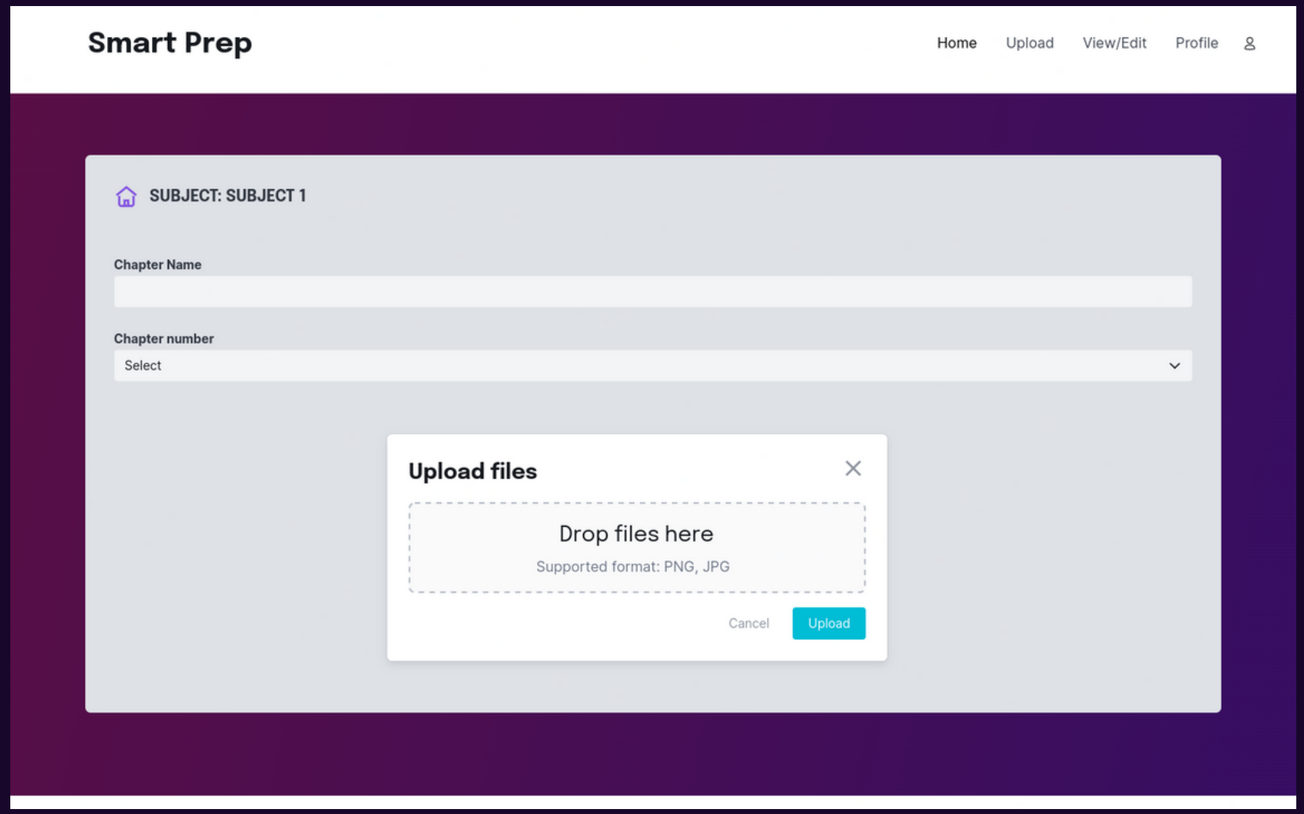
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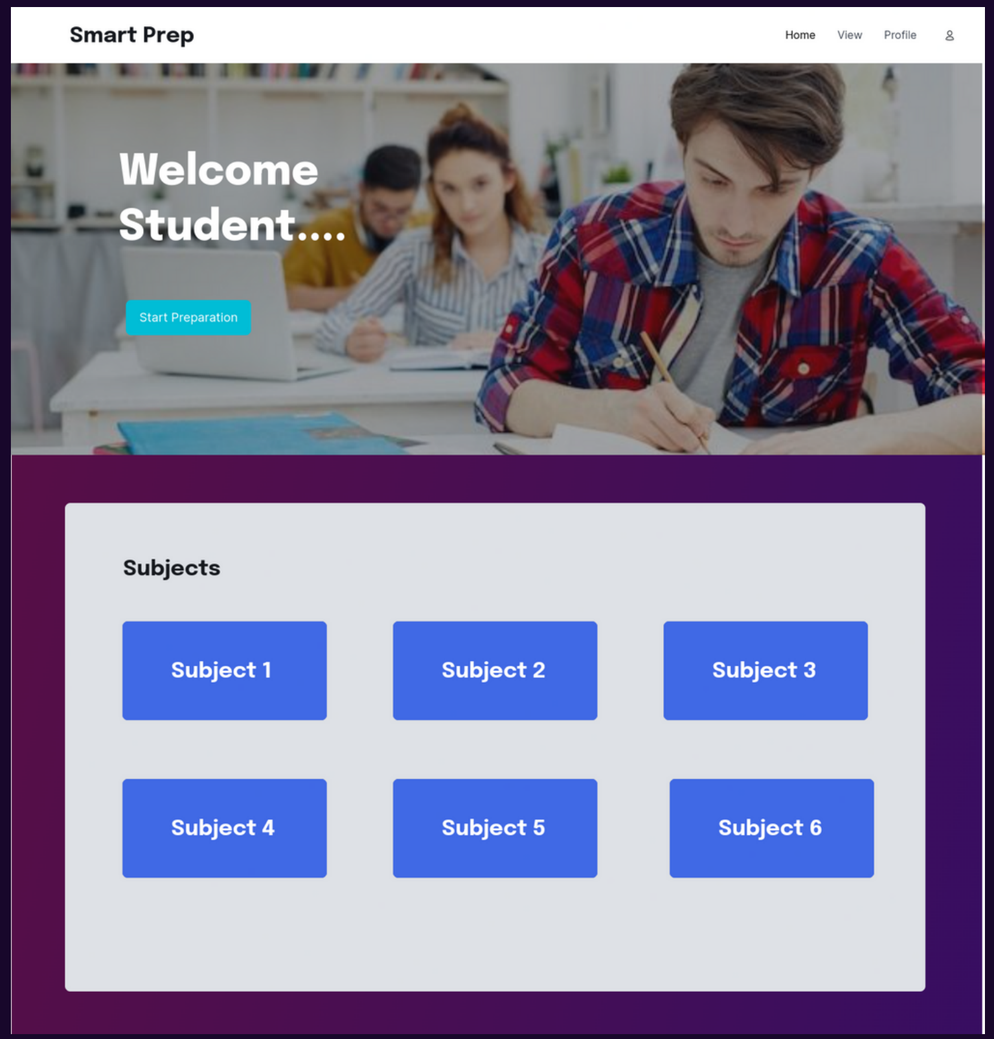
WIREFRAMES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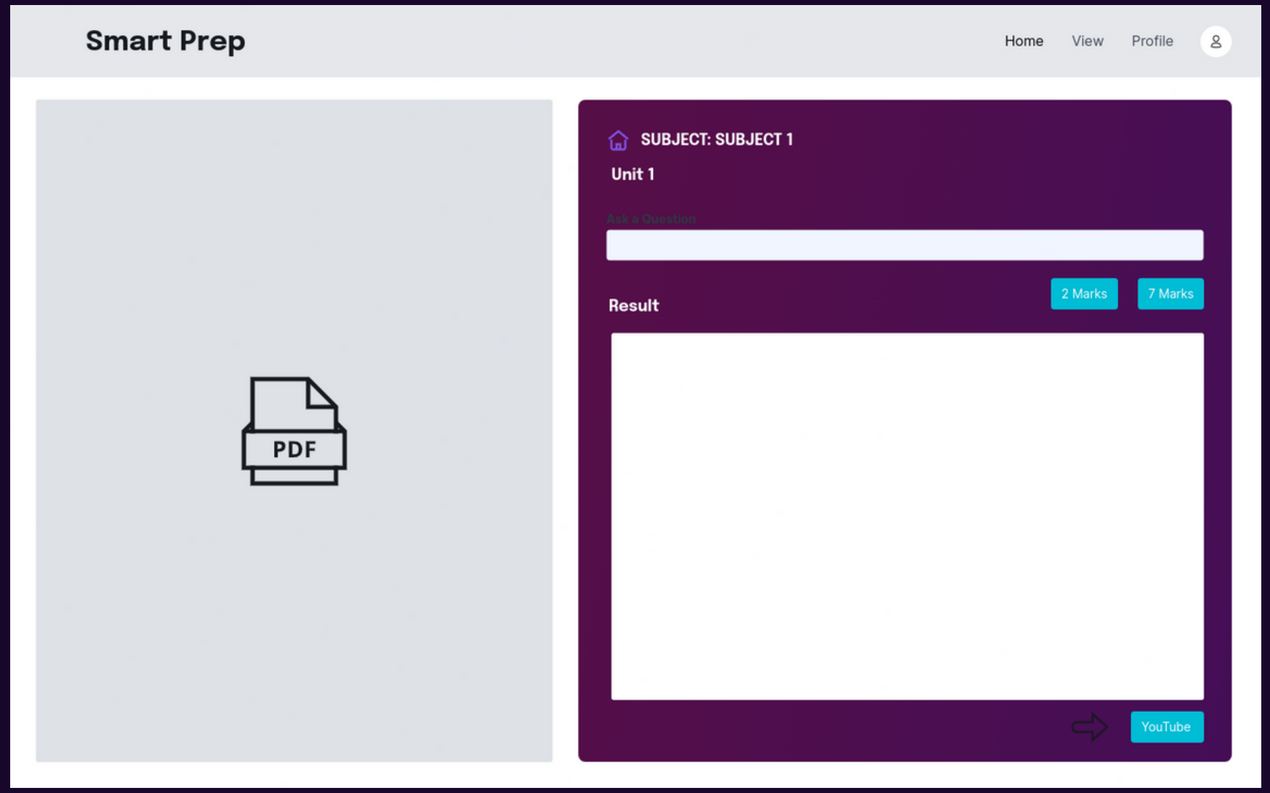
Subject 4
Subject 5
Subject 6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Unit 1
Ask a Question
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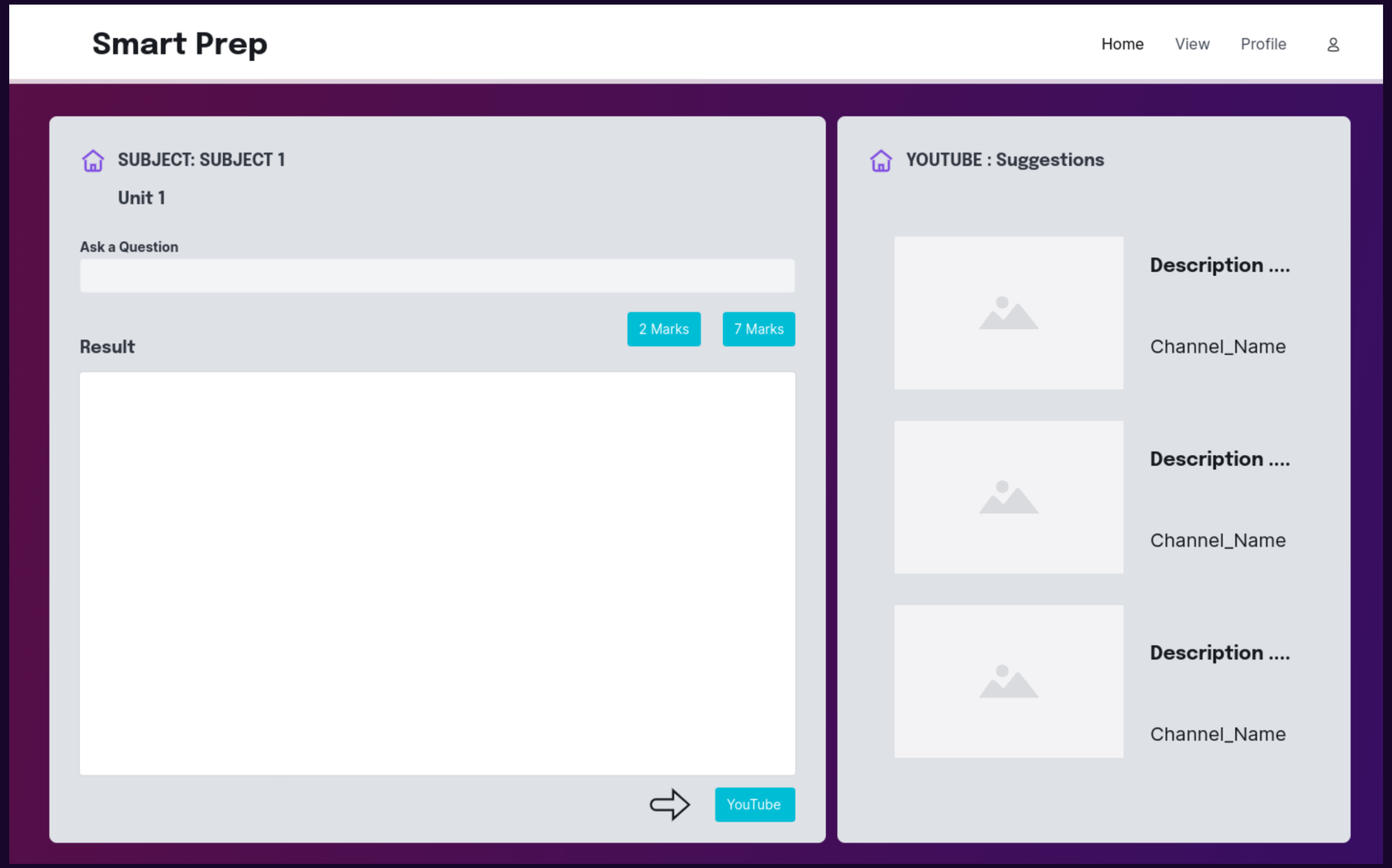
WIREFRAMES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SUBJECT: SUBJECT 1
Unit 1
Ask a Question
2 Marks
7 Marks
Result
YouTube
YOUTUBE : Suggestions
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THANK YOU