Perfect Studymate

PROPOSAL PRESENTATION

Team Kapstone

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CONTENTS

Problem Statement

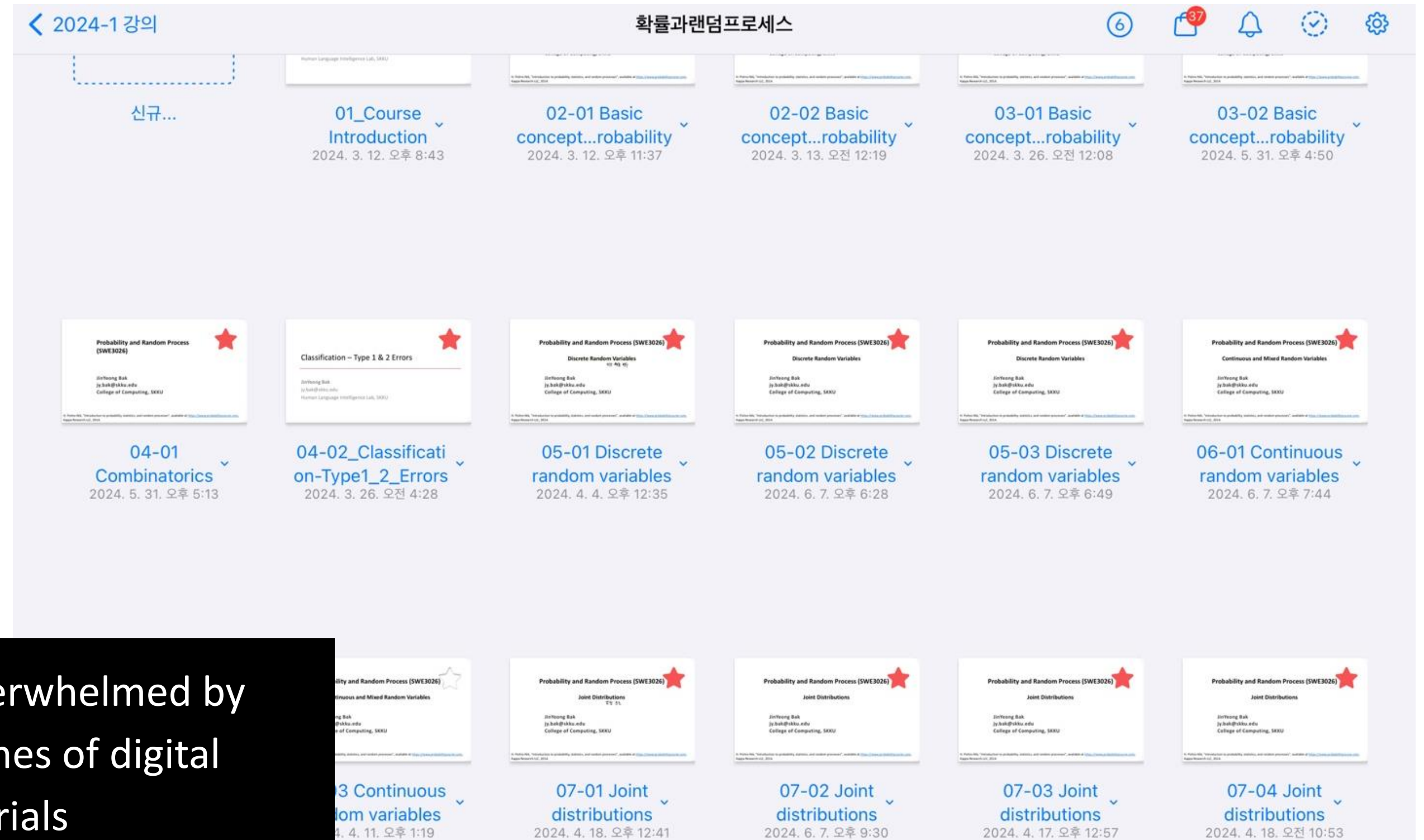Students often feel overwhelmed by managing large volumes of digital lecture materials

Problem Statement

is waterfall model good for small project or large project?

The Waterfall model is generally more suited for **large, well-defined projects** rather than small or rapidly changing ones. Here's why:

Generative AI tools provide generalized and broad answers and even often produce **inaccurate or biased** information

Waterfall is the best for small project, why is it?

Waterfall is often considered the best approach for small projects for several reasons:

Is waterfall good for small or large project?

Waterfall is generally better suited for **small to medium-sized projects** rather than large projects. Here's why:
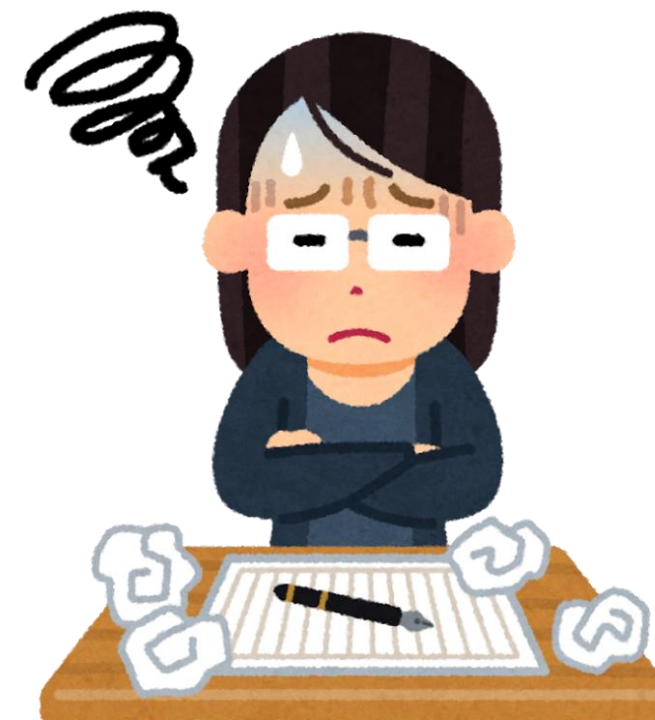
Problem Statement

Generative AI may produce inaccuracies due to **differing content and terminology** from lectures students are taking

Round toward zero??

Round to zero ??

Problem Justification

- Provided answer will be more relevant and trustworthy

- More personalized questions and quizzes will be provided

- More educative approach will be used to provide information

Related Work

ChatGPT

- Generative artificial intelligence chatbot, the fastest-growing consumer software application
- Informative but not educative
- Hallucination
- Lack of personalization
- Non-efficient handling of large data
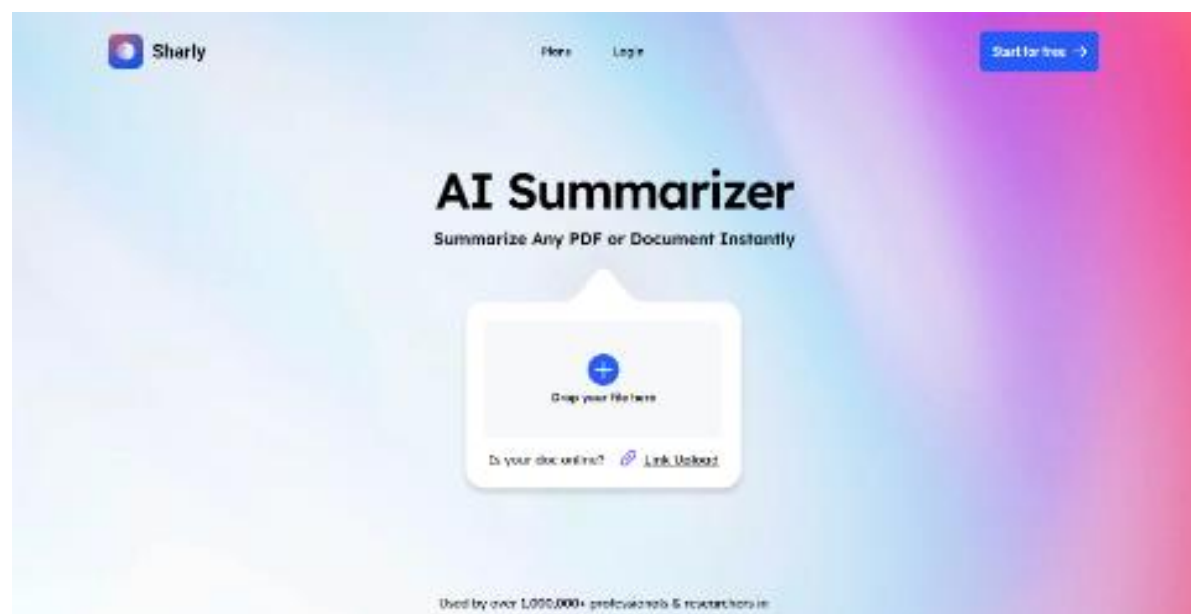

Sharly AI Summarizer

- Generates summaries of PDFs, documents, and audio files
- Does not interact with the user

Related Work

Quizlet

- Provides tools for studying and learning such as word writing and dictation
- Quizzes only based on general knowledge and only pairs of term-definition

Proposed Approach and Solution

**Retrieval Augmented Generation(RAG) based AI chatbot**
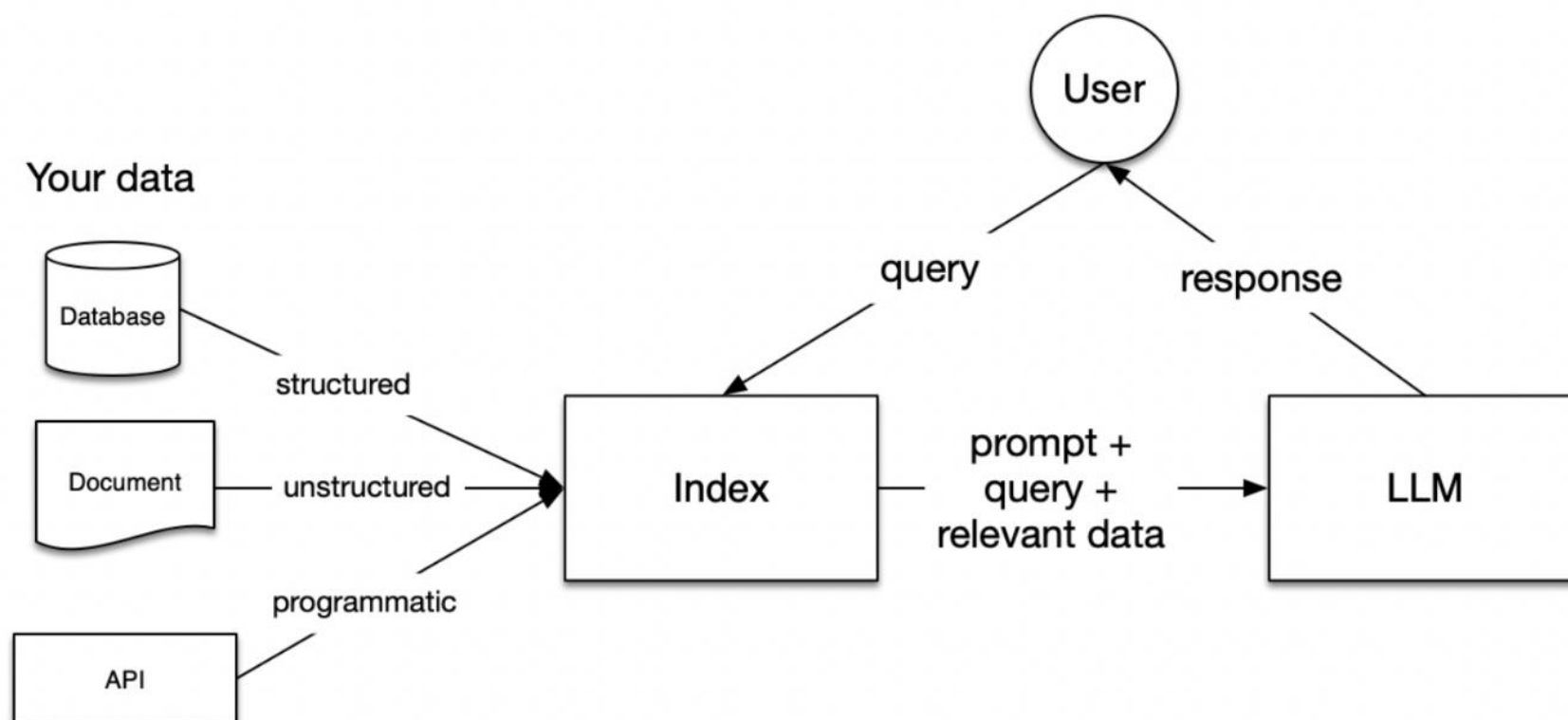
- Retrieve and generate responses exclusively based on provided content

- Precise, relevant, and accurate

- Builds trust by providing answers directly from professor's provided materials, ensuring consistency with course expectations

Proposed Approach and Solution

GOAL   **Provide student with custom and interactive learning experience!**
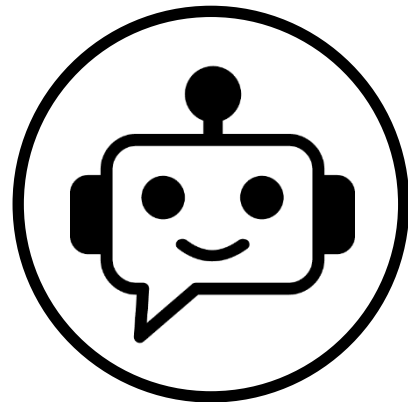
Chatbot

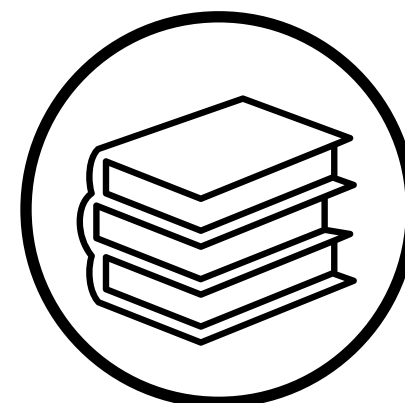RAG-based AI chatbot to ask questions to

Quiz

Create sample personalized quizzes
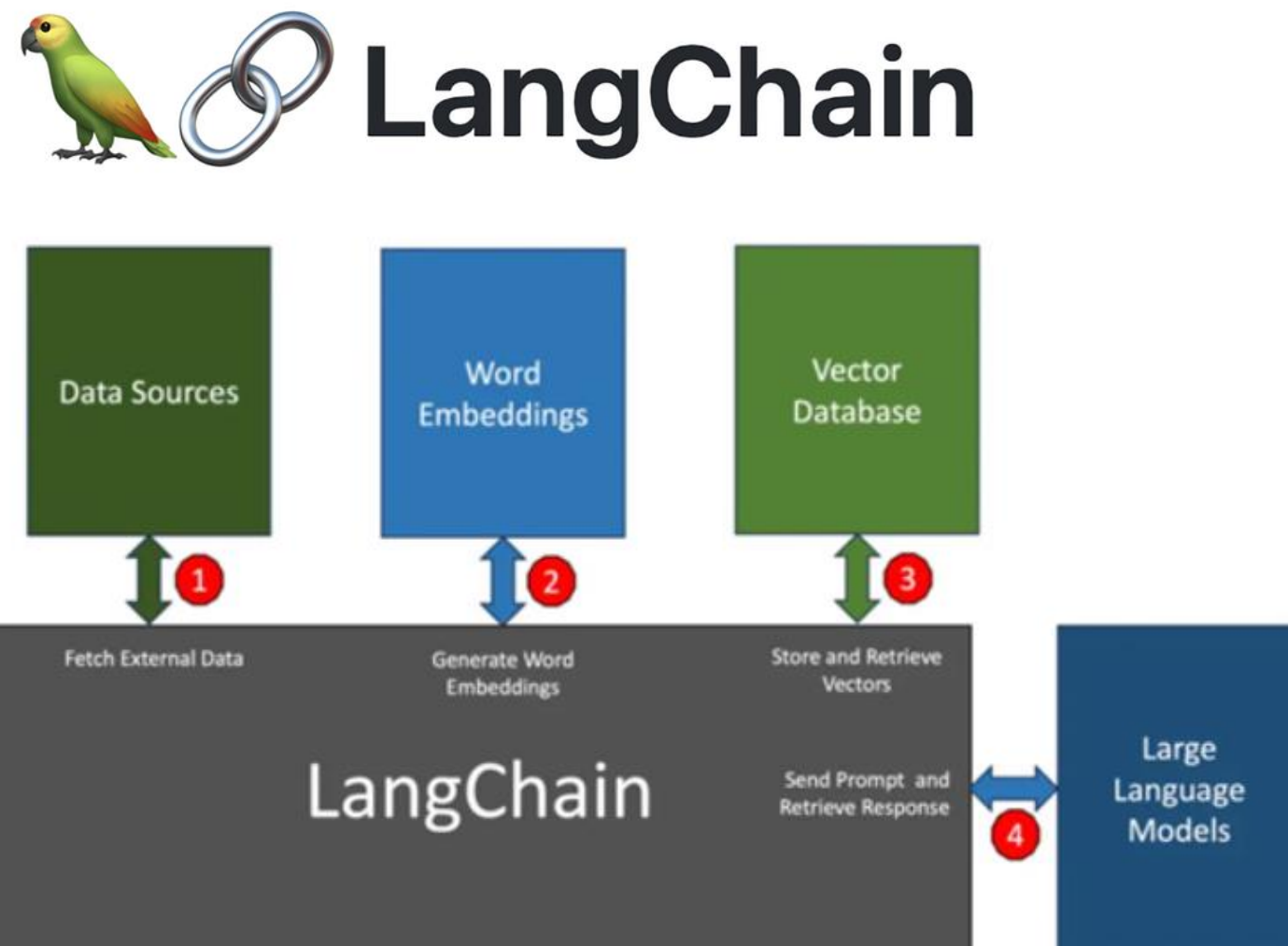
Search

Help students locate specific terminology or concepts within their course materials

Summarization

Summarize documents and course materials for studying

Background

- Open-source SDK for building applications with LLMs
- Integrates external data (PDF, web page, database) for more relevant and accurate results
- Optimizes data retrieval and storage with vector databases

Background
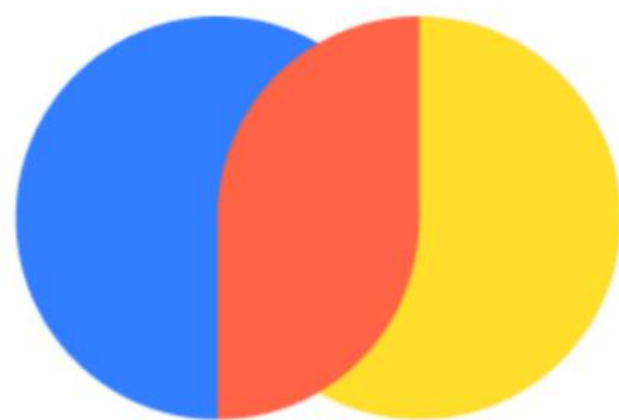
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- A vector DB that stores and retrieves semi-structured and unstructured data in vector form

- Optimized for real-time AI applications, providing fast access without disk-based latency

- Easy for developers to interact with and manage large datasets efficiently

Background

- An open-source LLM designed for text generation, conversation, and summarization tasks

- Excels in fine-tuning, allowing for more domain-specific and accurate responses compared to other models

Tech Stack

Frontend

Backend

aws
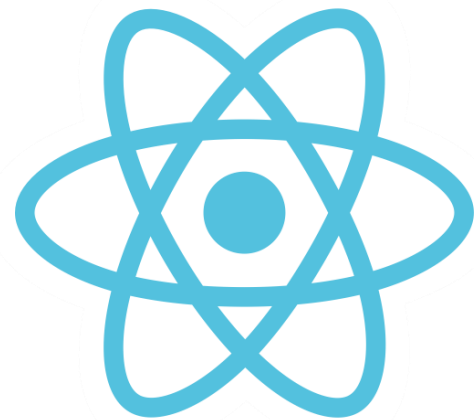
Flask

Spring Boot

AI

Other tools

🦜🔗 LangChain

∞ LLaMA 🦙

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Plan and Role Assignment

	Week5	Week6	Week7	Week8	Week9	Week10	Week11	Week12	Week13
AI architecture design	██	██							
AI architecture development		██	██	██	██				
API integration				██	██	██	██		
UX/UI design	██	██							
Frontend Implementation		██	██	██	██				
Database Design	██	██							
API specification		██	██						
API implementation			██	██	██	██	██		
Integration Testing								██	██

Plan and Role Assignment

Name	Role
Jihee Hwang	FrontEnd Development
*Juyong Rhee	BackEnd Development
Jorge Alcorta	ML Modeling
Yewon Chun	Documentation

Questions?