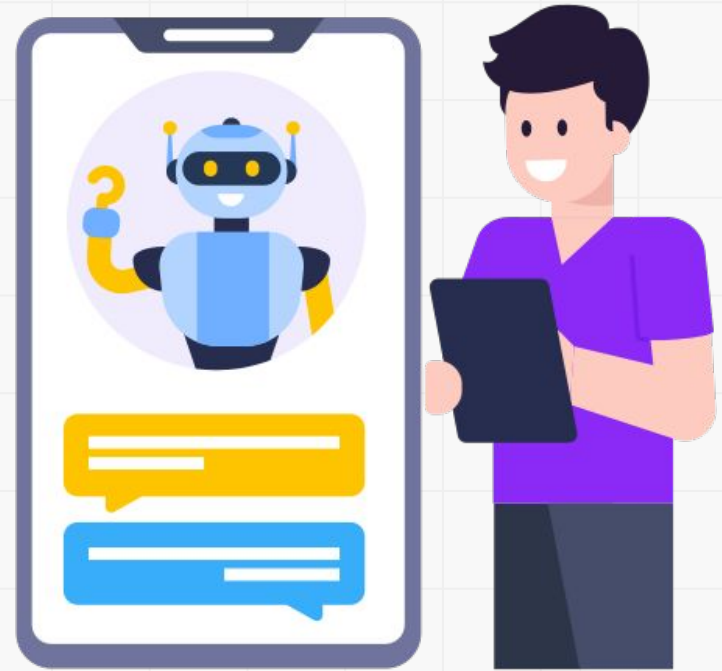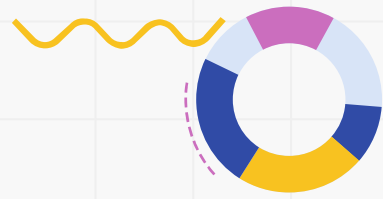# FAQ Chatbot for ICTAK Online Courses

Submitted by : Team 8
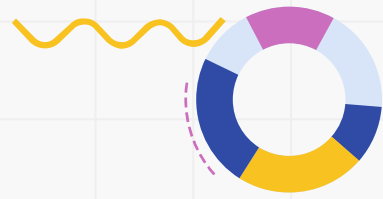- Sagar S
- Swaraj Gopal
- Archana T

Problem Statement

ICTAK students frequently face challenges in accessing course-related information. Manual query handling is inefficient, leading to delays. This project aims to develop an AI-powered FAQ chatbot using RAG (Retrieval-Augmented Generation) models and LLMs to provide real-time, accurate responses. The chatbot will be deployed as a web-based application using Streamlit, with intent recognition, text preprocessing, and response generation. It will integrate embeddings, similarity matching, and logging/analytics to enhance accuracy. The final deliverable includes a GitHub repository with structured code, documentation, and deployment-ready chatbot integration.
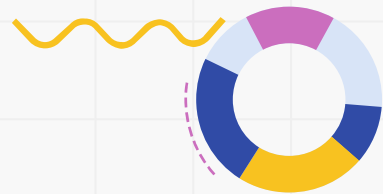
Key Insights from Data

- **Repetitive Queries:** Most student inquiries relate to course access, quizzes, and deadlines, making automation essential.
- **Need for Real-Time Support:** Instant chatbot responses can improve learning efficiency and reduce delays.
- **Pattern-Based FAQs:** NLP techniques enhance intent recognition and accuracy in retrieving relevant answers.
- **Improving Engagement:** A chatbot can provide reminders and support to boost course completion rates.
- **Platform Integration:** Centralizing support across Paatshala, Discord, and Unstop enhances efficiency.

Project Layout

Phase 1–Setup Memory for LLM (Vector Database)
- Load raw PDF(s)
- Create Chunks
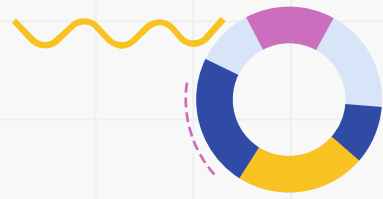- Create Vector Embeddings
- Store embeddings in FAISS

Phase 2–Connect Memory with LLM
- Setup LLM (Mistral with HuggingFace)
- Connect LLM with FAISS
- Create chain

Phase 3–Setup UI for the Chatbot
- Chatbot with Streamlit
- Load Vector store (FAISS) in cache
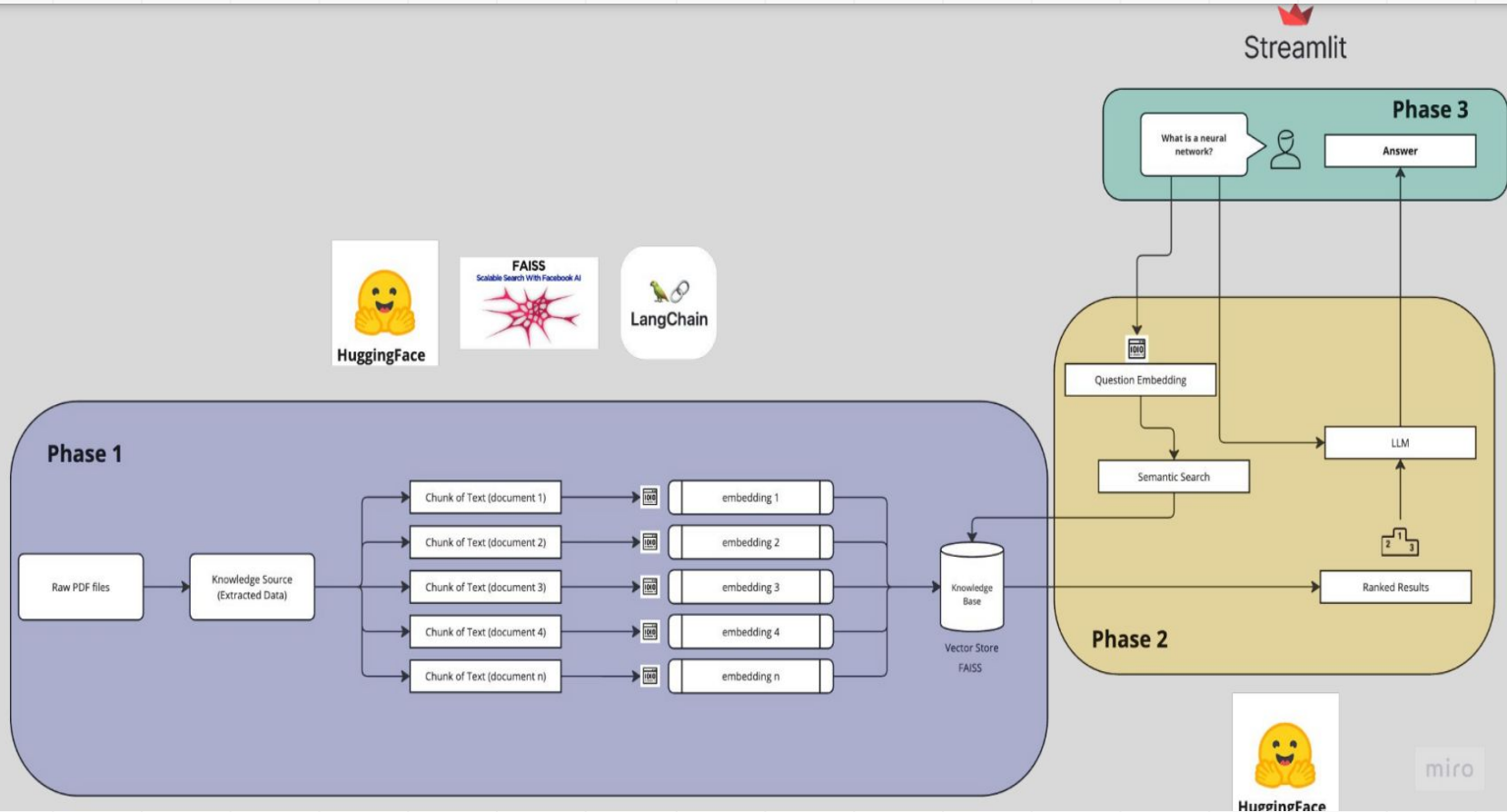- Retrieval Augmented Generation–RAG

Tools & Technologies

- Langchain (AI Framework for LLM applications)
- HuggingFace (ML/AI Hub)
- Mistral (LLM Model)
- FAISS (Vector Database)
- Steamlit (For Chatbot UI)
- Python (Programming Language)
- VS Code (IDE)

RAG Model Architecture

ChatBot Interface Overview

Deploy ⋮

🔧 **Configuration**

This chatbot helps users with queries about ICT Kerala's offerings.

✓ HF_TOKEN loaded.

✓ Vector store path found.

Ask Anika 🤖

Your Virtual Assistant for ICT Kerala

Chat with Anika!

Feel free to ask any questions regarding ICT Kerala's courses, events, and more.

Enter your query here... ➤

THANKYOU!