SPARKATHON 2025

TITLE PAGE

- **Problem Statement ID – PEC 0012**
- **Problem Statement Title- AI-Powered Chatbot for Student & Faculty Information Access**
- **PS Category- Software**
- **Team Name (Registered on portal)- GenZAI**

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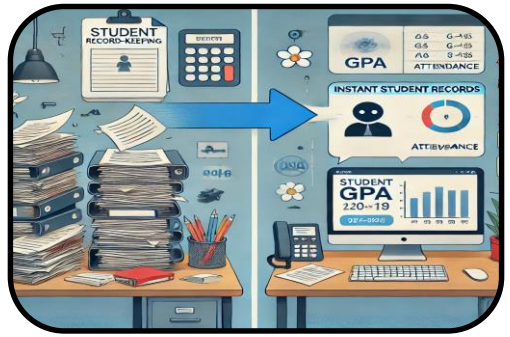
AI POWERED CHATBOT FOR STUDENT AND FACULTY INFORMATION ACCESS

DETAILED EXPLANATION OF OUR PROTOTYPE

- Our prototype provides quick access to **GPA, attendance, and achievements** using an AI-powered chatbot.
- Uses **RASA** for conversation handling, **Flask for API communication**, and **MongoDB** for real-time data storage.
- **Integrated with Telegram Bot** Enables a **mobile-friendly interface** for easy access to academic data.



HOW IT ADDRESS THE PROBLEM

PROBLEM: Faculty members spend a **lot of time** searching for student records in manual records
SOLUTION: The **AI-powered chatbot** provides **instant access** to student records through NLP

PROBLEM: Accessing student portals by entering login credentials is time-consuming and inconvenient.
SOLUTION: Integrated with Telegram, allowing students to check their records anytime, anywhere.

INNOVATION AND UNIQUENESS OF THE SOLUTION

Our chatbot uses **AI-powered natural language processing (RASA)** to provide **instant academic data** without manual searches, making information retrieval effortless.

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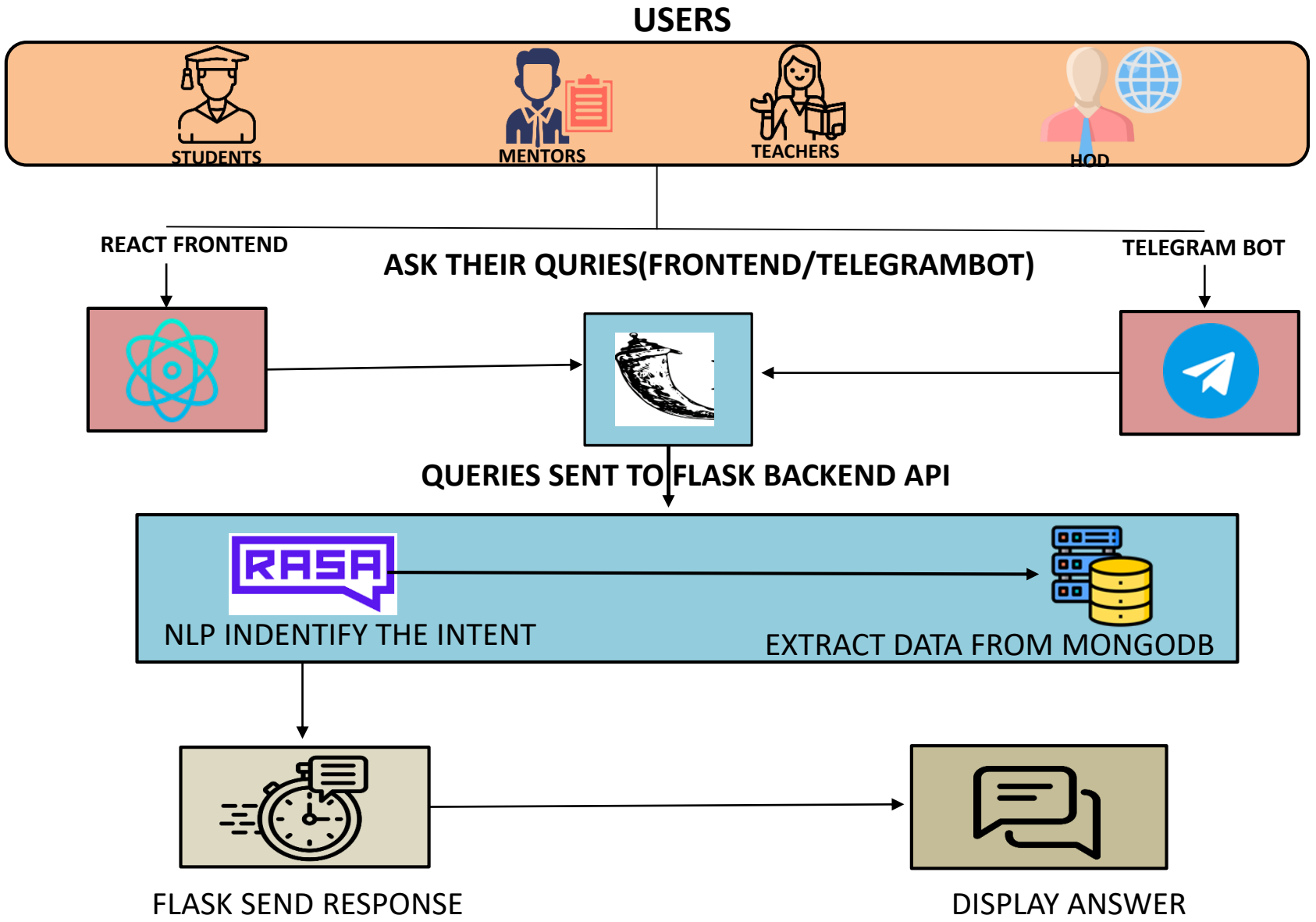
TECHNICAL APPROACH



TECHNOLOGIES USED

FRONTED

React is used to build the chatbot's user interface, providing a response.

BACKEND

Flask API acts as the bridge between the React frontend and RASA chatbot

DATABASE

MongoDB stores and manages student, mentor, teacher, and HoD data

NLP ENGINE

RASA enables the chatbot to understand user queries, process intents.

BOT INTEGRATION

Telegram is used to extend the chatbot’s accessibility

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FEASIBILITY AND VIABILITY

TECHNICAL FEASIBILTY

The chatbot is built using **RASA, Flask, and MongoDB**, ensuring smooth integration and real-time data retrieval.

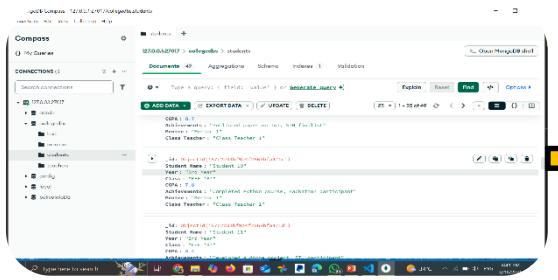
OPERATIONAL FEASIBILTY

The chatbot **automates academic queries**, reducing manual workload for faculty and providing instant responses to students.

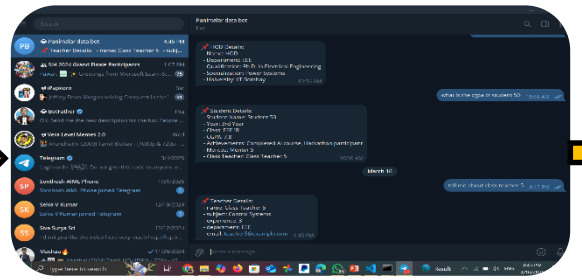
ECONOMIC VIABILITY

The system is **cost-effective**, as it runs on **open-source technologies** and can be easily deployed on cloud or local servers.

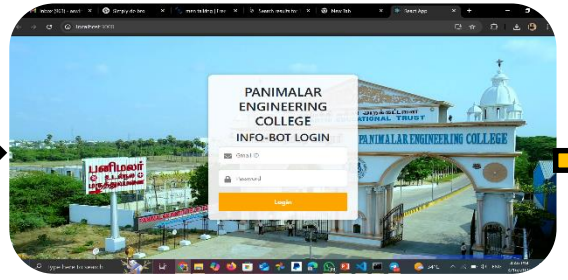
WORKING PROTOTYPE



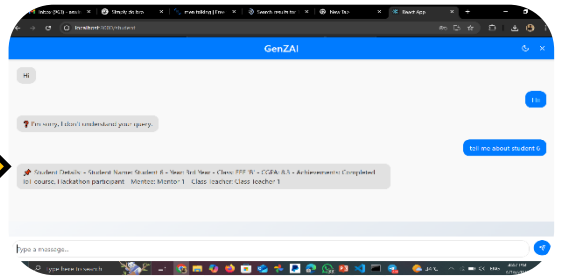
Created a database that contains 50 Students, 25 Teachers, 20 Mentors and 1 hod in Mongodb



Used Flask to run the backend, created a Telegram bot, and connected the bot with the backend.



Created a login page to ensure role-based access



Once logged in, you can ask queries and access data in the chatbot.

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IMPACT AND BENEFITS

POTENTIAL IMPACT ON TARGET AUDIENCE

SECNERIO: TWO STUDENTS ARE FILLING GOOGLE FORMS SENT BY THEIR MENTOR

BENEFITS OF THE SOLUTION

- Students and faculty can get real-time answers without logging into portals
- Reduces manual workload for faculty by handling repetitive queries.
- Users can interact naturally instead of searching through multiple records.
- Integrated with Telegram for easy access anytime, anywhere.

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PROTOTYPE LINK

Github Repository link: https://github.com/Aswin054/DB-chatbot