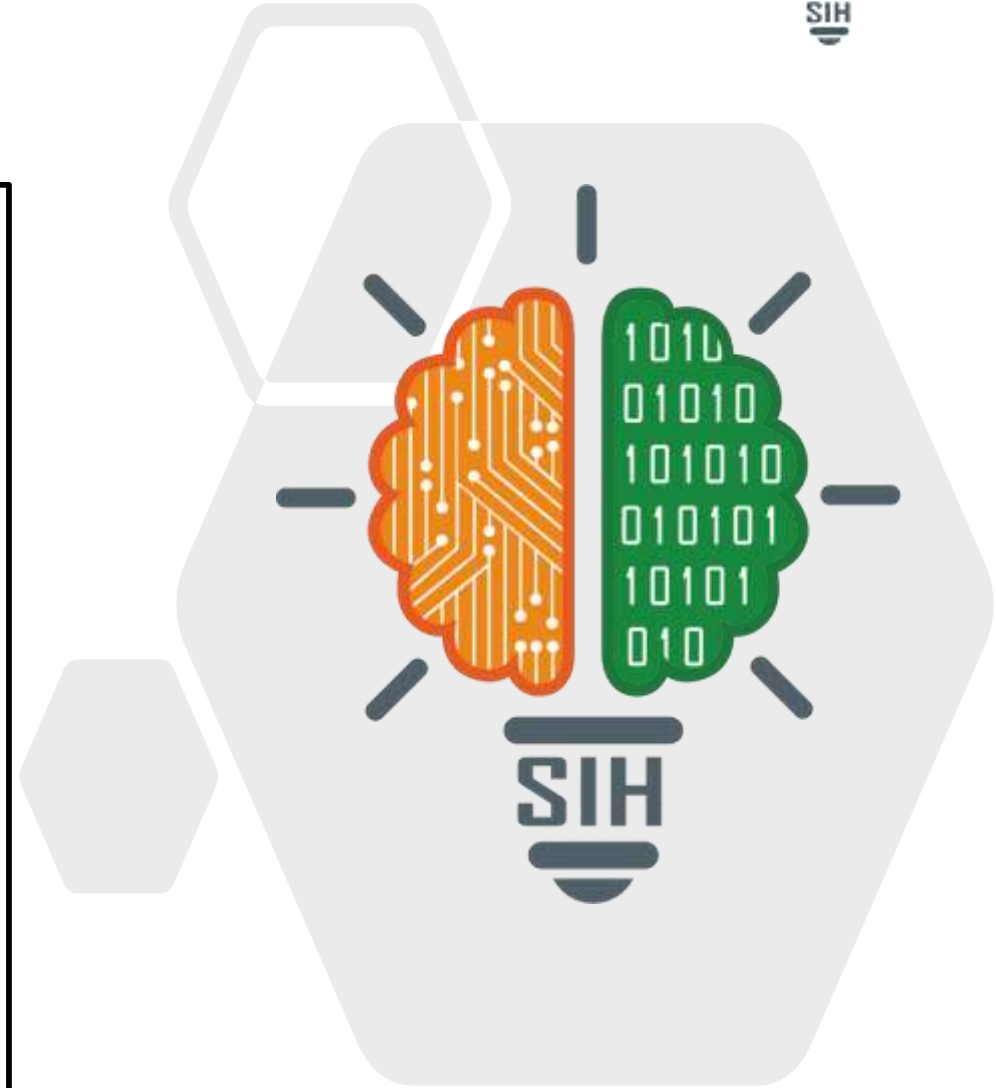


# SMART INDIA HACKATHON 2025



- **Problem Statement ID - 25104**
- **Problem Statement Title- Language Agnostic Chatbot**
- **Theme- Smart Education**
- **PS Category- Software**
- **Team ID- 12345**
- **Team Name - CampusSarathi**

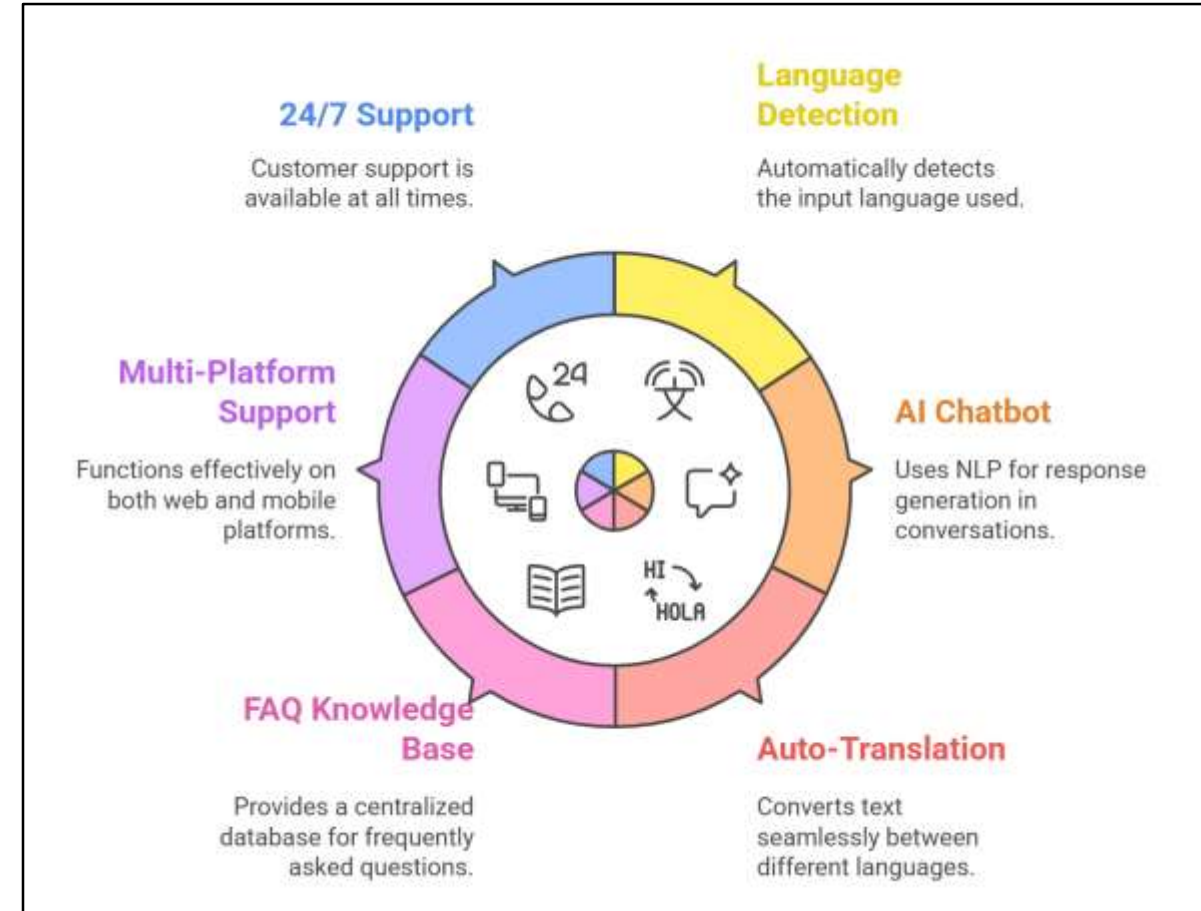


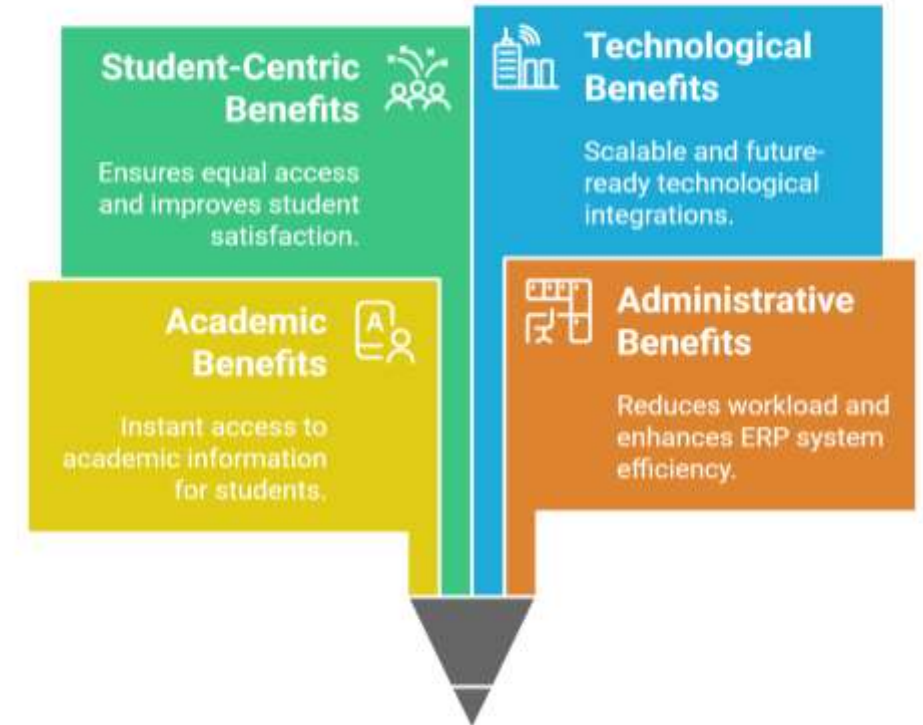
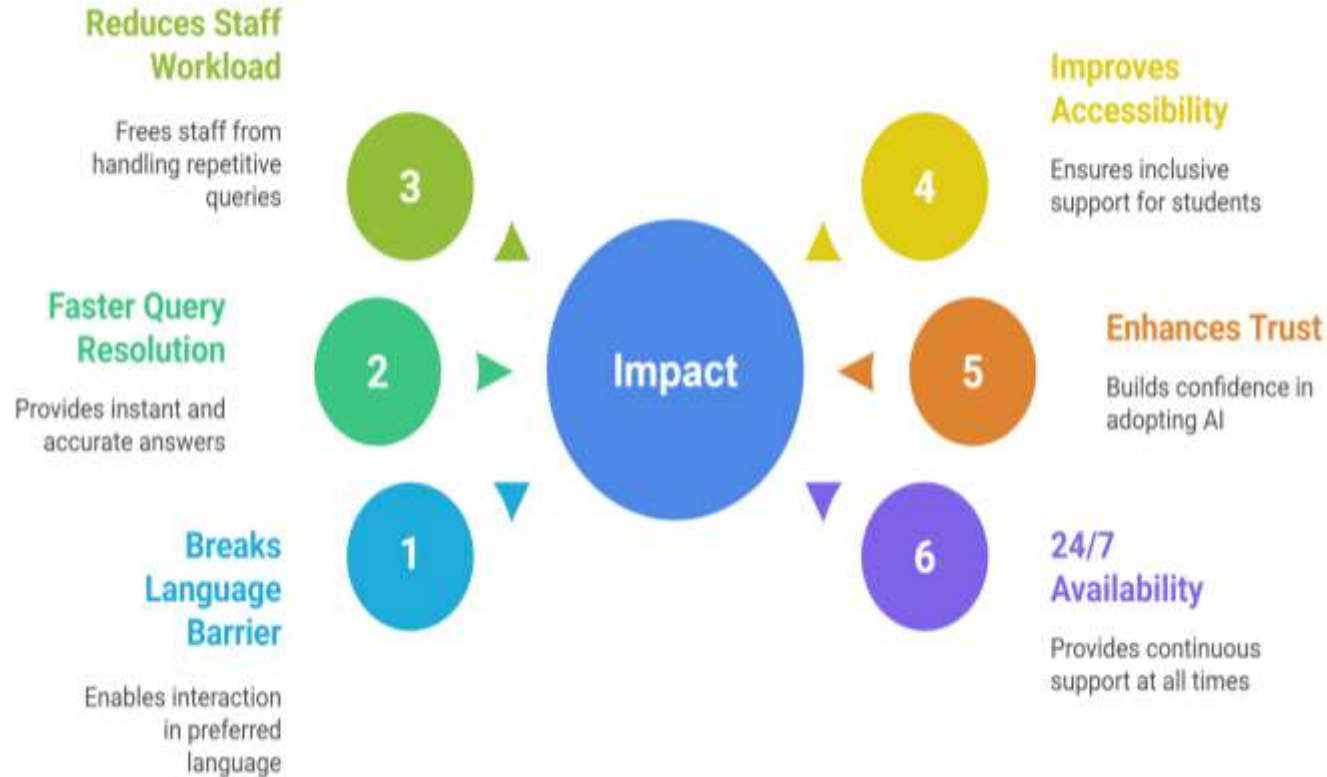
## Detailed Explanation of the Proposed Solution:

- ❑ **Multilingual Query Handling:** Understands student queries in multiple regional languages + English/Hindi.
- ❑ **AI-powered NLP:** Uses intent detection and entity recognition to understand queries.
- ❑ **Auto Translation:** Converts student's query into standard language internally and gives consistent responses.
- ❑ **Dynamic Knowledge Base:** Updated FAQs (fee deadlines, scholarships, timetables, etc.).
- ❑ **24/7 Availability:** Always accessible for students on web & mobile.

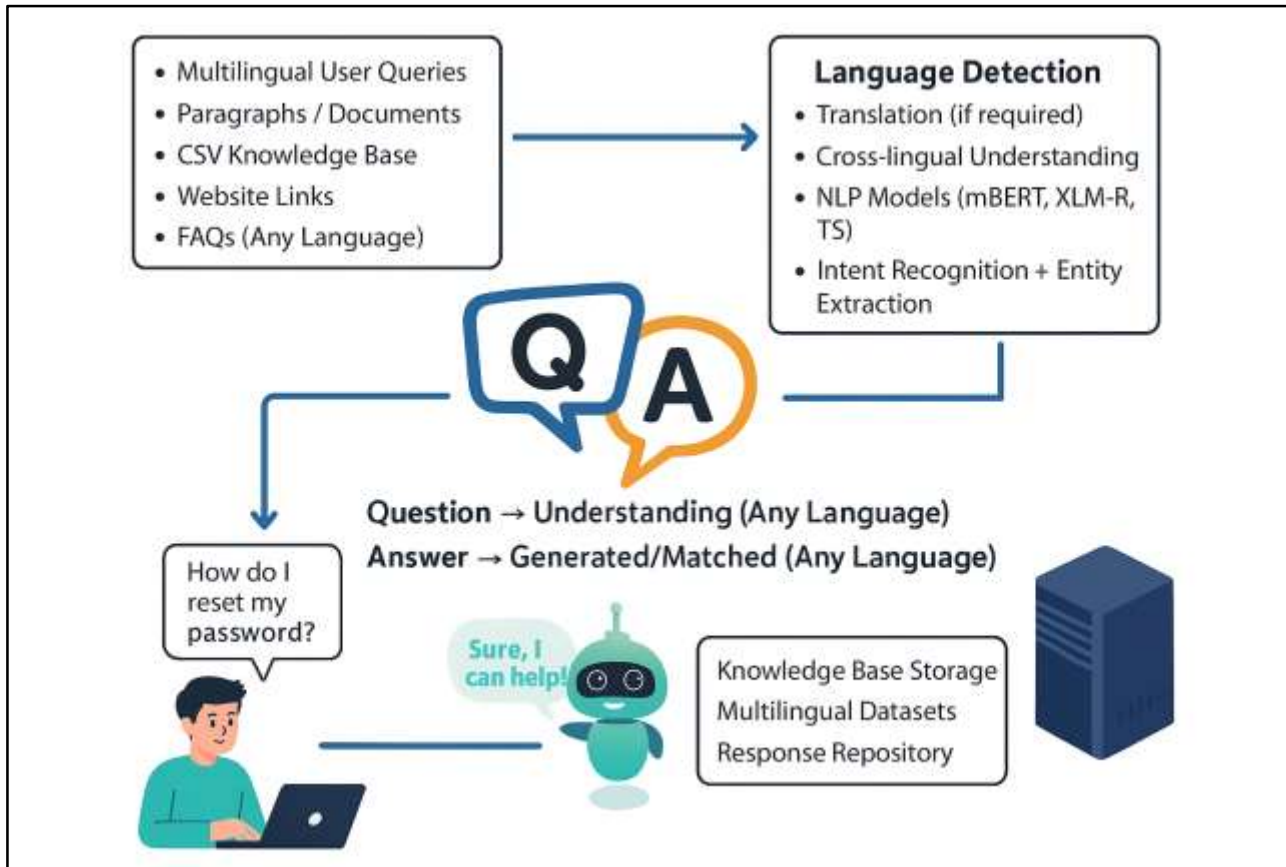
## How It Addresses the Problem:

- ❑ **Removes Language Barrier:** Students can ask queries in their preferred language.
- ❑ **Faster Query Resolution:** Instant and automated answers.
- ❑ **Scalable & Adaptable:** Can be deployed across multiple colleges/universities.
- ❑ **Improves Student Experience:** Consistent, reliable, and user-friendly support.












## CampusSarathi Query Processing Flow



## Technologies Used

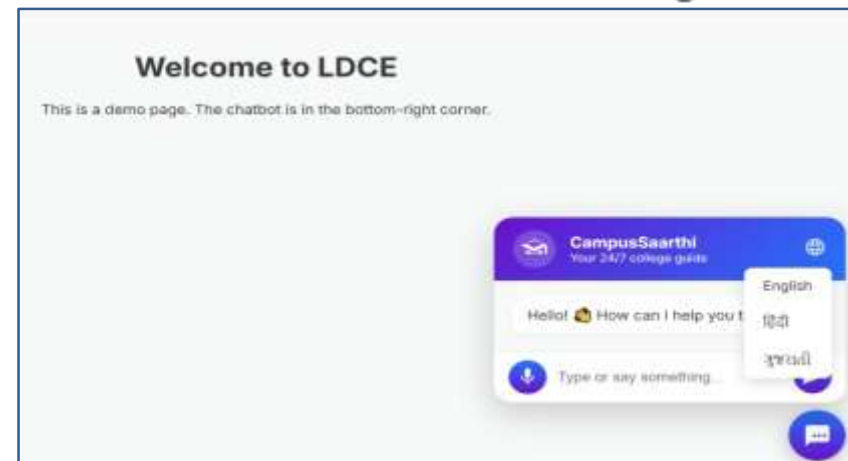
Feature	Technology
 Frontend	HTML, CSS, JavaScript
 Backend (NLP Engine)	RASA
 Database	SQLite
 API Testing & Debugging	Postman
 Language Detection	fastText / langdetect
 Translation (Regional ↔ English)	Argos Translate / IndicTrans
 Hosting (demo)	Localhost



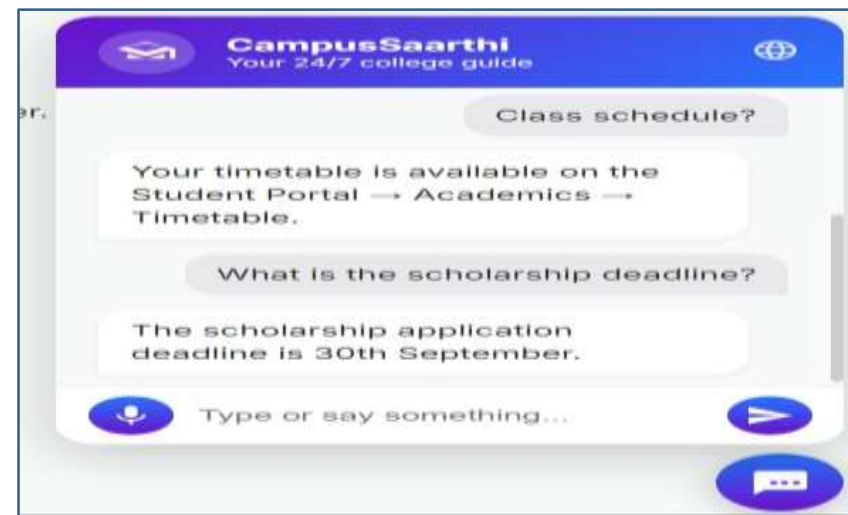
## Feasibility



## Viability



## Language Selection



## Working of the Chatbot

**Key research and references for this project are listed below:**

- ☐ Analyzed multilingual chatbot frameworks and their performance in handling diverse languages.
- ☐ Explored open-source libraries: Rasa, Hugging Face Transformers, spaCy.
- ☐ Reviewed techniques for intent recognition, entity extraction, and cross-lingual embeddings.
- ☐ Examined user engagement metrics for multilingual chatbots in educational and institutional setups
- ☐ Conneau, A., et al. (2020). XLM-R: A large-scale multilingual model for cross-lingual natural language understanding.
- ☐ Rasa Documentation – <https://rasa.com/docs/>
- ☐ Hugging Face Transformers – <https://huggingface.co/transformers/>
- ☐ spaCy NLP Library – <https://spacy.io/>
- ☐ Research papers on multilingual chatbots and cross-lingual NLP (Google Scholar search).