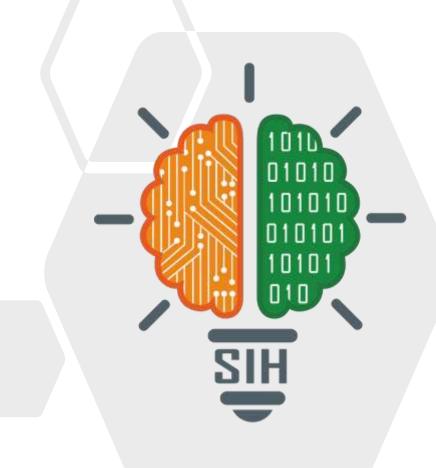
SMART INDIA HACKATHON 2025



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



CampusSarthi

LANGUAGE AGNOSTIC CHATBOT

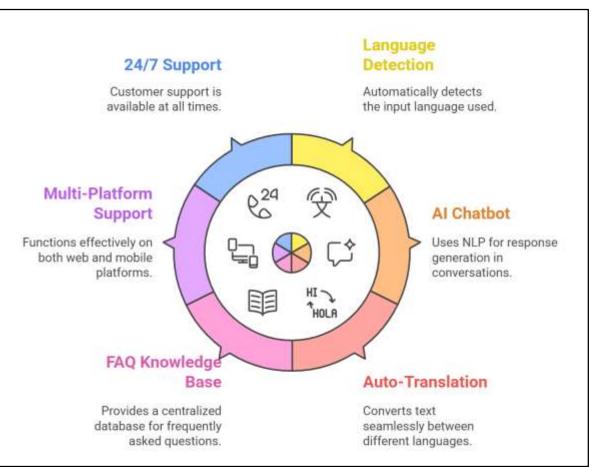


Detailed Explanation of the Proposed Solution:

- Multilingual Query Handling: Understands student queries in multiple regional languages + English/Hindi.
- ☐ Al-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 accessiblez for students on web & mobile.

How It Addresses the Problem:

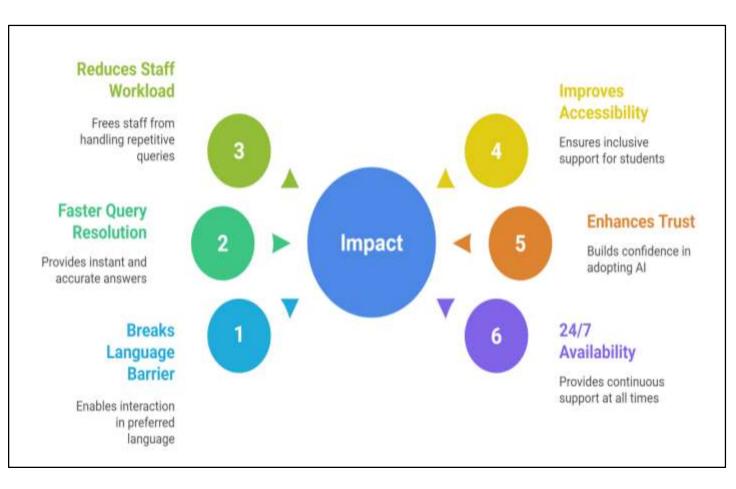
- ☐ Removes Language Barrier: Students can ask queries in their preferred language.
- ☐ Faster Query Resolution: Instant and automated answers.
- ☐ Scalable & Adaptable: Can be deployed across multiple colleges/universities.
- ☐ Improves Student Experience: Consistent, reliable, and user-friendly support.

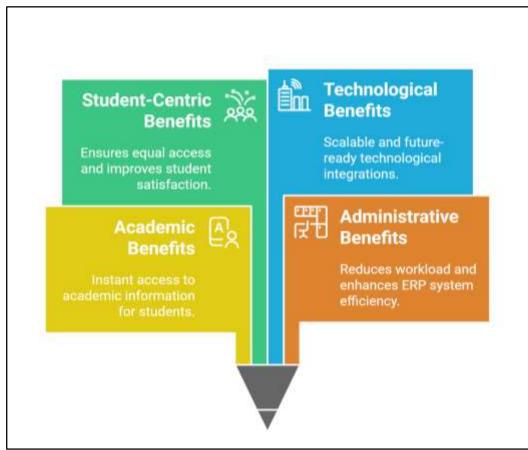


CampusSarthi

IMPACT AND BENEFITS





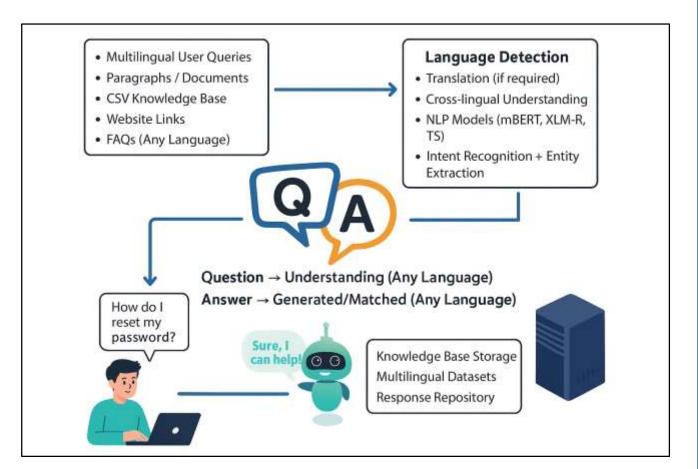


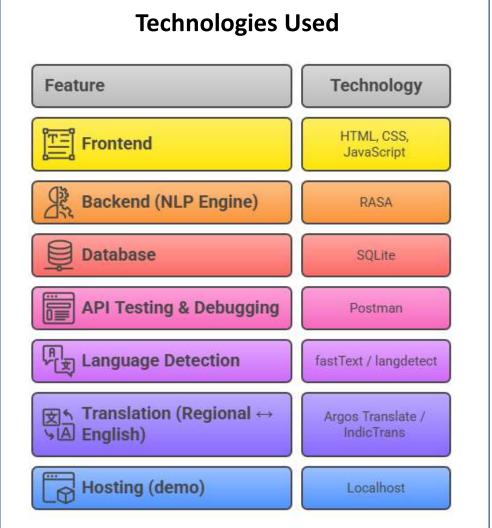


TECHNICAL APPROACH



CampusSarthi Query Processing Flow





CampusSarthi

FEASIBILITY AND VIABILITY



Feasibility

Open-Source Stack Uses Rasa, fastText/langdetect, SQLite, Argos Translate; zero license cost.

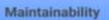
Viability

Cost Effective Zero license fees, reduces staff workload, saves institutional resources

Easy Deployment Works seamlessly on college websites, ERP portals, and mobile apps.

Scalable & Sustainable

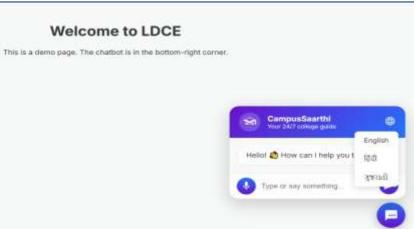
Supports multiple colleges, 5+ languages, feedback loop ensures improvement.



Can be maintained and updated by student volunteers or admin staff with minimal training. High Student Adoption

Multilingual support + 24/7 availability builds trust & usability.

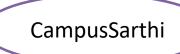
Resource Efficiency Requires minimal infrastructure, runs on standard college servers or cloud platforms Long-Term Sustainability Maintains accuracy via feedback loops and continuous learning.



Language Selection



Working of the Chatbot



RESEARCH AND REFERENCES



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).