

SIH 2025 Blueprint

■ Core Tech Roles

- 1 RAG (Retrieval-Augmented Generation): Fetches updated answers from uploaded circulars, PDFs, notices, FAQs.
- 2 XLM-R (Cross-Lingual Model): Enables multilingual support (Hindi, English, Gujarati, Marathi, etc.).
- 3 Rasa (Conversation Manager): Handles intents, context, flow, fallback, and human escalation.

■ Workflow (Step-by-Step)

- 1 College Admin Upload → Staff uploads PDFs, notices, FAQs → System parses & stores in Knowledge Base → Auto-Update Knowledge (Feature 10).
- 2 Student Access → Student searches their college on the platform → Opens chatbot.
- 3 Chat Interaction → Query asked (text/voice, any language). XLM-R → Converts to language-independent format. Rasa → Detects intent & context. RAG → Retrieves info if not in FAQs. Reply generated in student's language.
- 4 Extra Assistance → Proactive FAQ Broadcasts (Feature 6) + Campus Navigation (Feature 9).
- 5 Continuous Improvement → Logs stored → Analytics dashboard → Shows top FAQs + failed queries → Staff refines FAQs.

■ Out-of-the-Box Features ■

- 1 Document Fetcher → Bot can send PDFs (e.g., "Show timetable circular").
- 2 Voice Support → Students can ask queries by speaking.
- 3 Multi-Channel → Website, WhatsApp, Telegram integration.
- 4 Human Escalation → Live handover if bot fails.
- 5 Daily Analytics → Track top questions, busiest times.
- 6 Proactive FAQ Broadcasts → Auto reminders for deadlines, events.
- 7 Personalized Mode → Fetch personal timetable, hall ticket if logged in.
- 8 AI Alerts → New circulars auto-broadcasted to students.
- 9 Campus Navigation → Interactive guidance to classrooms, labs, library, office.
- 10 Auto-Update Knowledge → FAQ base refreshes automatically with new notices.
- 11 Form-Filling Assistant → Step-by-step help for scholarship/exam forms, with auto-fill.
- 12 Event & Notice Calendar Sync → Pushes exam dates, deadlines, holidays into Google Calendar / phone reminders.
- 13 Career & Internship Guidance Mode → Smart guidance for jobs, internships, resume help, connects to placement cell.
- 14 Offline/Low-Bandwidth Mode → Works via SMS/USSD or lightweight chatbot UI for poor internet zones.

■ End-to-End Flow (Simplified)

Admin Uploads Circulars/FAQs → Auto-Update Knowledge

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Student Visits Portal → Selects College → Enters Chat

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Student Query → XLM-R understands → Rasa detects intent

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Check FAQ Database → If not found → RAG retrieves from circulars



Bot Responds (Text/Voice, Multilingual)



Proactive FAQ Broadcasts + Campus Navigation



Logs Saved → Analytics Dashboard → Continuous Improvement

■ Final Outcome

Handles 5+ Indian languages.

Keeps FAQs always updated with new circulars.

Proactively reminds students about deadlines.

Provides campus navigation help.

Supports form filling, calendar sync, career guidance, and offline access.

Reduces staff workload and ensures 24/7 student support.