

AI-Based Chatbot for Student Support

Objective

To design an AI-powered chatbot that helps college students with academic-related queries such as exam dates, course details, CGPA calculation, or learning resources using natural language understanding (NLU).

Key AI Concepts Used

- Natural Language Processing (NLP)
- Machine Learning (ML)
- Intent Recognition
- Text Classification

Tools & Technologies

- Python
- NLTK / spaCy / transformers (for NLP)
- scikit-learn or TensorFlow (for ML)
- Flask (for web app)
- SQLite / Firebase (for database)
- OpenAI API (optional)

Modules

1. User Interface (UI): Simple web/mobile interface.
2. Intent Detection: NLP model to classify intents (exam info, notes, CGPA help).
3. Response Generation: Predefined responses or dynamic using AI.
4. Learning Resources Finder: Suggests YouTube/NPTEL content.

Dataset

Collected student FAQs, manually annotated for intent categories like 'exam_query', 'cgpa_help', 'resource_request'.

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Expected Output

- Chatbot answers:
 - * 'When is my next exam?'
 - * 'Suggest Python tutorials'
 - * 'How to improve CGPA?'

Deliverables

- Python source code
- Project report PDF
- Sample dataset (CSV/JSON)
- Optional demo video

Optional Extensions

- Voice input using SpeechRecognition
- Integration with WhatsApp/Telegram
- Advanced responses using ChatGPT API