# Project 1

# University FAQ Chatbot

## 🎯 Goal

Create a chatbot that answers student queries about university information such as admissions, fees, timetable, hostel, exams, etc.

## 🔑 Concepts Used

- Text preprocessing (tokenization, stopword removal, lemmatization)
- TF-IDF or Word Embeddings for query matching
- Cosine similarity for retrieving the best answer

## 🛠️ Tools

- Python (NLTK, Scikit-learn, or spaCy)
- Dataset: Self-created CSV with "Question" and "Answer"
- Optional: Flask or Streamlit for web deployment

## Example Dataset

| Question | Answer |
| --- | --- |
| How much is the admission fee? | Admission fee is ₹5000. |
| How can I apply for a hostel? | Fill the hostel form online at hostel.university.edu. |
| When will exams start? | Exams will begin in December as per the academic calendar. |

### Workflow

1. Preprocess FAQ dataset (tokenize, remove stopwords, lemmatize).
2. Preprocess user input query.
3. Compute similarity between user query and dataset questions.
4. Return the best matching answer.

### Extensions

- Use BERT embeddings for better semantic matching.
- Add multi-language support for international students.
- Deploy on Telegram, WhatsApp, or a web portal.

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# Project 2

# Customer Support Chatbot for Online Shopping

### 🎯 Goal

Build a chatbot to handle basic customer queries like order tracking, return policies, delivery times, and product FAQs.

### 🔑 Concepts Used

- Intent recognition (classifying query type)
- Named Entity Recognition (NER) for extracting order numbers, product names
- Rule-based responses + similarity matching

## 🛠️ Tools

- Python (NLTK, spaCy, or Rasa for more advanced bots)
- Dataset: Sample customer queries mapped to predefined responses
- Optional: Streamlit or Flask for deployment

## Example Dataset

| Intent | Example Query | Response |
|---|---|---|
| Order Status | Where is my order #12345? | Your order #12345 is out for delivery. |
| Return Policy | How can I return a product? | You can return products within 15 days via our online portal. |
| Product Info | Does this phone support fast charging? | Yes, this phone supports fast charging. |

## Workflow

1. Preprocess user query (tokenization, stopwords, lemmatization).
2. Classify intent (e.g., order status, return policy, product info).
3. Extract entities if needed (e.g., order numbers).
4. Provide the corresponding response.

## Extensions

- Integrate ML-based intent classification for dynamic queries.
- Add sentiment analysis to detect frustrated customers.
- Connect with live databases for real-time order info.

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**Project Submission Instructions**

- Complete your projects.
- Create a **separate GitHub repository** for each project (Project 1 and Project 2).
- Push your project to GitHub.
- Fill out the **Google Form**.
- Enter your **name**, **roll number**, **section**, and **GitHub repository link** in the form.