Title : Chatbot

Problem Statement: Develop elementary chatbot.

Objectives:
- To learn to implement an elementary chatbot.

Outcomes: Students will be able to
- Understand the basics of NLP and implement elementary chatbot.

S/W & H/W : OS Ubuntu/Fedora with Python libraries requirements installed.

Theory:

- Chatbot is a software application used to conduct an online chat conversion, in lieu of providing direct contact with a live human agent.

- Chatbots are used in dialog systems for various purposes including customer service, information gathering etc. While some chatbot applications use extensive word-classification processes, natural language processors, and sophisticated AI, other simply scan for general keywords and generate responses using common phrases obtained from associated library or database.

We use Natural Language Processing (NLP) for building our chatbot.

Different steps involved are:

1. Loading the data.
2. Cleaning the data (Tokenization / Lemmatization)
3. Model training.
4. Taking input from user and providing response.

1. Loading the data:
   The dataset used contains collections of words/ sentences grouped according to their intent in a json file.

2. Cleaning the data:
   For training, we need to clean the data by performing normalization, tokenization / lemmatization.

- Normalization in NLP is the process of converting a word to its cannonical form.
- Two popular techniques are stemming & lemmatization.

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3. Model training:

We could use this cleaned data using any classifier.

4. Providing response:

To provide a response we take input from user clean it and then pass to the model to classify it. We then choose any random response from that group & provide result back.

Conclusion:

We have successfully implemented an elementary chatbot.