

```
!pip install nltk spacy transformers
!python -m spacy download en_core_web_sm
```

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Requirement already satisfied: nltk in /usr/local/lib/python3.11/dist-packages (3.9.1)
Requirement already satisfied: spacy in /usr/local/lib/python3.11/dist-packages (3.7.5)
Requirement already satisfied: transformers in /usr/local/lib/python3.11/dist-packages (4.47.1)
Requirement already satisfied: click in /usr/local/lib/python3.11/dist-packages (from nltk) (8.1.8)
Requirement already satisfied: joblib in /usr/local/lib/python3.11/dist-packages (from nltk) (1.4.2)
Requirement already satisfied: regex<=2021.8.3 in /usr/local/lib/python3.11/dist-packages (from nltk) (2024.11.6)
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Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.11 in /usr/local/lib/python3.11/dist-packages (from spacy) (3.0.12)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.11/dist-packages (from spacy) (1.0.5)
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Requirement already satisfied: cymem<2.1.0,>=2.0.2 in /usr/local/lib/python3.11/dist-packages (from spacy) (2.0.11)
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Requirement already satisfied: srsly<3.0.0,>=2.4.3 in /usr/local/lib/python3.11/dist-packages (from spacy) (2.5.1)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in /usr/local/lib/python3.11/dist-packages (from spacy) (2.0.10)
Requirement already satisfied: weasel<0.5.0,>=0.1.0 in /usr/local/lib/python3.11/dist-packages (from spacy) (0.4.1)
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Requirement already satisfied: requests<3.0.0,>=2.13.0 in /usr/local/lib/python3.11/dist-packages (from spacy) (2.32.3)
Requirement already satisfied: pydantic!=1.8,!1.8.1,<3.0.0,>=1.7.4 in /usr/local/lib/python3.11/dist-packages (from spacy) (2.10.6)
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Requirement already satisfied: setuptools in /usr/local/lib/python3.11/dist-packages (from spacy) (75.1.0)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.11/dist-packages (from spacy) (24.2)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in /usr/local/lib/python3.11/dist-packages (from spacy) (3.5.0)
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Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-packages (from transformers) (3.17.0)
Requirement already satisfied: huggingface-hub<1.0,>=0.24.0 in /usr/local/lib/python3.11/dist-packages (from transformers) (0.27.0)
Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.11/dist-packages (from transformers) (6.0.2)
Requirement already satisfied: tokenizers<0.22,>=0.21 in /usr/local/lib/python3.11/dist-packages (from transformers) (0.21.0)
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Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/python3.11/dist-packages (from huggingface-hub<1.0,>=0.24.0) (4.12.2)
Requirement already satisfied: language-data>=1.2 in /usr/local/lib/python3.11/dist-packages (from langcodes<4.0.0,>=3.2.0->3.5.0) (1.3.0)
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.11/dist-packages (from pydantic!=1.8,!1.8.1,<3.0.0,>=1.7.4) (0.7.0)
Requirement already satisfied: pydantic-core==2.27.2 in /usr/local/lib/python3.11/dist-packages (from pydantic!=1.8,!1.8.1,<3.0.0,>=1.7.4) (2.27.2)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from requests<3.0.0,>=2.13.0) (3.4.1)

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Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-packages (from requests<3.0.0,>=2.13.0->spacy)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11/dist-packages (from requests<3.0.0,>=2.13.0->spacy)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11/dist-packages (from requests<3.0.0,>=2.13.0->spacy)
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Requirement already satisfied: shellingham>=1.3.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0.0,>=0.3.0->spacy)
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Requirement already satisfied: cloudpathlib<1.0.0,>=0.7.0 in /usr/local/lib/python3.11/dist-packages (from weasel<0.5.0,>=0.1
Requirement already satisfied: smart-open<8.0.0,>=5.2.1 in /usr/local/lib/python3.11/dist-packages (from weasel<0.5.0,>=0.1.0
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Requirement already satisfied: marisa-trie>=1.1.0 in /usr/local/lib/python3.11/dist-packages (from language-data>=1.2->langcor
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Requirement already satisfied: mdurl~=0.1 in /usr/local/lib/python3.11/dist-packages (from markdown-it-py>=2.2.0->rich>=10.11
Collecting en-core-web-sm==3.7.1
```

Downloading [https://github.com/explosion/spacy-models/releases/download/en\\_core\\_web\\_sm-3.7.1/en\\_core\\_web\\_sm-3.7.1-py3-none-any.whl](https://github.com/explosion/spacy-models/releases/download/en_core_web_sm-3.7.1/en_core_web_sm-3.7.1-py3-none-any.whl) 12.8/12.8 MB 63.4 MB/s eta 0:00:00

```
Requirement already satisfied: spacy<3.8.0,>=3.7.2 in /usr/local/lib/python3.11/dist-packages (from en-core-web-sm==3.7.1) (3
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.11 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7
```

```
import nltk
```

```
nltk.download('punkt_tab')
```

```
[nltk_data] Downloading package punkt_tab to /root/nltk_data...
[nltk_data] Package punkt_tab is already up-to-date!
True
```

```
import nltk
nltk.download('punkt')
nltk.download('wordnet')
nltk.download('stopwords')
nltk.download('averaged_perceptron_tagger')
```

```

[ntk_data] Downloading package punkt to /root/nltk_data...
[ntk_data]   Unzipping tokenizers/punkt.zip.
[ntk_data] Downloading package wordnet to /root/nltk_data...
[ntk_data] Downloading package stopwords to /root/nltk_data...
[ntk_data]   Unzipping corpora/stopwords.zip.
[ntk_data] Downloading package averaged_perceptron_tagger to
[ntk_data]   /root/nltk_data...
[ntk_data]   Unzipping taggers/averaged_perceptron_tagger.zip.
True

```

```

import nltk
print(nltk.data.path)

```

```

['/root/nltk_data', '/usr/nltk_data', '/usr/share/nltk_data', '/usr/lib/nltk_data', '/usr/share/nltk_data', '/usr/local/share/nl

```

```

import nltk
from nltk.tokenize import word_tokenize
from nltk.corpus import stopwords
import string

# Sample FAQ database
faqs = {
    "What is your name?": "I am an FAQ chatbot!",
    "How can I contact support?": "You can contact support at support@example.com.",
    "What are your working hours?": "Our working hours are 9 AM - 5 PM, Monday to Friday."
}

# Preprocess text
def preprocess(text):
    text = text.lower().translate(str.maketrans('', '', string.punctuation))
    words = word_tokenize(text)
    words = [word for word in words if word not in stopwords.words('english')]
    return " ".join(words)

# Chatbot function

```

```
def chatbot(question):
    processed_q = preprocess(question)
    for q in faqs.keys():
        if preprocess(q) in processed_q:
            return faqs[q]
    return "I'm sorry, I don't have an answer for that."

# Example usage
while True:
    user_input = input("You: ")
    if user_input.lower() == "exit":
        break
    print("Bot:", chatbot(user_input))
```

⇒ You: What is your name?  
Bot: I am an FAQ chatbot!  
You: How can I contact support?  
Bot: You can contact support at [support@example.com](mailto:support@example.com).  
You: What are your working hours?  
Bot: Our working hours are 9 AM - 5 PM, Monday to Friday.  
You: exit

