

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

```
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->spacy) (5.2.1)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.11/dist-packages (from Jinja2->spacy) (3.0.2)
Requirement already satisfied: marisa-trie>=1.1.0 in /usr/local/lib/python3.11/dist-packages (from language-data>=1.2->langcodes) (1.1.0)
Requirement already satisfied: markdown-it-py>=2.2.0 in /usr/local/lib/python3.11/dist-packages (from rich>=10.11.0->typer<1.0.0) (2.2.0)
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Requirement already satisfied: wrapt in /usr/local/lib/python3.11/dist-packages (from smart-open<8.0.0,>=5.2.1->weasel<0.5.0,>=0.1.0->spacy) (1.15.0)
Requirement already satisfied: mdurl<=0.1 in /usr/local/lib/python3.11/dist-packages (from markdown-it-py>=2.2.0->rich>=10.11.0->typer<1.0.0) (0.1.1)
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 (12.8/12.8 MB 53.1 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) (3.7.2)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.11 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (3.0.11)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (1.0.0)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (1.0.10)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (2.0.2)
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Requirement already satisfied: thinc<8.3.0,>=8.2.2 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (8.2.2)
Requirement already satisfied: wasabi<1.2.0,>=0.9.1 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (1.1.0)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (2.4.3)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (2.0.6)
Requirement already satisfied: weasel<0.5.0,>=0.1.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (0.1.0)
Requirement already satisfied: typer<1.0.0,>=0.3.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (0.3.0)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (4.38.0)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (2.13.0)
Requirement already satisfied: pydantic!=1.8,!1.8.1,<3.0.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (2.7.2)
Requirement already satisfied: Jinja2 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (3.1.2)
Requirement already satisfied: setuptools in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (59.0.0)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (23.1)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (3.2.0)
Requirement already satisfied: numpy>=1.19.0 in /usr/local/lib/python3.11/dist-packages (from spacy<3.8.0,>=3.7.2->en-core-web-sm==3.7.1) (1.24.2)
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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) (0.6.0)
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Requirement already satisfied: typing-extensions>=4.12.2 in /usr/local/lib/python3.11/dist-packages (from pydantic!=1.8,!1.8.1,<3.0.0) (4.12.2)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from requests<3.0.0,>=2.13.0) (3.3.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-packages (from requests<3.0.0,>=2.13.0) (3.10.1)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11/dist-packages (from requests<3.0.0,>=2.13.0) (2.1.0)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11/dist-packages (from requests<3.0.0,>=2.13.0) (2024.7.4)
Requirement already satisfied: blis<0.8.0,>=0.7.8 in /usr/local/lib/python3.11/dist-packages (from thinc<8.3.0,>=8.2.2->spacy) (0.7.9)
Requirement already satisfied: confection<1.0.0,>=0.0.1 in /usr/local/lib/python3.11/dist-packages (from thinc<8.3.0,>=8.2.2->spacy) (0.0.1)
Requirement already satisfied: click>=8.0.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0.0,>=0.3.0->spacy) (8.1.7)
Requirement already satisfied: shellingham>=1.3.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0.0,>=0.3.0->spacy) (1.3.0)
Requirement already satisfied: rich>=10.11.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0.0,>=0.3.0->spacy) (13.7.1)
Requirement already satisfied: cloudpathlib<1.0.0,>=0.7.0 in /usr/local/lib/python3.11/dist-packages (from weasel<0.5.0,>=0.1.0->spacy) (0.16.0)
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->spacy) (5.2.1)
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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>=10.11.0->typer<1.0.0) (0.1.1)
✓ Download and installation successful
You can now load the package via spacy.load('en_core_web_sm')
⚠ Restart to reload dependencies
If you are in a Jupyter or Colab notebook, you may need to restart Python in order to load all the package's dependencies. You can do this by selecting the 'Restart kernel' or 'Restart runtime' option.
```

```
import nltk
```

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

```
[nltk_data] Downloading package punkt_tab to /root/nltk_data...
[nltk_data] Unzipping tokenizers/punkt_tab.zip.
True
```

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

```
[nltk_data] Downloading package punkt to /root/nltk_data...
[nltk_data] Package punkt is already up-to-date!
[nltk_data] Downloading package wordnet to /root/nltk_data...
[nltk_data] Package wordnet is already up-to-date!
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Package stopwords is already up-to-date!
[nltk_data] Downloading package averaged_perceptron_tagger to
[nltk_data] /root/nltk_data...
[nltk_data] Package averaged_perceptron_tagger is already up-to-
[nltk_data] date!
```

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/nltk_c
```

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

```
nltk.download('punkt')
nltk.download('stopwords')
```

```
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.",
    "What is your purpose?": "My purpose is to answer your frequently asked questions.",
    "How do I reset my password?": "To reset your password, please visit the password reset page on our website.",
    "Where are you located?": "Our headquarters are located in San Francisco, California.",
    "What services do you provide?": "We offer a range of services including customer support, product assistance, and more.",
    "Can I return a product?": "Yes, you can return products within 30 days of purchase.",
    "What is the status of my order?": "Please provide your order number, and I can check the status for you.",
    "Do you offer international shipping?": "Yes, we do offer international shipping to selected countries.",
    "What payment methods do you accept?": "We accept credit cards, PayPal, and other popular payment methods.",
    "How can I track my order?": "You can track your order by logging into your account and visiting the order history page.",
    "How can I update my profile information?": "You can update your profile information by visiting your account settings.",
    "What is your refund policy?": "Our refund policy allows refunds within 30 days of purchase for eligible items.",
    "How can I unsubscribe from your emails?": "To unsubscribe, click the unsubscribe link at the bottom of any email you've received from us.",
    "Can I change my shipping address?": "Yes, you can change your shipping address before your order is shipped.",
    "What do I do if I receive a damaged item?": "Please contact our support team immediately, and we will assist you with the return or replacement.",
    "Do you have a loyalty program?": "Yes, we offer a loyalty program for repeat customers. You can sign up on our website.",
    "How do I contact customer service?": "You can contact customer service through our website or by emailing support@example.com.",
    "Can I speak to a human representative?": "If you need to speak to a human representative, please contact our support team.",
    "How do I apply for a job at your company?": "You can apply for job openings through our careers page.",
    "Is there a mobile app for your services?": "Yes, we have a mobile app available for both iOS and Android.",
    "How do I change my email address?": "You can change your email address in your account settings.",
    "How can I check my account balance?": "To check your account balance, please log in to your account and visit the 'Account Balance' page.",
    "How can I delete my account?": "To delete your account, please contact our support team, and they will assist you.",
    "Is my data secure with you?": "Yes, we take data security very seriously and follow industry-standard encryption practices.",
    "Do you offer discounts?": "We offer seasonal promotions and discounts from time to time. Be sure to subscribe to our newsletter for the latest offers.",
    "How do I get a refund?": "To get a refund, please follow the instructions on our refund policy page.",
    "What is the warranty on your products?": "We offer a 1-year warranty on most of our products. Please refer to our warranty page for details.",
    "Can I change my order after it is placed?": "Once an order is placed, it cannot be changed, but you can cancel it within 30 minutes of placement.",
    "Do you ship to PO boxes?": "Yes, we do ship to PO boxes.",
    "How can I change the payment method for my order?": "You can update your payment method in your account settings before the order is shipped."
}
```

```
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 set(words)
```

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

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

```
[nltk_data] Downloading package punkt to /root/nltk_data...
[nltk_data] Package punkt is already up-to-date!
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Package stopwords is already up-to-date!
You: what is your name?
Bot: I am an FAQ chatbot!
You: How can I unsubscribe from your emails?
Bot: To unsubscribe, click the unsubscribe link at the bottom of any email you've received from us.
You: Do you have a loyalty program?
```

Bot: Yes, we offer a loyalty program for repeat customers. You can sign up on our website.
You: How do I get a refund?
Bot: Our refund policy allows refunds within 30 days of purchase for eligible items.
You: exit