```
import spacy
# Load spaCy English model
nlp = spacy.load("en_core_web_sm")
# Custom input text
text = "AI-driven platforms personalize learning paths and help students grasp concepts faster."
# POS tagging
doc = nlp(text)
```

```
for token in doc:
    print(f"{token.text:15} > {token.pos_}")
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.metrics.pairwise import cosine_similarity
```

```
AI              > PROPN
-               > PUNCT
driven          > VERB
platforms       > NOUN
personalize     > VERB
learning        > VERB
paths           > NOUN
and             > CCONJ
help            > VERB
students        > NOUN
grasp           > VERB
concepts        > NOUN
faster          > ADV
.               > PUNCT
```

```
# Sample documents
documents = [
"AI tools analyze student performance and provide real-time feedback.",
"Intelligent tutoring systems adapt to each student&#39;s learning style.",
"AI helps automate grading and administrative tasks in schools.",
"Chatbots assist students with answering questions any time of day.",
"Virtual classrooms powered by AI enhance student engagement."]
# User query
query = "How does AI support students in learning?"
# Combine documents and query
corpus = documents + [query]
```

```
# TF-IDF vectorization
vectorizer = TfidfVectorizer()
tfidf_matrix = vectorizer.fit_transform(corpus)
# Compute cosine similarity
similarities = cosine_similarity(tfidf_matrix[-1], tfidf_matrix[:-1]).flatten()
# Rank documents
ranked_docs = sorted(zip(similarities, documents), reverse=True)
```

```
# Display results
print("\nTop relevant documents:\n")
for score, doc in ranked_docs:
    print(f"Score: {score:.2f} > {doc}")
```

```
Top relevant documents:
```

```
Score: 0.16 > AI helps automate grading and administrative tasks in schools.
Score: 0.10 > Intelligent tutoring systems adapt to each student&#39;s learning style.
Score: 0.09 > Chatbots assist students with answering questions any time of day.
Score: 0.06 > Virtual classrooms powered by AI enhance student engagement.
Score: 0.05 > AI tools analyze student performance and provide real-time feedback.
```