

```
!pip install nltk spacy
```

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Requirement already satisfied: nltk in /usr/local/lib/python3.12/dist-packages (3.9.1)
Requirement already satisfied: spacy in /usr/local/lib/python3.12/dist-packages (3.8.11)
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Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.11 in /usr/local/lib/python3.12/dist-pac
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.12/dist-pac
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in /usr/local/lib/python3.12/dist-pac
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Requirement already satisfied: thinc<8.4.0,>=8.3.4 in /usr/local/lib/python3.12/dist-pac
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Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.12/dist-pac
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Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.12/dist-pac
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Requirement already satisfied: confection<1.0.0,>=0.0.1 in /usr/local/lib/python3.12/dist-pac
Requirement already satisfied: cloudpathlib<1.0.0,>=0.7.0 in /usr/local/lib/python3.12/dist-pac
Requirement already satisfied: smart-open<8.0.0,>=5.2.1 in /usr/local/lib/python3.12/dist-pac
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Requirement already satisfied: wrapt in /usr/local/lib/python3.12/dist-pac (from smart-open<
```

```
import nltk
import spacy
```

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

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

```
text = """Artificial Intelligence is transforming the world.
It helps humans solve complex problems and improve productivity."""

```

```
lower_text = text.lower()
print("Lowercase Text:\n")
print(lower_text)
```

Lowercase Text:

```
artificial intelligence is transforming the world.
it helps humans solve complex problems and improve productivity.
```

```
words = lower_text.split()  
word_count = len(words)  
print("Total number of words:", word_count)
```

```
Total number of words: 15
```