

## ASSIGNMENT NO.3

**Title: Implement the NER on textual data using library for “English” language.**

1. CODE USING SPACY :

```
import spacy

from spacy import displacy

nlp = spacy.load("en_core_web_sm")

text = (
    "Apple announced its new iPhone in California on September 12, 2025. "
    "Tim Cook introduced the device alongside Satya Nadella from Microsoft. "
    "The event was covered by The New York Times and CNN, and it will also be "
    "available in stores across London starting October 1, 2025."
)

doc = nlp(text)

for ent in doc.ents:
    print(
        f"""
        {ent.text = }
        {ent.start_char = }
        {ent.end_char = }
        {ent.label_ = }
        spacy.explain('{ent.label_}') = {spacy.explain(ent.label_)}"""
    )
```

```
displacy.serve(doc, style="ent")
```

OUTPUT:



2.CODE USING NLTK:

```
import nltk
```

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

```
nltk.download('averaged_perceptron_tagger')
```

```
nltk.download('maxent_ne_chunker')
```

```
nltk.download('words')
```

```
sentence = (
```

```
    "Apple announced its new iPhone in California on September 12, 2025. "
```

```
    "Tim Cook introduced the device alongside Satya Nadella from Microsoft. "
```

```
    "The event was covered by The New York Times and CNN, and it will also be "
```

```
    "available in stores across London starting October 1, 2025."
```

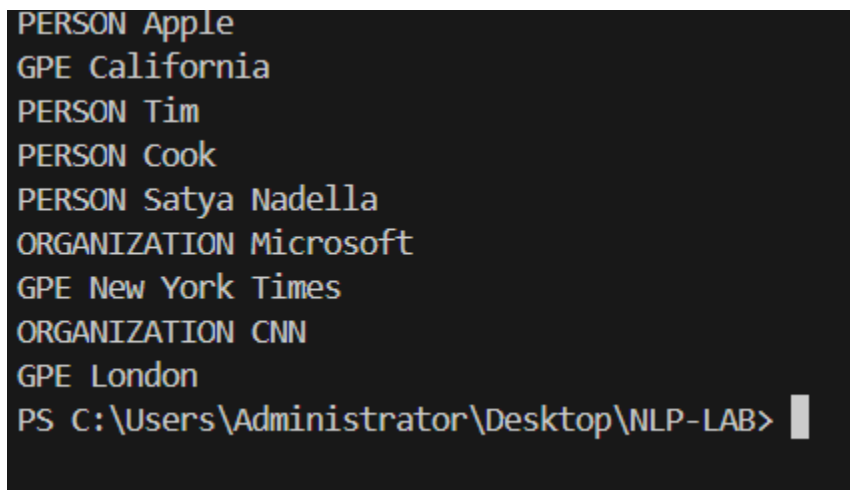
```
)
```

```
for sent in nltk.sent_tokenize(sentence):
```

```
    for chunk in nltk.ne_chunk(nltk.pos_tag(nltk.word_tokenize(sent))):
```

```
if hasattr(chunk, 'label'):
    print(chunk.label(), ' '.join(c[0] for c in chunk))
```

OUTPUT:

A screenshot of a Windows PowerShell terminal window with a black background and white text. The output shows NLP chunks with their labels and text. The labels are in all caps and the text is in title case. The chunks are: PERSON Apple, GPE California, PERSON Tim, PERSON Cook, PERSON Satya Nadella, ORGANIZATION Microsoft, GPE New York Times, ORGANIZATION CNN, GPE London, and a prompt line PS C:\Users\Administrator\Desktop\NLP-LAB> with a cursor.

```
PERSON Apple
GPE California
PERSON Tim
PERSON Cook
PERSON Satya Nadella
ORGANIZATION Microsoft
GPE New York Times
ORGANIZATION CNN
GPE London
PS C:\Users\Administrator\Desktop\NLP-LAB>
```