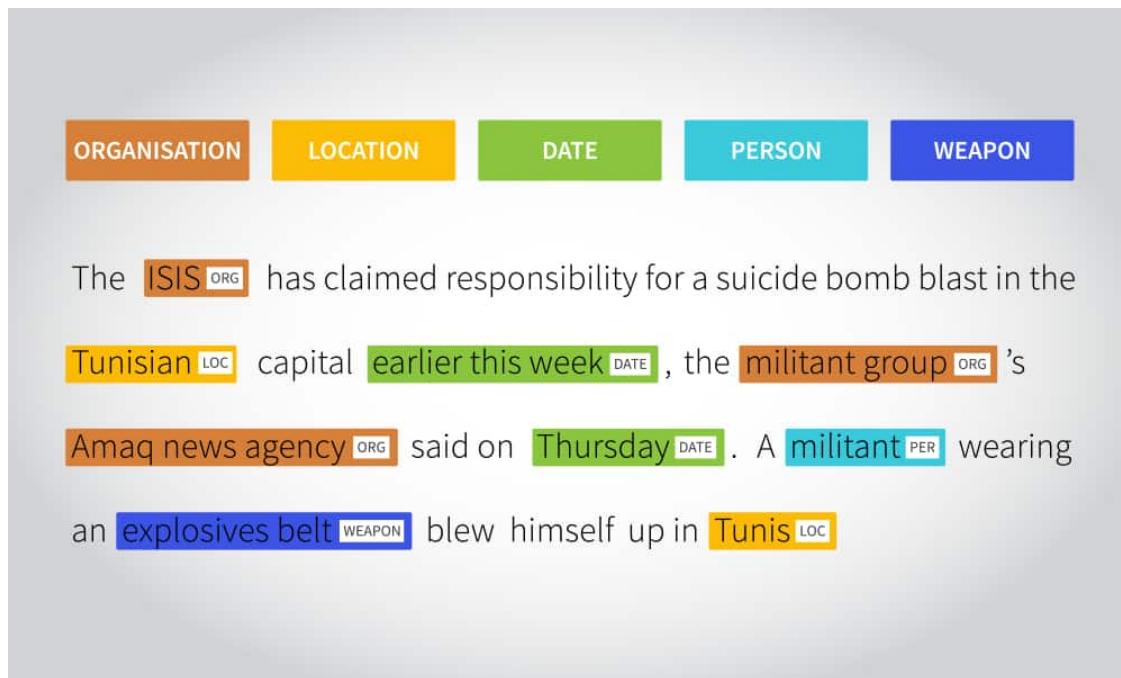


04 Named Entity Recognition

December 20, 2025

1 Named Entity Recognition(NER)

- **Entity Classification:** NER identifies and categorizes entities like names, locations, and dates in text, helping to extract key information.
- **Broad Application:** It enhances tasks like information extraction , question answering, and summarization by highlighting important entities in the text.



```
[1]: import spacy
from prettytable import PrettyTable

nlp = spacy.load('en_core_web_sm')
```

```
[2]: nlp.get_pipe('ner').labels # pre-trained model --> ner
```

```
[2]: ('CARDINAL',
'DATE',
'EVENT',
'FAC',
```

```
'GPE',
'LANGUAGE',
'LAW',
'LOC',
'MONEY',
'NORP',
'ORDINAL',
'ORG',
'PERCENT',
'PERSON',
'PRODUCT',
'QUANTITY',
'TIME',
'WORK_OF_ART')
```

```
[3]: text = """
On December 20, 2025, Satya Nadella announced that Microsoft would invest $5_
↳ billion to build a new research hub in London. This facility, located near_
↳ Kings Cross, aims to rival the innovation seen at Google in Mountain View,_
↳ California.
```

```
"""
```

```
[4]: from spacy import displacy
doc = nlp(text = text)
displacy.render(doc, style = 'ent', jupyter = True)
```

```
<IPython.core.display.HTML object>
```

```
[5]: table = PrettyTable()
table.field_names=['token', 'label', 'explanation', 'Star Char', 'End Char']
for ent in doc.ents:
    table.add_row([ent.text, ent.label_, spacy.explain(ent.label_), ent.
    ↳start_char, ent.end_char])

print(table)
```

token	label	explanation	Star Char	End Char
December 20, 2025	DATE	Absolute or relative dates or periods	4	
21				
Satya Nadella	PERSON	People, including fictional	23	
36				
Microsoft	ORG	Companies, agencies, institutions, etc.	52	
61				

	\$5 billion	MONEY	Monetary values, including unit		75
	85				
	London	GPE	Countries, cities, states		117
	123				
	Kings Cross	ORG	Companies, agencies, institutions, etc.		153
	164				
	Google	ORG	Companies, agencies, institutions, etc.		203
	209				
	Mountain View	GPE	Countries, cities, states		213
	226				
	California	GPE	Countries, cities, states		228
	238				
+-----+-----+-----+-----+					
-----+-----+					