



Aim- Implement Named Entity Recognizer for the given text input

Objective:

To study and write program for named entity recognition

Theory:

Named entity recognition is a natural language processing technique that can automatically scan entire articles and pull out some fundamental entities in a text and classify them into predefined categories. Entities may be,

1. Organization
2. Quantities
3. Monetary values
4. Percentages and more
5. Peoples names
6. Company names
7. Geographical locations
8. Product names
9. Dates and times
10. Amounts of money
11. Names of events

In simple words, Named Entity Recognition is the process of detecting the named entities such as person names, location names, company names etc. from the text. It is also known as entity identification or entity extraction or entity chunking.

Program:

```
import spacy

import pandas as pd

nlp = spacy.load('en_core_web_sm')

doc = nlp(u"Tesla Inc. Chief Executive Officer Elon Musk said he's considering taking the
electric-car maker private, a surprise move that would end the company's eight-year history
as a publicly traded firm.")

for ent in doc.ents:

    print(ent.text, "-", ent.label_, "-", spacy.explain(ent.label_))
```



Output:

Tesla Inc. - ORG - Companies, agencies, institutions, etc.

Elon Musk - PERSON - People, including fictional

eight-year - DATE - Absolute or relative dates or periods

Conclusion: Named Entity Recognition (NER) holds a central position in real-world applications for various compelling reasons. Its critical function lies in information extraction, as it adeptly pinpoints and categorizes entities, including individuals' names, organizations, geographical locations, and dates, embedded within textual data. This capability proves indispensable in a range of applications, such as news summarization, content recommendation systems, and search engines, where precise entity recognition significantly enhances the quality of outcomes. Furthermore, within fields like finance and healthcare, NER contributes to the extraction of crucial information from unstructured documents, ultimately improving decision-making processes and compliance endeavors.

NER's utility extends to sentiment analysis as well, as it identifies entities linked to sentiment-bearing opinions, thus fine-tuning the results of sentiment analysis. In essence, NER serves as a foundational component for extracting valuable insights from vast volumes of textual data across diverse industries, making it a linchpin in data-driven decision-making and information retrieval.