Vidya Vikas Education Trust's
Universal College of Engineering, Kaman Road, Vasai-401208
Accredited B+ Grade by NAAC

Experiment 8

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Date of Practical Performed: - 12/09/2024 Staff Signature with Date & Marks

Aim: Write a program to perform & implement Named Entity Recognition

Theory:

What is Named Entity Recognition (NER)?
Let's first discuss what entities mean?

Entities are the most important chunks of a particular sentence such as noun phrases, verb phrases, or both. Generally, Entity Detection algorithms are ensemble models of :

- Rule-based Parsing, python
- Dictionary lookups,
- POS Tagging,
- Dependency Parsing.

For Example, In the above sentence, the entities are:

Date: Thursday, Time: night, Location: Chateau Marmont, Person: Cate Blanchett Now, we can start our discussion on Named Entity Recognition (NER),

1. Named Entity Recognition is one of the key entity detection methods in NLP.

2. 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,

- Organizations,
- Quantities,
- Monetary values,
- Percentages, and more.
- People's names
- Company names
- Geographic locations (Both physical and political)
- Product names
- Dates and times
- Amounts of money
- Names of events

3. 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.

4. It is also known as entity identification or entity extraction or entity chunking.

5. With the help of named entity recognition, we can extract key information to understand the text, or merely use it to extract important information to store in a database.

6. The applicability of entity detection can be seen in many applications such as

- Automated Chatbots,
- Content Analyzers,
- Consumer Insights, etc.

Commonly used types of name

- **Pip install numpy**
- **Import numpy**
- **Numpy uses much less memory to store data and it provides a mechanism of specifying the data types**
- **"punkt" divides a text into a list of sentences**
- **"Average perceptron tagger" is used for tagging words with their parts of speech (pos)**
- **"Maxnet ne chunker" name entity recognition package**

Code:

```
#pip install spacy

#python -m spacy download en_core_web_sm


import spacy


# Load the English model

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

```
# Sample text for

NER text = """

Apple Inc. is looking at buying U.K. startup for $1

billion. San Francisco is a great place to live.

Barack Obama was the 44th President of the United

States. """


# Process the

text doc =

nlp(text)


# Extract and print named entities

print("Named Entities, Phrases, and

Concepts:") for entity in doc.ents:

    print(f"{entity.text} - {entity.label_}")
```

Output:

```
Named Entities, Phrases, and Concepts:
Apple Inc. - ORG
U.K. - GPE
$1 billion - MONEY
San Francisco - GPE
Barack Obama - PERSON
44th - ORDINAL
the United States - GPE
```

Conclusion: - Thus, we have learned and implemented a code of Named Entity Recognition.

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