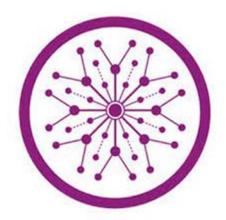
PAI LAB BS in Artificial Intelligence



Department of Software Engineering

Faculty of Computer Science & Information Technology

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ASSIGNMENT NO. 9

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Named Entity Recognition (NER)

1 INTRODUCTION:

This project demonstrates a **basic but complete NER pipeline using SpaCy in Python**. The implementation covers:

- Installing and loading required models.
- Processing real-world text for named entity recognition.
- Displaying the entities.
- Creating a structured dataset from the recognized entities.

2 CODE IMPLEMENTATION:

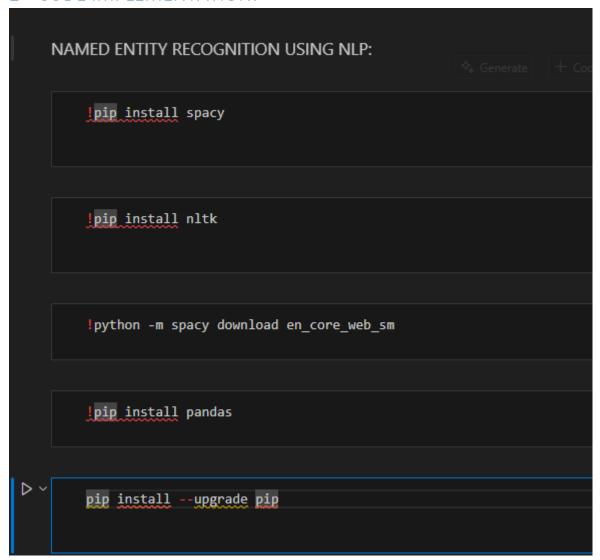


Figure a. IMPORT LIBRARIES

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```
| import pandas as pd import spacy import requests |

from bs4 import BeautifulSoup |

| import pandas as pd import spacy import requests |

| from bs4 import BeautifulSoup |

| nlp = spacy.load("en_core_web_sm") |
| pd.set_option(("display.max_rows", 200) |

| content = '''Trinamool Congress leader Mahua Moitra has moved the Supreme Court against her expulsion from the Lok Sabha over the cash-for-query allegations against her. Moitra was ousted from the Parliament last week after the Ethics Committee of the Lok Sabha found her guilty of jeopardising national security by sharing her parliamentary portal's login credentials with businessman Darshan Hiranandani.'' |
| doc = nlp(content) |
| for ent in doc.ents: |
| print(ent.text, ent.start_char, ent.end_char, ent.label_)
```

Figure b. APPLYING NER

ASSIGNMENT NO. 9

```
for ent in doc.ents:
       print(ent.text, ent.start_char, ent.end_char, ent.label_)
Trinamool Congress 0 18 ORG
Mahua Moitra 26 38 PERSON
the Supreme Court 49 66 ORG
Moitra 157 163 NORP
Parliament 184 194 ORG
last week 195 204 DATE
the Ethics
Committee 211 231 ORG
the Lok Sabha 235 248 ORG
Darshan Hiranandani 373 392 PERSON
   entities = [(ent.text, ent.label , ent.lemma ) for ent in doc.ents]
   df = pd.DataFrame(entities, columns=['text', 'type', 'lemma'])
   print(df)
                    text
                                                  1emma
                            type
      Trinamool Congress
                                     Trinamool Congress
                             ORG
0
1
            Mahua Moitra PERSON
                                           Mahua Moitra
2
       the Supreme Court
                                      the Supreme Court
                             ORG
3
                  Moitra
                                                 Moitra
                           NORP
                                             Parliament
4
              Parliament
                           ORG
5
               last week
                                              last week
                            DATE
6
   the Ethics\nCommittee
                           ORG the Ethics\nCommittee
           the Lok Sabha
                                          the Lok Sabha
                             ORG
```

Figure c. CREATING DF FOR ENTITIES

3 CONCLUSION:

This code serves as an effective introduction to **NER using SpaCy**, showing how unstructured text can be converted into structured, labeled information. It can be extended further for real-world tasks like **news** analysis, chatbot understanding, or information extraction from documents