program 1.Create a basic NLP program to find words, phrases, names and concepts using "spacy.blank" to create the English nlp object. Process the text and instantiate a Doc object in the variable doc. Select the first token of the Doc and print its text

Natural Language Processing (NLP) is a field of artificial intelligence that focuses on the interaction between computers and humans through natural language. spaCy is a popular Python library used for NLP tasks such as tokenization, part-of-speech tagging, named entity recognition, and more.

In this example, we will create a basic NLP program using spaCy to process a text, tokenize it, and extract the first token from the processed document.

Objective: The program demonstrates basic Natural Language Processing (NLP) using spaCy, focusing on:

Tokenization : Breaking text into individual words (tokens).

Phrase and Name Recognition: Identifying meaningful sequences of words.

Concept Extraction: Processing text for key terms.

Basic spaCy Functionality: Using spaCy.blank("en") to create a lightweight NLP pipeline.

Methodology

Initialize NLP Object: Create a blank English NLP pipeline using spacy.blank("en").

Process Input Text: Pass a sample text to the NLP object, generating a Doc object.

Tokenization: Extract individual words (tokens) from the text using doc.

Retrieve First Token: Access and print the first token using doc[0].text.

Output Generation: Display the extracted word, verifying successful text processing.

1. Import spaCy Library

```
import spacy
```

spaCy is a powerful NLP library used for text processing, tokenization, named entity recognition, and more.

2. Create a Blank English NLP Object:

```
nlp = spacy.blank("en")
```

spacy.blank("en") creates an empty English NLP pipeline. This means no pre-trained models or extra functionalities (like named entity recognition or POS tagging) are loaded. This is useful when you want to process raw text efficiently with minimal overhead.

3.Process the Text

```
text = "Asha is in love with Natural Language Processing."
doc = nlp(text)
```

The text "John is learning Natural Language Processing." is passed to the NLP object.

doc = nlp(text) creates a Doc object that holds the processed text.

A Doc object is a sequence of Token objects, where each token represents a word or punctuation in the text.

4. Select and Print the First Token:

```
first_token = doc[0]
print("First token:", first_token.text)
```

```
First token: Asha
```

doc[0] accesses the first token (word) in the processed text.

first_token.text extracts and prints the actual word.

```
# Import the spaCy library
import spacy

# Create an English NLP object using spacy.blank
nlp = spacy.blank("en")

# Define a sample text to process
text = "Asha is in love with Natural Language Processing."

# Process the text using the nlp object to create a Doc object
doc = nlp(text)

# The Doc object is a container for accessing linguistic annotations
# It contains tokens, which are individual words, punctuation marks, etc.

# Select the first token of the Doc object
first_token = doc[0]

# Print the text of the first token
print("First token:", first_token.text)
```

```
First token: Asha
```