1. **Implement a python program using the SpaCy library to perform Named Entity Recognition (NER) on a given text.**

**Aim:**

To implement a python program using the SpaCy library to perform Named Entity Recognition (NER) on a given text.

**Code:**

import spacy

# Load the English NLP model

nlp = spacy.load("en\_core\_web\_sm")

# Take user input for text

text = input("Enter a sentence for Named Entity Recognition: ")

# Process the text

doc = nlp(text)

# Display Named Entities, their labels, and explanations

print("\nNamed Entities and their categories:")

for ent in doc.ents:

print(f"{ent.text} - {ent.label\_} ({spacy.explain(ent.label\_)})")

**Input:**

Enter a sentence for Named Entity Recognition: Elon Musk founded SpaceX in 2002.

**Output:**

Named Entities and their categories:

Elon Musk - PERSON (People, including fictional)

2002 - DATE (Absolute or relative dates or periods)

