SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

- DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

  - ## 23AMB201 - MACHINE LEARNING

    - II YEAR IV SEM

    - ## UNIT I – INTRODUCTION

      - Exercise 3 & 4

Programs

3. Implement Resource Description Frame work by DBpedia

4. Create one- and two-dimensional random dataset and implement Series and Data Frames in python using slicing methods.

3. Resource description framework by DBpedia

```
!pip install rdflib
from rdflib import Graph

# Create an RDF graph
g = Graph()

# Try parsing a specific DBpedia resource known to provide RDF/XML
try:
    g.parse("http://dbpedia.org/resource/Berlin", format="xml")  # Changed URL
    print("Parsing successful!")

    # Query and display results (limit to 10 for brevity)
    for p in list(g)[:10]:
        print(f"{p}")

except Exception as e:
    print(f"Error during parsing: {e}")
```

3. Resource description framework by DBpedia

```
Parsing successful!
(rdflib.term.URIRef('http://dbpedia.org/resource/Arnold_Rieck'), rdflib.term.URIRef('http
(rdflib.term.URIRef('http://dbpedia.org/resource/Ferdinand_Georg_Frobenius'), rdflib.term
(rdflib.term.URIRef('http://dbpedia.org/resource/Siegfried_Landau'), rdflib.term.URIRef('
(rdflib.term.URIRef('http://dbpedia.org/resource/German_language_in_the_Basic_Law'), rdfl
(rdflib.term.URIRef('http://dbpedia.org/resource/Fergie_(DJ)'), rdflib.term.URIRef('http:
(rdflib.term.URIRef('http://dbpedia.org/resource/List_of_Swedish_records_in_athletics'),
(rdflib.term.URIRef('http://dbpedia.org/resource/COSMO_(German_radio_station)'), rdflib.t
(rdflib.term.URIRef('http://dbpedia.org/resource/Kurt_Krüger_(diplomat)'), rdflib.term.UR
(rdflib.term.URIRef('http://dbpedia.org/resource/European_Film_Academy'), rdflib.term.URI
(rdflib.term.URIRef('http://dbpedia.org/resource/2012-13_Basketball_Bundesliga'), rdflib.
```

4. Slicing Dataset

```python
import numpy as np
import pandas as pd

data = np.random.randint(1, 100, size=(5, 4))
columns = ['A', 'B', 'C', 'D']
df = pd.DataFrame(data, columns=columns)

series_A = df['A']

print("Original DataFrame:")
print(df)

print("\nSliced DataFrame (First 3 rows):")
print(df[:3])  # Slicing first 3 rows

print("\nSliced DataFrame (Columns B to D):")
print(df.loc[:, 'B':'D'])  # Slicing columns from B to

print("\nSeries (Column A):")
print(series_A)

print("\nSliced Series (First 3 values from Column A):")
print(series_A[:3])
```

```
Original DataFrame:
    A   B   C   D
0  64  60  21  33
1  76  58  22  89
2  49  91  59  42
3  92  60  80  15
4  62  62  47  62


Sliced DataFrame (First 3 rows):
    A   B   C   D
0  64  60  21  33
1  76  58  22  89
2  49  91  59  42


Sliced DataFrame (Columns B to D):
    B   C   D
0  60  21  33
1  58  22  89
2  91  59  42
3  60  80  15
4  62  47  62

Series (Column A):
0    64
1    76
2    49
3    92
4    62
Name: A, dtype: int64

Sliced Series (First 3 values from Column A):
0    64
1    76
2    49
Name: A, dtype: int64
```

References

1. Aurélien Géron "Hands-On Machine Learning with Scikit-Learn and TensorFlow" Publisher(s): O'Reilly Media, Inc 2017.