

EDS

ACTIVITY-I

Gandhar Chafle

202401110018

CS7-37

1. What is the average count of verbs in WordnetHyponyms?

```
20 Grains Assignment > 1.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetHyponyms')
4  verbs_df = df[df['part_of_speech'].str.lower() == 'verb']
5  avg_verbs = verbs_df['Count'].mean()
6
7  print(f"Average Count of verbs in WordnetHyponyms: {avg_verbs: .2f}")
8
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe
"g:/Semester II/EDS/20 Grains Assignment/1.py"
Average Count of verbs in WordnetHyponyms: 7.51
PS G:\Semester II\EDS>
```

2. What is the number of words with definition longer than 40 characters WordnetVerbs?

```
20 Grains Assignment > 2.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetVerbs')
4  long = df[df['Definition'].str.len() > 40]
5  count_long = long.shape[0]
6
7  print(f"Number of words with Definition longer than 40 characters: {count_long}")
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semeste
r II/EDS/20 Grains Assignment/2.py"
Number of words with Definition longer than 40 characters: 829
PS G:\Semester II\EDS>
```

3. What is the number of words starting with a vowel in WordnetAdjectives?

```
20 Grains Assignment > 3.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetAdjectives')
4  vowels = ('a', 'e', 'i', 'o', 'u')
5  words = df[df['Word'].str.startswith(vowels, na=False)]
6  count = words.shape[0]
7
8  print(f"Number of words starting with a vowel in WordnetAdjectives: {count}")
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [] ... ^ x

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/3.py"
Number of words starting with a vowel in WordnetAdjectives: 387
PS G:\Semester II\EDS>
```

4. Show the words in WordnetNouns with count = 1.

```
20 Grains Assignment > 4.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetNouns')
4  count = df[df['Count'] == 1]
5
6  print("Words in WordnetNouns with Count = 1:")
7  print(list(count['Word']))
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [] ... ^ x

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/4.py"
Words in WordnetNouns with Count = 1:
['A', 'A', 'B', 'B', 'C', 'C', 'C', 'D', 'E', 'e', 'F', 'G', 'g', 'H', 'I', 'J', 'K', 'K', 'K', 'L', 'M', 'M', 'M', 'M', 'N', 'O', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X', 'Y', 'Z']
PS G:\Semester II\EDS>
```

5. What is the sum of 'Count' for words starting with a number in WordnetThesaurus?

```
20 Grains Assignment > 5.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetThesaurus')
4  df['Word'] = df['Word'].astype(str)
5  words = df[df['Word'].str[0].str.isnumeric()]
6  sum = words['Count'].sum()
7
8  print(f"Sum of 'Count' for words starting with a number in WordnetThesaurus: {sum}")
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II
/EDS/20 Grains Assignment/5.py"
Sum of 'Count' for words starting with a number in WordnetThesaurus: 2053
PS G:\Semester II\EDS> 
```

6. Give the number of words starting with 'c' in WordnetHypernyms.

```
20 Grains Assignment > 6.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetHypernyms')
4  df['lemma'] = df['lemma'].astype(str)
5  words_c = df[df['lemma'].str.lower().str.startswith('c')]
6  count = len(words_c)
7
8  print(f"Number of words starting with 'c' in WordnetHypernyms: {count}")
9
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X] ... ^ X

PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II
/EDS/20 Grains Assignment/6.py"
Number of words starting with 'c' in WordnetHypernyms: 12283
PS G:\Semester II\EDS>
```

7. What is the maximum count in Wordnet Synonyms?

```
20 Grains Assignment > 7.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetSynonyms')
4  max = df['Count'].max()
5
6  print(f"The maximum count in WordnetSynonyms is: {max}")
7
8
9
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X] ... ^ X

PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II
/EDS/20 Grains Assignment/7.py"
The maximum count in WordnetSynonyms is: 71
PS G:\Semester II\EDS>
```

8. What is the number of words with POS = adverb in WordnetSynonyms?


```
20 Grains Assignment > 8.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetSynonyms')
4  words_pos = df[df['POS'] == 'adverb']
5  count = words_pos.shape[0]
6
7  print(f"Number of words with POS = 'adverb' in WordnetSynonyms: {count}")
8
9
10
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [X] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II
/EDS/20 Grains Assignment/8.py"
Number of words with POS = 'adverb' in WordnetSynonyms: 2694
PS G:\Semester II\EDS>
```

9. Give number of words in WordnetVerbs where Example 1 has more than 50 characters.

```
20 Grains Assignment > 9.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetVerbs')
4  longwords = df[df['Example 1'].str.len() > 50]
5  count = longwords.shape[0]
6
7  print(f"Number of words in WordnetVerbs where Example 1 has more than 50 characters:
8
9
10
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [X] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II
/EDS/20 Grains Assignment/9.py"
Number of words in WordnetVerbs where Example 1 has more than 50 characters: 434
PS G:\Semester II\EDS>
```

10. What is the average count in WordnetAdverbs?

```
20 Grains Assignment > 10.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetAdverbs')
4  avg = df['Count'].mean()
5
6  print(f"Average count in WordnetAdverbs: {avg: .2f}")
7
8
9
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [X] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/10.py"
Average count in WordnetAdverbs: 9.50
PS G:\Semester II\EDS>
```

11. Give number of words with POS = 'adjective' in WordnetAntonyms.

```
20 Grains Assignment > 11.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetAntonyms')
4  words = df[df['POS'] == 'adjective']
5  count_words = words.shape[0]
6
7  print(f"Number of words with POS = 'adjective' in WordnetAntonyms: {count_words}")
8
9

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [ ] ... ^ X

PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/11.py"
Number of words with POS = 'adjective' in WordnetAntonyms: 4280
PS G:\Semester II\EDS>
```

12. Give the number of times part_of_speech = 'adverb' in WordnetHyponyms.

```
20 Grains Assignment > 12.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetHyponyms')
4  hyponyms = df[df['part_of_speech'] == 'noun']
5  count_hyponyms = hyponyms.shape[0]
6
7  print(f"Number of times part_of_speech = 'adverb' in WordnetHyponyms: {count_hyponyms}")
8
9

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [ ] ... ^ X

PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/12.py"
Number of times part_of_speech = 'adverb' in WordnetHyponyms: 25720
PS G:\Semester II\EDS>
```


13. What is the number of words in WordnetAdjectives where Example 4 has less than 40 characters?

```
20 Grains Assignment > 13.py > words
1 import pandas as pd
2
3 df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetAdjectives')
4 words = df[df['Example 4'].str.len() < 20]
5 count_words = words.shape[0]
6
7 print(f"Number of words in WordnetAdjectives where Example 4 has less than 40 characters: {count_words}")
8
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [X] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/13.py"
Number of words in WordnetAdjectives where Example 4 has less than 40 characters: 464
PS G:\Semester II\EDS>
```

14. What is the maximum count in WordnetNouns?

```
20 Grains Assignment > 14.py > ...
1 import pandas as pd
2
3 df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetNouns')
4 max_count_nouns = df['Count'].max()
5
6 print(f"Maximum count in WordnetNouns: {max_count_nouns}")
7
8
9
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [X] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/14.py"
Maximum count in WordnetNouns: 71
PS G:\Semester II\EDS>
```

15. Give the number of words ending with 'ing' in WordnetAntonyms.

```
20 Grains Assignment > 15.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetAntonyms')
4  ing = df[df['Word'].str.endswith('ing', na=False)]
5  count_ing = ing.shape[0]
6
7  print(f"Number of words ending with 'ing' in WordnetAntonyms: {count_ing}")
8
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [X] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/15.py"
Number of words ending with 'ing' in WordnetAntonyms: 805
PS G:\Semester II\EDS>
```

16. What is the number of words with less than 4 characters in WordnetAdverbs?

```
20 Grains Assignment > 16.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetAdverbs')
4
5  # Filter the rows where "Word" has less than 4 characters
6  adverbs = df[df['Word'].str.len() < 4]
7
8  # Count the number of words with less than 4 characters
9  count_adverbs = adverbs.shape[0]
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/S
emester II/EDS/20 Grains Assignment/16.py"
Number of words with less than 4 characters in WordnetAdverbs: 65
PS G:\Semester II\EDS>
```

17. Show the number of rows where 'Term 4' contains '(antonym)' in WordnetThesaurus.

```
20 Grains Assignment > 17.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetThesaurus')
4  term4 = df[df['Term 4'].str.contains(r'\(antonym\)', na=False, regex=True)]
5  count_term4 = term4.shape[0]
6
7  print(f"Number of rows where 'Term 4' contains '(antonym)' in WordnetThesau
8
9  
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/S
emester II/EDS/20 Grains Assignment/17.py"
Number of rows where 'Term 4' contains '(antonym)' in WordnetThesaurus: 1905
PS G:\Semester II\EDS>
```

18. What is the number of words ending with 'ly' in WordnetVerbs?

```
20 Grains Assignment > 18.py > df
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetVerbs')
4  ly = df[df['Word'].str.endswith('ly', na=False)]
5  count_ly = ly.shape[0]
6
7  print(f"Number of words ending with 'ly' in WordnetVerbs: {count_ly}")
8
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [X] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/18.py"
Number of words ending with 'ly' in WordnetVerbs: 18
PS G:\Semester II\EDS>
```

19. Give the number of words with more than 13 characters in WordnetNouns.

```
20 Grains Assignment > 19.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetNouns')
4  nouns = df[df['Word'].str.len() > 13]
5  count_nouns = nouns.shape[0]
6
7  print(f"Number of words with more than 13 characters in WordnetNouns: {count_nouns}")
8
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [] [X] ... ^ X

```
PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/Semester II/EDS/20 Grains Assignment/19.py"
Number of words with more than 13 characters in WordnetNouns: 16044
PS G:\Semester II\EDS>
```

20. Give the number of senses with more than one word in WordnetAdverbs.

```
20 Grains Assignment > 20.py > ...
1  import pandas as pd
2
3  df = pd.read_excel('WordNet.xlsx', sheet_name='WordnetAdverbs')
4  word = df[df['Senses'].str.split().str.len() > 1]
5  count_word = word.shape[0]
6
7  print(f"Number of senses with more than one word in WordnetAdverbs: {count_}
8

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X] ... ^ X

PS G:\Semester II\EDS> & C:/Users/pc/AppData/Local/Programs/Python/Python313/python.exe "g:/S
emester II/EDS/20 Grains Assignment/20.py"
Number of senses with more than one word in WordnetAdverbs: 578
PS G:\Semester II\EDS>
```