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PRN:-202401110043

Roll no:-CS7-38

Dataset:-WordNet

1 .Display 1st five rows of the data set

```
[4] df.head()
```

	Word	Count	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7
0	's gravenhage	13	The Hague	's Gravenhage	Den Haag	city (generic term)	metropolis (generic term)	urban center (generic term	NaN
1	Tween decks	12	between decks	NaN	NaN	NaN	NaN	NaN	NaN
2	0.22	4	twenty-two	firearm (generic term)	piece (generic term)	small-arm (generic term)	NaN	NaN	NaN
3	22-calibre	11	22 caliber	22-caliber	22 calibre	diameter	diam (related term)	NaN	NaN
4	22 caliber	11	22-caliber	22 calibre	22-calibre	diameter	diam (related term)	NaN	NaN

2.Display last 5 rows of the data set

```
df.tail()
```

	Word	Count	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7
204675	zymosis	7	zymolysis	fermentation	fermenting	ferment	chemical process (generic term)	chemical change (generic term)	chemical action (generic term)
204676	zymosis	7	infection (generic term)	NaN	NaN	NaN	NaN	NaN	NaN
204677	zymotic	7	zymolytic	chemical process	chemical change	chemical action (related term)	NaN	NaN	NaN
204678	zymotic	7	infection (related term)	NaN	NaN	NaN	NaN	NaN	NaN
204679	zymurgy	7	biochemistry (generic term)	NaN	NaN	NaN	NaN	NaN	NaN

3.Easytoanalyze,filter,andvisualizelarge datasets.

[5] df

	Word	Count	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7
0	's gravenhage	13	The Hague	's Gravenhage	Den Haag	city (generic term)	metropolis (generic term)	urban center (generic term	NaN
1	'tween decks	12	between decks	NaN	NaN	NaN	NaN	NaN	NaN
2	0.22	4	twenty-two	firearm (generic term)	piece (generic term)	small-arm (generic term)	NaN	NaN	NaN
3	22-calibre	11	22 caliber	22-caliber	22 calibre	diameter	diam (related term)	NaN	NaN
4	22 caliber	11	22-caliber	22 calibre	22-calibre	diameter	diam (related term)	NaN	NaN
...	...	...	...	...	...	...	...	...	...
204675	zymosis	7	zymolysis	fermentation	fermenting	ferment	chemical process (generic term)	chemical change (generic term)	chemical action (generic term)
204676	zymosis	7	infection (generic term)	NaN	NaN	NaN	NaN	NaN	NaN
204677	zymotic	7	zymolytic	chemical process	chemical change	chemical action (related term)	NaN	NaN	NaN
204678	zymotic	7	infection (related term)	NaN	NaN	NaN	NaN	NaN	NaN
204679	zymurgy	7	biochemistry (generic term)	NaN	NaN	NaN	NaN	NaN	NaN

4. To describe the dataset

[9] df.describe()

1 to 8 of 8 entries Filter

index	Count
count	204679.0
mean	10.233214447589928
std	4.886527415586465
min	1.0
25%	7.0
50%	9.0
75%	13.0
max	21.0

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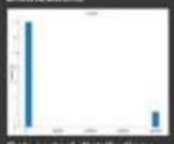
Like what you see? Visit the data table notebook to learn more about interactive tables.

Distributions



Categorical distributions

5. To display information about dataset

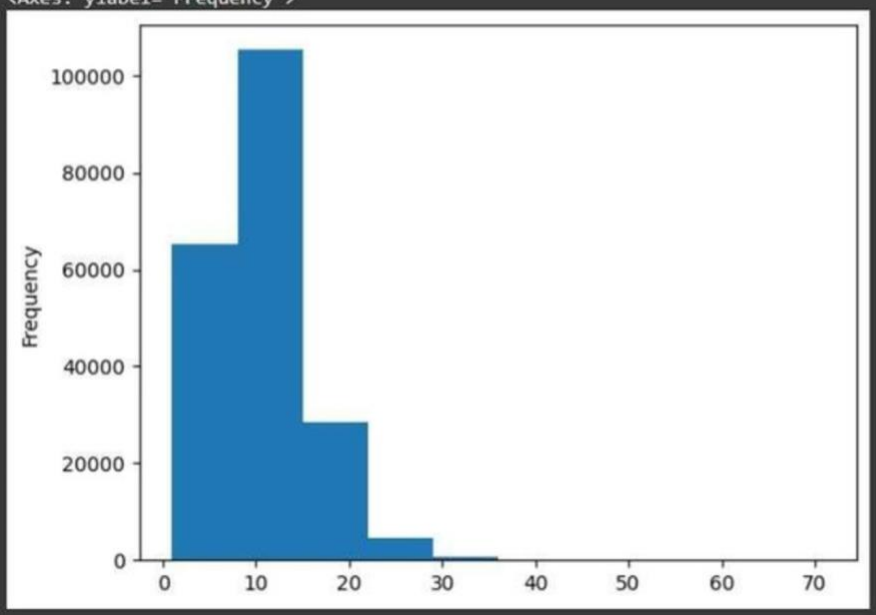
```
[11] df.info()

<class 'pandas.core.frame.DataFrame'>
Index: 204679 entries, 0 to 204679
Data columns (total 9 columns):
 #   Column  Non-Null Count   Dtype
---  ------  --------------   -----
 0   Word    204674 non-null  object
 1   Count   204679 non-null  int64
 2   Term 1  204679 non-null  object
 3   Term 2  178804 non-null  object
 4   Term 3  140133 non-null  object
 5   Term 4  93700 non-null   object
 6   Term 5  60820 non-null   object
 7   Term 6  38155 non-null   object
 8   Term 7  24151 non-null   object
dtypes: int64(1), object(8)
memory usage: 15.6+ MB
```

6. Distribution of count values

```
df['Count'].astype(int).plot.hist()

<Axes: ylabel='Frequency'>
```



7. Tocleanthedatabyremovingmissing

translation

```
[6] df.dropna(subset=['Term 1'], inplace=True)
    print(df[['Word', 'Term 1']].head())
```

```
            Word         Term 1
0  's gravenhage      The Hague
1   'tween decks  between decks
2           0.22     twenty-two
3    .22-calibre    .22 caliber
4    .22 caliber    .22-caliber
```

8.Find the most common value in the columns

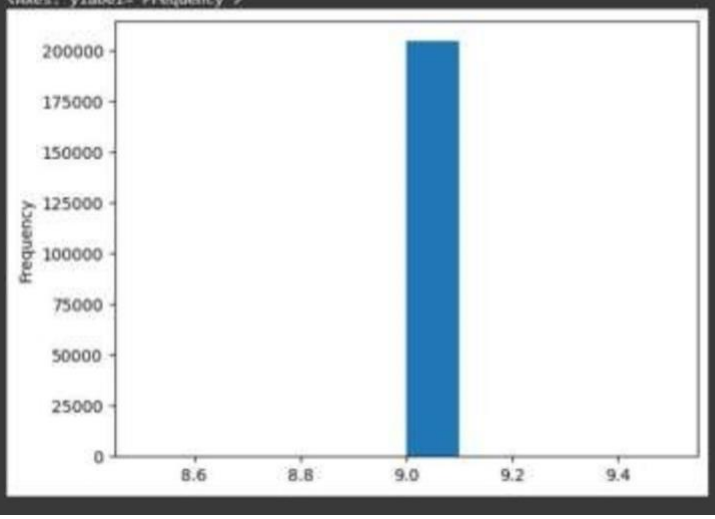
9. Toplotahistogramshowinghowmanynon missings entries each row

```
[34] print(df.iloc[:,2:].stack().value_counts().idxmax())
```

```
UNKNOWN
```

```
[35] df.iloc[:,2:].notna().sum(1).plot.hist()
```

```
<Axes: ylabel='Frequency'>
```



10. Tofindthecellthathasshortesttextlength

1 1 . Tofindrowswherethereisonly0-1 nonnull value

```
[30] print(df.iloc[:,2:].stack().dropna().str.len().idxmin())

(np.int64(16), 'Term 2')

[33] print(df[df.iloc[:,2:].notna().sum(1)<=1]['Word'])

Series([], Name: Word, dtype: object)
```

1 2. Display first 5 rows of the columns

1 3. countshowmanytimestheIWordIcolumn has duplicate entries.

```
[24] print(df[['Word','Term 2']].head())

             Word                 Term 2
0  's gravenhage           's Gravenhage
1   'tween decks                 UNKNOWN
2           0.22  firearm (generic term)
3    .22-calibre             .22-caliber
4    .22 caliber             .22 calibre

[25] print(df['Word'].duplicated().sum())

58888
```

14. countsthenumberofmissing(NaN) values in each column 5. countshowmanyrowshaveallvalues missing across the selected columns

```
[36] print(df.iloc[:,2:].isna().sum().sort_values(ascending=False))

Term 1          0
Term 2          0
Term 3          0
Term 4          0
Term 5          0
Term 6          0
Term 7          0
rel_count       0
related_count   0
dtype: int64

print((df.iloc[:,2:].isna().all(1)).sum())

0
```

6.randomlyinspecting5wordsandtheir related terms

```
[17] df.sample(5)
```

	Word	Count	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7
186801	train	5	prepare	learn (generic term)	study (generic term)	read (generic term)	take (generic term)	NaN	NaN
91343	hypophyseal stalk	17	infundibulum (generic term)	NaN	NaN	NaN	NaN	NaN	NaN
67693	fireball	0	bolide	meteor (generic term)	shooting star (generic term)	NaN	NaN	NaN	NaN
204603	zoopsia	7	visual hallucination (generic term)	NaN	NaN	NaN	NaN	NaN	NaN
74386	generally	0	broadly	loosely	broadly speaking	narrowly (antonym)	NaN	NaN	NaN

7.returns the shape of the DataFrame 8.checks for missing values

```
[28] print((df.iloc[:,2:].isna().all(1)).sum())

0
```

```
[12] df.shape
```

```
(204679, 9)
```

```
df.isnull().sum()
```

	0
Word	5
Count	0
Term 1	0
Term 2	25875
Term 3	64546
Term 4	110979
Term 5	143859
Term 6	166524
Term 7	180528

dtype: int64

9.calculates the length of each string in the Word column.

```
[29] print(df.loc[df['Word'].str.len().idxmax(), 'Word'])
```

```
blood-oxygenation level dependent functional magnetic resonance imaging
```

20. selectsallcolumnsstartingfromthe3rd column onward