

```
In [1]: import pandas as pd
```

```
In [2]: df = pd.read_csv('words.csv', index_col='Word')
```

```
In [3]: df.head()
```

```
Out[3]:
```

	Char Count	Value
Word		
aa	2	2
aah	3	10
aahed	5	19
aahing	6	40
aahs	4	29

▼ Activities

▼ How many elements does this dataframe have?

```
In [4]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 172821 entries, aa to zyzzyvas
Data columns (total 2 columns):
#   Column      Non-Null Count  Dtype
---  ---
0   Char Count  172821 non-null int64
1   Value       172821 non-null int64
dtypes: int64(2)
memory usage: 4.0+ MB
```

▼ **What is the value of the word *microspectrophotometries* ?**

```
In [5]: df.loc['microspectrophotometries']
```

```
Out[5]: Char Count      24
Value          317
Name: microspectrophotometries, dtype: int64
```

▼ **What is the highest possible value of a word?**

```
In [7]: df['Value'].max()
```

```
Out[7]: 319
```

▼ **Which of the following words have a Char Count of 7 and a Value of 87 ?**

```
In [9]: df.loc[['enfold', 'pinfish', 'microbrew', 'glowing', 'superheterodyne']]
```

```
Out[9]:
```

	Char Count	Value
Word		
enfold	6	56
pinfish	7	81
microbrew	9	106
glowing	7	87
superheterodyne	15	198

▼ **What is the highest possible length of a word?**

```
In [14]: df['Lenght'] = [len(x) for x in df.index]
df.head()
```

```
Out[14]:
```

	Char Count	Value	Lenght
--	------------	-------	--------

Word			
<hr/>			
aa	2	2	2
aah	3	10	3
aahed	5	19	5
aahing	6	40	6
aahs	4	29	4

```
In [19]: df['Lenght'].max()
```

```
Out[19]: 28
```

▼ *What is the word with the value of 319 ?*

```
In [20]: df.loc[df['Value']==319]
```

```
Out[20]:
```

	Char Count	Value	Lenght
Word			
<hr/>			
reinstitutionalizations	23	319	23

▼ *What is the most common value?*

```
In [30]: df.describe()
```

```
Out[30]:
```

	Char Count	Value	Lenght
count	172821.000000	172821.000000	172821.000000
mean	9.087628	107.754179	9.087628
std	2.818285	39.317452	2.818285
min	2.000000	2.000000	2.000000
25%	7.000000	80.000000	7.000000
50%	9.000000	103.000000	9.000000
75%	11.000000	131.000000	11.000000
max	28.000000	319.000000	28.000000

```
In [29]: df['Value'].mode()
```

```
Out[29]: 0    93
Name: Value, dtype: int64
```

▼ **What is the shortest word with value 274 ?**

```
In [33]: df.loc[df['Value']==274, 'Lenght']
```

```
Out[33]: Word
countercountermeasure    21
overprotectivenesses    20
psychophysiologically    21
Name: Lenght, dtype: int64
```

▼ **Create a column *Ratio* which represents the 'Value Ratio' of a word**

```
In [36]: df['Ratio']=df['Value']/df['Lenght']  
df.head(10)
```

```
Out[36]:
```

	Char Count	Value	Lenght	Ratio
Word				
aa	2	2	2	1.000000
aah	3	10	3	3.333333
aahed	5	19	5	3.800000
aahing	6	40	6	6.666667
aahs	4	29	4	7.250000
aal	3	14	3	4.666667
aalii	5	32	5	6.400000
aaliis	6	51	6	8.500000
aals	4	33	4	8.250000
aardvark	8	76	8	9.500000

▼ *What is the maximum value of Ratio ?*

```
In [38]: df['Ratio'].max()
```

```
Out[38]: 22.5
```

▼ *What word is the one with the highest Ratio ?*

```
In [39]: df.loc[df['Ratio']==22.5]
```

```
Out[39]:
```

	Char Count	Value	Lenght	Ratio
Word				
xu	2	45	2	22.5

▼ *How many words have a Ratio of 10 ?*

```
In [40]: df.loc[df['Ratio']==10]
```

```
Out[40]:
```

	Char Count	Value	Lenght	Ratio
Word				
aardwolf	8	80	8	10.0
abatements	10	100	10	10.0
abducts	7	70	7	10.0
abetment	8	80	8	10.0
abettals	8	80	8	10.0
...
ycleped	7	70	7	10.0
yodeled	7	70	7	10.0
zamia	5	50	5	10.0
zebecs	6	60	6	10.0
zwieback	8	80	8	10.0

2604 rows × 4 columns

▼ *What is the maximum Value of all the words with a Ratio of 10 ?*

```
In [41]: df_ratio_10 = df.loc[df['Ratio']==10]
df_ratio_10.head()
```

```
Out[41]:
```

	Char Count	Value	Lenght	Ratio
Word				
aardwolf	8	80	8	10.0
abatements	10	100	10	10.0
abducts	7	70	7	10.0
abetment	8	80	8	10.0
abettals	8	80	8	10.0

```
In [42]: df_ratio_10['Value'].max()
```

```
Out[42]: 240
```

- ▼ ***Of those words with a Value of 260 , what is the lowest Char Count found?***

```
In [47]: df.loc[df['Value']==260]['Char Count']
```

```
Out[47]: Word
countermobilizations    20
hydroxytryptamine       17
neuropsychologists      18
psychophysiolgologist   18
revolutionarinesses     19
underrepresentations    20
Name: Char Count, dtype: int64
```

- ▼ ***Based on the previous task, what word is it?***

```
In [48]: df.loc[df['Value']==260]['Char Count']
```

```
Out[48]: Word
countermobilizations    20
hydroxytryptamine       17
neuropsychologists      18
psychophysiolologist    18
revolutionarinesses     19
underrepresentations    20
Name: Char Count, dtype: int64
```

```
In [ ]:
```