In [68]:

```
import pandas as pd
import seaborn as sns
import numpy as np
import matplotlib.pyplot as plt
```

0. Dataset can be found on:

https://www.kaggle.com/rahuldogra/top5000youtubechannels

In [69]:

```
# I would like to appreciate to Data Thinkers on Youtube and the google play
```

In [70]:

```
data = pd.read_csv(r'E:\Data Analyst Project\top-5000-youtube-channels.csv')
```

1. Show top and last rows

In [71]:

```
data.head(5)
```

Out[71]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
0	1st	A++	Zee TV	82757	18752951	20869786591
1	2nd	A++	T-Series	12661	61196302	47548839843
2	3rd	A++	Cocomelon - Nursery Rhymes	373	19238251	9793305082
3	4th	A++	SET India	27323	31180559	22675948293
4	5th	A++	WWE	36756	32852346	26273668433

In [72]:

```
data.tail(5)
```

Out[72]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
4995	4,996th	B+	Uras Benlioğlu	706	2072942	441202795
4996	4,997th	B+	HI-TECH MUSIC LTD	797	1055091	377331722
4997	4,998th	B+	Mastersaint	110	3265735	311758426
4998	4,999th	B+	Bruce McIntosh	3475	32990	14563764
4999	5,000th	B+	SehatAQUA	254	21172	73312511

2. Find the statistics of the dataset

In [73]:

```
pd.options.display.float_format='={:.2f}'.format
```

In [74]:

```
data.describe(include='all')
```

Out[74]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
count	5000	5000	5000	5000	5000	=5000.00
unique	5000	6	4993	2286	4612	NaN
top	1st	B+	Thơ Nguyễn	26	--	NaN
freq	1	2956	2	17	387	NaN
mean	NaN	NaN	NaN	NaN	NaN	=1071449400.15
std	NaN	NaN	NaN	NaN	NaN	=2003843972.12
min	NaN	NaN	NaN	NaN	NaN	=75.00
25%	NaN	NaN	NaN	NaN	NaN	=186232945.75
50%	NaN	NaN	NaN	NaN	NaN	=482054780.00
75%	NaN	NaN	NaN	NaN	NaN	=1124367826.75
max	NaN	NaN	NaN	NaN	NaN	=47548839843.00

3. Clean the dataset

In [75]:

```
data.head(20)
```

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Out[75]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
0	1st	A++	Zee TV	82757	18752951	20869786591
1	2nd	A++	T-Series	12661	61196302	47548839843
2	3rd	A++	Cocomelon - Nursery Rhymes	373	19238251	9793305082
3	4th	A++	SET India	27323	31180559	22675948293
4	5th	A++	WWE	36756	32852346	26273668433
5	6th	A++	Movieclips	30243	17149705	16618094724
6	7th	A++	netd müzik	8500	11373567	23898730764
7	8th	A++	ABS-CBN Entertainment	100147	12149206	17202609850
8	9th	A++	Ryan ToysReview	1140	16082927	24518098041
9	10th	A++	Zee Marathi	74607	2841811	2591830307
10	11th	A+	5-Minute Crafts	2085	33492951	8587520379
11	12th	A+	Canal KondZilla	822	39409726	19291034467
12	13th	A+	Like Nastya Vlog	150	7662886	2540099931
13	14th	A+	Ozuna	50	18824912	8727783225
14	15th	A+	Wave Music	16119	15899764	10989179147
15	16th	A+	Ch3Thailand	49239	11569723	9388600275
16	17th	A+	WORLDSTARHIPHOP	4778	15830098	11102158475
17	18th	A+	Vlad and Nikita	53	--	1428274554
18	19th	A+	Badabun	3060	23603062	5860444053
19	20th	A+	WorkpointOfficial	24287	17687229	14022189654

Replace -- with NaN

In [76]:
```
data=data.replace('--',np.nan,regex=True)
```

In [77]:
```
data[data['Channel name']=='Vlad and Nikita']
```

Out[77]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
17	18th	A+	Vlad and Nikita	53	NaN	1428274554

4. Check and Drop the missing values

In [78]:
```
data.isnull().sum()
```

```
Out[78]: Rank              0
         Grade             0
         Channel name      0
         Video Uploads     6
         Subscribers     387
         Video views       0
         dtype: int64
```

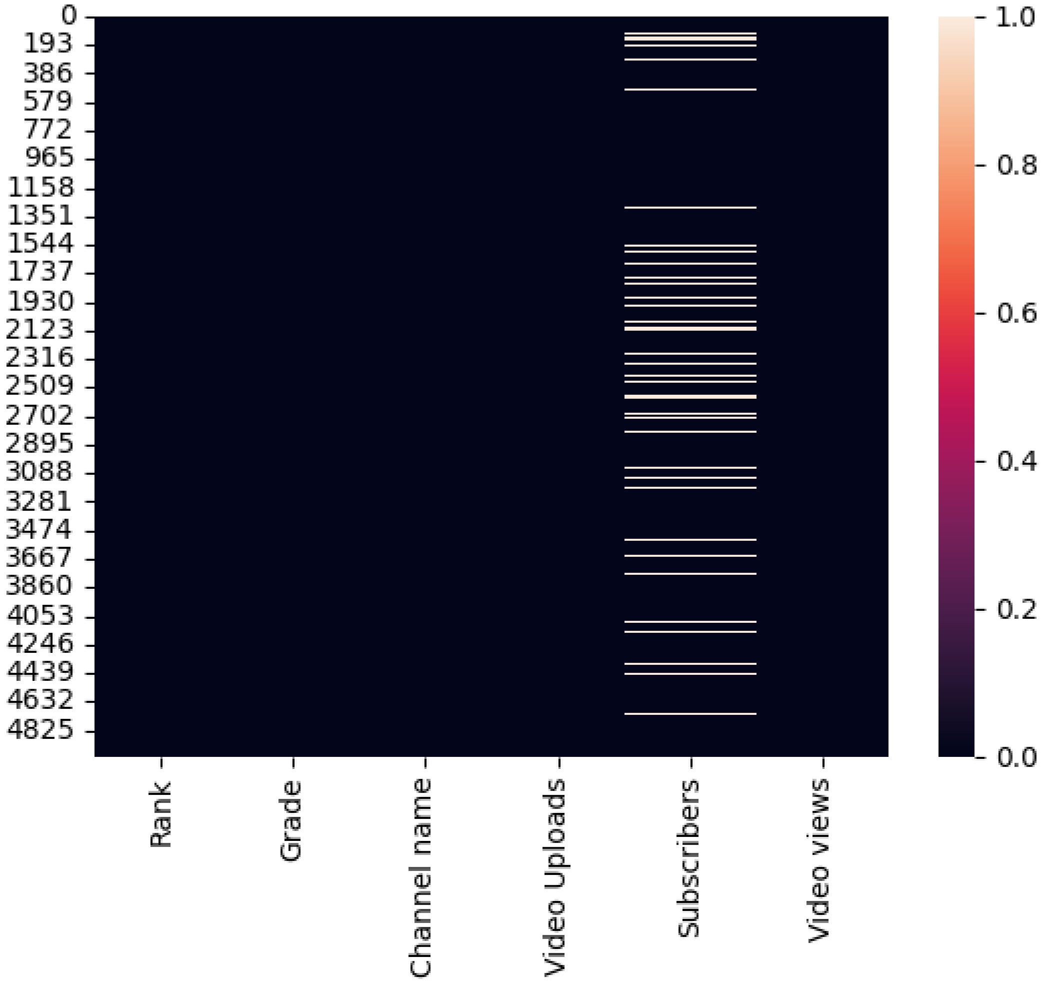
How many percent the missing values?

```
In [79]: per_missing=data.isnull().sum() / len(data) * 100
         per_missing
```

```
Out[79]: Rank             =0.00
         Grade            =0.00
         Channel name     =0.00
         Video Uploads    =0.12
         Subscribers      =7.74
         Video views      =0.00
         dtype: float64
```

```
In [80]: sns.heatmap(data.isnull())
```

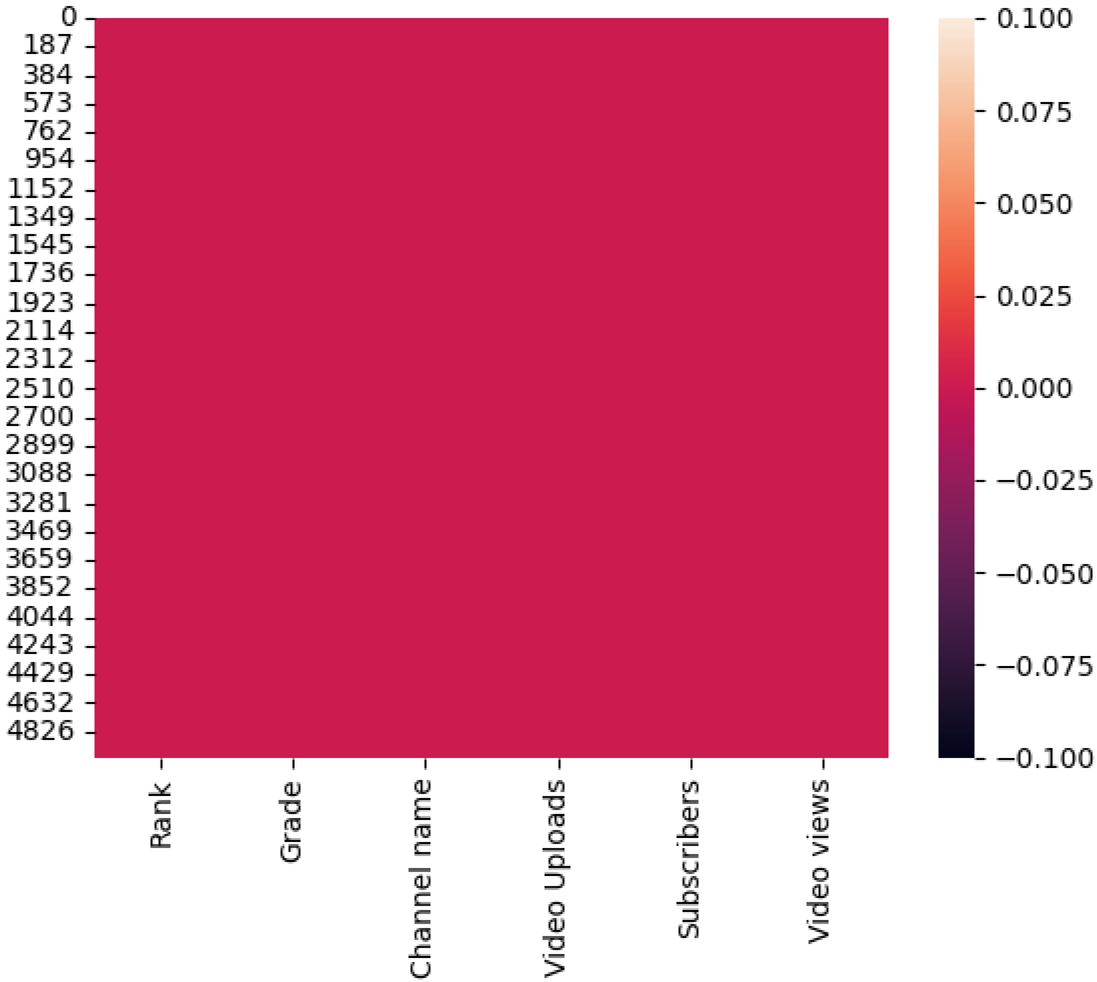
```
Out[80]: <Axes: >
```



Drop the rows which contain missing values

```
In [81]: data.dropna(axis=0,inplace=True)
         sns.heatmap(data.isnull())
```

```
Out[81]: <Axes: >
```



5. Clean the dataset (2)

```
In [82]: data.head()
```

Out[82]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
0	1st	A++	Zee TV	82757	18752951	20869786591
1	2nd	A++	T-Series	12661	61196302	47548839843
2	3rd	A++	Cocomelon - Nursery Rhymes	373	19238251	9793305082
3	4th	A++	SET India	27323	31180559	22675948293
4	5th	A++	WWE	36756	32852346	26273668433

Convert rank (object) into number (int)

Replace st from 1st, etc

In [83]:
```python
data['Rank']=data['Rank'].str[:-2]
```

In [84]:
```python
data.head()
```

Out[84]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
0	1	A++	Zee TV	82757	18752951	20869786591
1	2	A++	T-Series	12661	61196302	47548839843
2	3	A++	Cocomelon - Nursery Rhymes	373	19238251	9793305082
3	4	A++	SET India	27323	31180559	22675948293
4	5	A++	WWE	36756	32852346	26273668433

In [85]:
```python
data.tail()
```

Out[85]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
4995	4,996	B+	Uras Benlioğlu	706	2072942	441202795
4996	4,997	B+	HI-TECH MUSIC LTD	797	1055091	377331722
4997	4,998	B+	Mastersaint	110	3265735	311758426
4998	4,999	B+	Bruce McIntosh	3475	32990	14563764
4999	5,000	B+	SehatAQUA	254	21172	73312511

Replace ',' from thousand numbers

In [86]:
```python
data['Rank']=data['Rank'].str.replace(',','').astype('int')
data.tail()
```

Out[86]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
4995	4996	B+	Uras Benlioğlu	706	2072942	441202795
4996	4997	B+	HI-TECH MUSIC LTD	797	1055091	377331722
4997	4998	B+	Mastersaint	110	3265735	311758426
4998	4999	B+	Bruce McIntosh	3475	32990	14563764
4999	5000	B+	SehatAQUA	254	21172	73312511

In [87]:
```python
data.dtypes
```

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Out[87]:
```
Rank               int32
Grade             object
Channel name      object
Video Uploads     object
Subscribers       object
Video views        int64
dtype: object
```

In [88]:
```
data['Video Uploads']=data['Video Uploads'].astype('int')
data['Subscribers']=data['Subscribers'].astype('int')
data.dtypes
```

Out[88]:
```
Rank               int32
Grade             object
Channel name      object
Video Uploads      int32
Subscribers        int32
Video views        int64
dtype: object
```

6. Clean the dataset (3)

Convert Grade column into numbers (int)

In [89]:
```
data.head()
```

Out[89]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views
0	1	A++	Zee TV	82757	18752951	20869786591
1	2	A++	T-Series	12661	61196302	47548839843
2	3	A++	Cocomelon - Nursery Rhymes	373	19238251	9793305082
3	4	A++	SET India	27323	31180559	22675948293
4	5	A++	WWE	36756	32852346	26273668433

In [90]:
```
data['Grade'].unique()
```

Out[90]:
```
array(['A++ ', 'A+ ', 'A ', 'A- ', 'B+ '], dtype=object)
```

In [91]:
```
data['Grade']=data['Grade'].map({'A++ ':5,'A+ ':4,'A ':3,'A- ':2,'B+ ':1}).a
data.dtypes
```

Out[91]:
```
Rank               int32
Grade              int32
Channel name      object
Video Uploads      int32
Subscribers        int32
Video views        int64
dtype: object
```

7. Add 'average views' column

In [92]:
```
data['Video views'].astype('int32')
```

Out[92]:
```
0       -605049889
1        304199587
2       1203370490
3       1201111813
4        503864657
           ...    
4995     441202795
4996     377331722
4997     311758426
4998      14563764
4999      73312511
Name: Video views, Length: 4610, dtype: int32
```

In [93]:
```
data['Average views']=data['Video views']//data['Video Uploads']
```

In [94]:
```
data.sort_values(by='Average views',ascending=False).head(5)
```

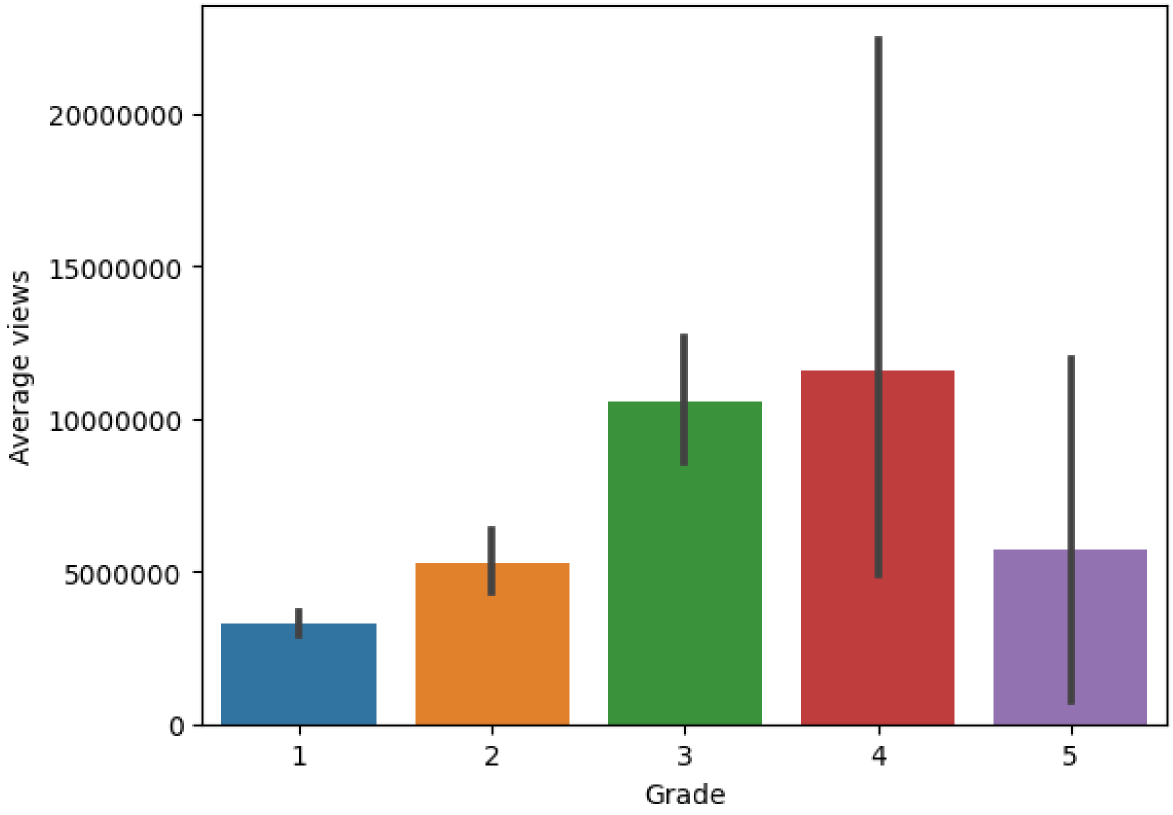
Out[94]:

	Rank	Grade	Channel name	Video Uploads	Subscribers	Video views	Average views
628	629	3	cocoz toon	1	2162992	333012122	333012122
314	315	3	icanrockyourworld	8	3891968	2420286079	302535759
613	614	3	AdeleVEVO	31	16270830	7414111263	239164879
389	390	3	Bad Bunny	11	12685253	2612504875	237500443
1120	1121	2	Danny Ocean	8	2861917	1690503137	211312892

In [95]:
```
top_5_avg_views=data.sort_values(by='Average views',ascending=False).head(5)
```

8.Which grade has the highest average views?

In [105…
```
sns.barplot(x='Grade',y='Average views',data=data)
plt.ticklabel_format(style='plain', axis='y')
```

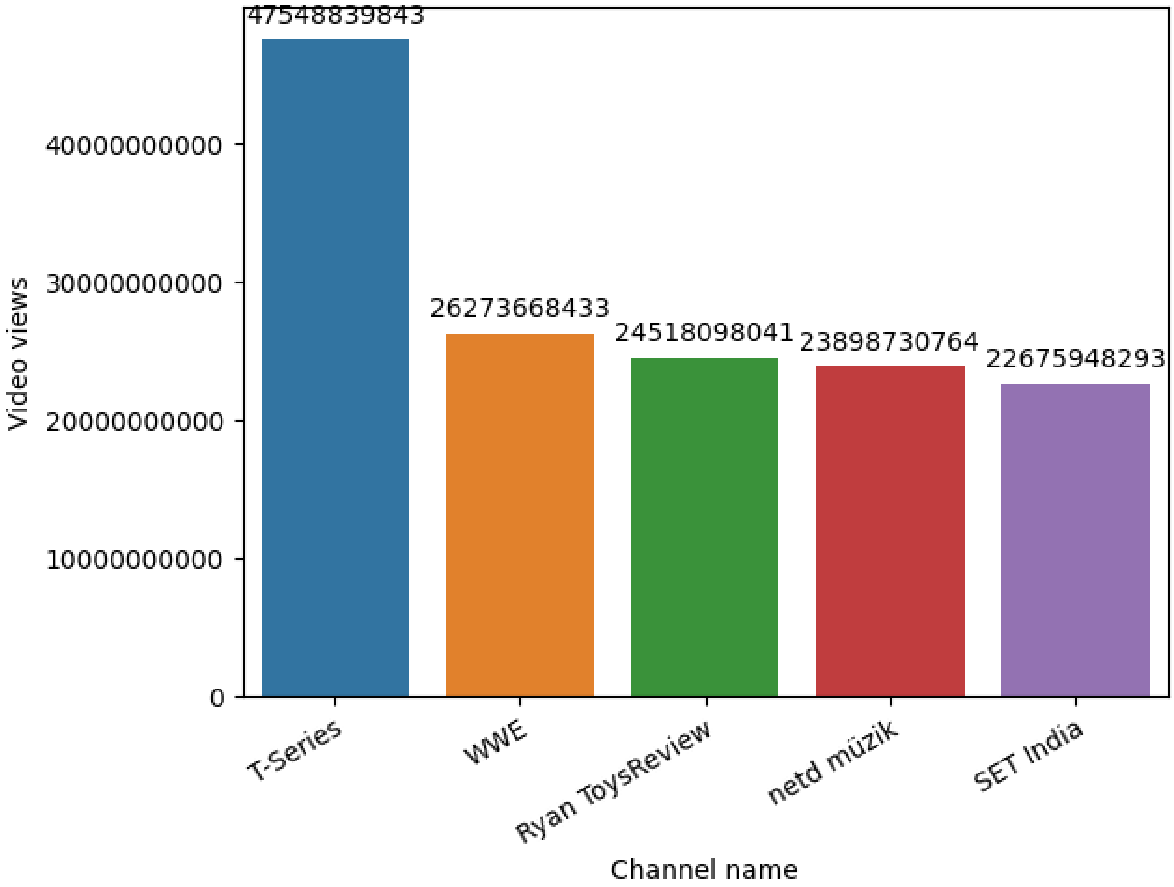


9. Show the top 5 Channel with highest Video views

```
In [97]: top_5_views=data.sort_values(by='Video views',ascending=False).head(5)
```

```
In [98]: import warnings
         warnings.filterwarnings('ignore')
```

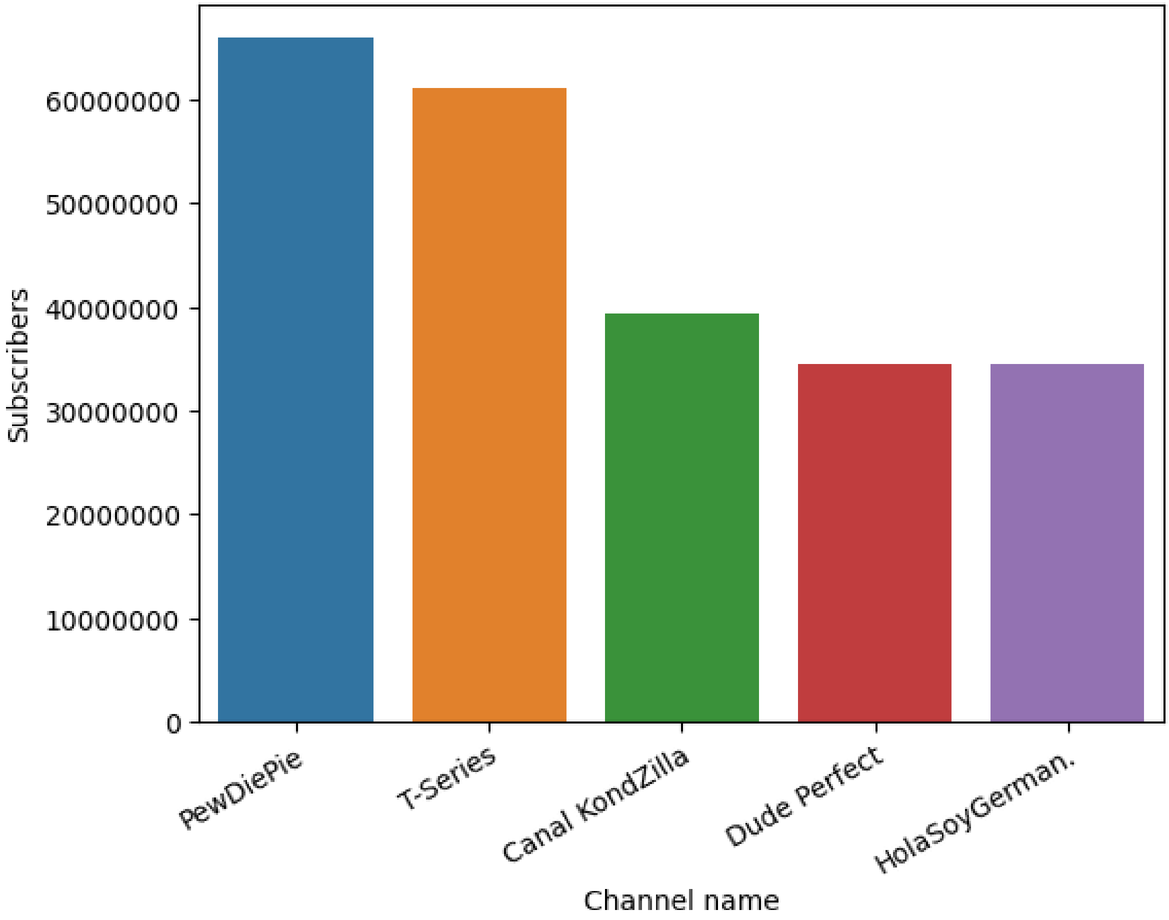
```
In [106… fig, ax = plt.subplots()
         x=data['Channel name']
         ax.set_xticklabels(x, rotation=30, ha="right", rotation_mode="anchor")
         sns.barplot(x='Channel name',y='Video views',data=top_5_views)
         plt.ticklabel_format(style='plain', axis='y')
         # Add the exact numbers above the bars
         for p in ax.patches:
             ax.annotate(format(p.get_height(), '.0f'), (p.get_x() + p.get_width() /
                         ha = 'center', va = 'center', xytext = (0, 9), textcoords =
```



10. Show the top 5 Channel with highest Subscribers

In [103…

```
top_5_subs=data.sort_values(by='Subscribers',ascending=False).head(5)
fig, ax = plt.subplots()
x=data['Channel name']
ax.set_xticklabels(x, rotation=30, ha="right", rotation_mode="anchor")
sns.barplot(x='Channel name',y='Subscribers',data=top_5_subs)
plt.ticklabel_format(style='plain', axis='y')
```



```
In [101… data.corr().style.background_gradient(cmap='coolwarm')
```

Out[101]:

	Rank	Grade	Video Uploads	Subscribers	Video views	Average views
Rank	1.000000	-0.865083	-0.073180	-0.383329	-0.402873	-0.153670
Grade	-0.865083	1.000000	0.088773	0.429213	0.477423	0.155231
Video Uploads	-0.073180	0.088773	1.000000	0.011362	0.087830	-0.064408
Subscribers	-0.383329	0.429213	0.011362	1.000000	0.791241	0.289386
Video views	-0.402873	0.477423	0.087830	0.791241	1.000000	0.294422
Average views	-0.153670	0.155231	-0.064408	0.289386	0.294422	1.000000

```
In [ ]:
```

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