

```
In [1]: #Data Analysis on Google Play Store  
#Get the DataFrame Data from Google Play Store data set  
import numpy as np  
import pandas as pd
```

```
In [2]: df=pd.read_csv("E:\\KVR-PANDAS-EXCLUSIVE\\GOOGLE PLAY STORE PROJECT\\googleplaystore.csv")
print(df)
```

	App	Category \
0	Photo Editor & Candy Camera & Grid & ScrapBook	ART_AND_DESIGN
1	Coloring book moana	ART_AND_DESIGN
2	U Launcher Lite - FREE Live Cool Themes, Hide ...	ART_AND_DESIGN
3	Sketch - Draw & Paint	ART_AND_DESIGN
4	Pixel Draw - Number Art Coloring Book	ART_AND_DESIGN
...
10836	Sya9a Maroc - FR	FAMILY
10837	Fr. Mike Schmitz Audio Teachings	FAMILY
10838	Parkinson Exercices FR	MEDICAL
10839	The SCP Foundation DB fr nn5n	BOOKS_AND_REFERENCE
10840	iHoroscope - 2018 Daily Horoscope & Astrology	LIFESTYLE

	Rating	Reviews	Size	Installs	Type	Price \
0	4.1	159	19M	10,000+	Free	0
1	3.9	967	14M	500,000+	Free	0
2	4.7	87510	8.7M	5,000,000+	Free	0
3	4.5	215644	25M	50,000,000+	Free	0
4	4.3	967	2.8M	100,000+	Free	0
...
10836	4.5	38	53M	5,000+	Free	0
10837	5.0	4	3.6M	100+	Free	0
10838	NaN	3	9.5M	1,000+	Free	0
10839	4.5	114	Varies with device	1,000+	Free	0
10840	4.5	398307	19M	10,000,000+	Free	0

	Content Rating	Genres	Last Updated \
0	Everyone	Art & Design	January 7, 2018
1	Everyone	Art & Design;Pretend Play	January 15, 2018
2	Everyone	Art & Design	August 1, 2018
3	Teen	Art & Design	June 8, 2018
4	Everyone	Art & Design;Creativity	June 20, 2018
...
10836	Everyone	Education	July 25, 2017
10837	Everyone	Education	July 6, 2018
10838	Everyone	Medical	January 20, 2017
10839	Mature 17+	Books & Reference	January 19, 2015
10840	Everyone	Lifestyle	July 25, 2018

	Current Ver	Android Ver
0	1.0.0	4.0.3 and up
1	2.0.0	4.0.3 and up
2	1.2.4	4.0.3 and up
3	Varies with device	4.2 and up
4	1.1	4.4 and up
...
10836	1.48	4.1 and up
10837	1.0	4.1 and up
10838	1.0	2.2 and up
10839	Varies with device	Varies with device
10840	Varies with device	Varies with device

[10841 rows x 13 columns]

```
In [3]: pd.set_option("display.max_columns",None)
df=pd.read_csv("E:\\KVR-PANDAS-EXCLUSIVE\\GOOGLE PLAY STORE PROJECT\\googleplaystore.csv")
print(df)
```

	App	Category \
0	Photo Editor & Candy Camera & Grid & ScrapBook	ART_AND_DESIGN
1	Coloring book moana	ART_AND_DESIGN
2	U Launcher Lite - FREE Live Cool Themes, Hide ...	ART_AND_DESIGN
3	Sketch - Draw & Paint	ART_AND_DESIGN
4	Pixel Draw - Number Art Coloring Book	ART_AND_DESIGN
...
10836	Sya9a Maroc - FR	FAMILY
10837	Fr. Mike Schmitz Audio Teachings	FAMILY
10838	Parkinson Exercices FR	MEDICAL
10839	The SCP Foundation DB fr nn5n	BOOKS_AND_REFERENCE
10840	iHoroscope - 2018 Daily Horoscope & Astrology	LIFESTYLE

	Rating	Reviews	Size	Installs	Type	Price \
0	4.1	159	19M	10,000+	Free	0
1	3.9	967	14M	500,000+	Free	0
2	4.7	87510	8.7M	5,000,000+	Free	0
3	4.5	215644	25M	50,000,000+	Free	0
4	4.3	967	2.8M	100,000+	Free	0
...
10836	4.5	38	53M	5,000+	Free	0
10837	5.0	4	3.6M	100+	Free	0
10838	NaN	3	9.5M	1,000+	Free	0
10839	4.5	114	Varies with device	1,000+	Free	0
10840	4.5	398307	19M	10,000,000+	Free	0

	Content Rating	Genres	Last Updated \
0	Everyone	Art & Design	January 7, 2018
1	Everyone	Art & Design;Pretend Play	January 15, 2018
2	Everyone	Art & Design	August 1, 2018
3	Teen	Art & Design	June 8, 2018
4	Everyone	Art & Design;Creativity	June 20, 2018
...
10836	Everyone	Education	July 25, 2017
10837	Everyone	Education	July 6, 2018
10838	Everyone	Medical	January 20, 2017
10839	Mature 17+	Books & Reference	January 19, 2015
10840	Everyone	Lifestyle	July 25, 2018

	Current Ver	Android Ver
0	1.0.0	4.0.3 and up
1	2.0.0	4.0.3 and up
2	1.2.4	4.0.3 and up
3	Varies with device	4.2 and up
4	1.1	4.4 and up
...
10836	1.48	4.1 and up
10837	1.0	4.1 and up
10838	1.0	2.2 and up
10839	Varies with device	Varies with device
10840	Varies with device	Varies with device

[10841 rows x 13 columns]

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

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10841 entries, 0 to 10840
Data columns (total 13 columns):
#   Column                Non-Null Count  Dtype
---  -
0   App                    10841 non-null  object
1   Category               10841 non-null  object
2   Rating                 9367 non-null   float64
3   Reviews                10841 non-null  object
4   Size                   10841 non-null  object
5   Installs               10841 non-null  object
6   Type                   10840 non-null  object
7   Price                  10841 non-null  object
8   Content Rating         10840 non-null  object
9   Genres                 10841 non-null  object
10  Last Updated           10841 non-null  object
11  Current Ver            10833 non-null  object
12  Android Ver            10838 non-null  object
dtypes: float64(1), object(12)
memory usage: 1.1+ MB
```

In [5]: `# 1. Display Top 5 Rows of The Dataset`
`df.head()`

Out[5]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genre
0	Photo Editor & Candy Camera & Grid & ScrapBook	ART_AND_DESIGN	4.1	159	19M	10,000+	Free	0	Everyone	Art & Design
1	Coloring book moana	ART_AND_DESIGN	3.9	967	14M	500,000+	Free	0	Everyone	Art Design;Prete PI
2	U Launcher Lite – FREE Live Cool Themes, Hide ...	ART_AND_DESIGN	4.7	87510	8.7M	5,000,000+	Free	0	Everyone	Art & Design
3	Sketch - Draw & Paint	ART_AND_DESIGN	4.5	215644	25M	50,000,000+	Free	0	Teen	Art & Design
4	Pixel Draw - Number Art Coloring Book	ART_AND_DESIGN	4.3	967	2.8M	100,000+	Free	0	Everyone	Art Design;Creativ

In [6]: *# 1. Display Top 3 Rows of The Dataset*
`df.head(3)`

Out[6]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genres
0	Photo Editor & Candy Camera & Grid & ScrapBook	ART_AND_DESIGN	4.1	159	19M	10,000+	Free	0	Everyone	Art & Design
1	Coloring book moana	ART_AND_DESIGN	3.9	967	14M	500,000+	Free	0	Everyone	Art & Design;Pretend Play
2	U Launcher Lite – FREE Live Cool Themes, Hide ...	ART_AND_DESIGN	4.7	87510	8.7M	5,000,000+	Free	0	Everyone	Art & Design

In [7]: *# 2. Check the Last 3 Rows of The Dataset*
`df.tail(3)`

Out[7]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating
10838	Parkinson Exercices FR	MEDICAL	NaN	3	9.5M	1,000+	Free	0	Everyone
10839	The SCP Foundation DB fr nn5n	BOOKS_AND_REFERENCE	4.5	114	Varies with device	1,000+	Free	0	Mature 17+
10840	iHoroscope - 2018 Daily Horoscope & Astrology	LIFESTYLE	4.5	398307	19M	10,000,000+	Free	0	Everyone

In [8]: *# 2. Check the Last 5 Rows of The Dataset*
df.tail()

Out[8]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating
10836	Sya9a Maroc - FR	FAMILY	4.5	38	53M	5,000+	Free	0	Everyone
10837	Fr. Mike Schmitz Audio Teachings	FAMILY	5.0	4	3.6M	100+	Free	0	Everyone
10838	Parkinson Exercices FR	MEDICAL	NaN	3	9.5M	1,000+	Free	0	Everyone
10839	The SCP Foundation DB fr nn5n	BOOKS_AND_REFERENCE	4.5	114	Varies with device	1,000+	Free	0	Mature 17+
10840	iHoroscope - 2018 Daily Horoscope & Astrology	LIFESTYLE	4.5	398307	19M	10,000,000+	Free	0	Everyone

In [9]: *#3. Find Shape of Our Dataset (Number of Rows & Number of Columns)*
df.shape

Out[9]: (10841, 13)

In [11]: *#3. Find Shape of Our Dataset (Number of Rows & Number of Columns)*
df.shape
print("Number of Apps=",df.shape[0])
print("Number of Columns in Each app=",df.shape[1])

Number of Apps= 10841
Number of Columns in Each app= 13

In [12]: *#Display the col names the all the apps*
df.columns

Out[12]: Index(['App', 'Category', 'Rating', 'Reviews', 'Size', 'Installs', 'Type', 'Price', 'Content Rating', 'Genres', 'Last Updated', 'Current Ver', 'Android Ver'], dtype='object')

```
In [13]: for i in df.columns:
          print(i)
```

```
App
Category
Rating
Reviews
Size
Installs
Type
Price
Content Rating
Genres
Last Updated
Current Ver
Android Ver
```

```
In [14]: #4. Get Information About Our Dataset Like Total Number Rows, \
          # Total Number of Columns, Datatypes of Each Column And Memory Requirement
          df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10841 entries, 0 to 10840
Data columns (total 13 columns):
 #   Column                Non-Null Count  Dtype
---  -
 0   App                   10841 non-null  object
 1   Category              10841 non-null  object
 2   Rating                9367 non-null   float64
 3   Reviews               10841 non-null  object
 4   Size                  10841 non-null  object
 5   Installs              10841 non-null  object
 6   Type                  10840 non-null  object
 7   Price                 10841 non-null  object
 8   Content Rating        10840 non-null  object
 9   Genres                10841 non-null  object
10   Last Updated          10841 non-null  object
11   Current Ver           10833 non-null  object
12   Android Ver           10838 non-null  object
dtypes: float64(1), object(12)
memory usage: 1.1+ MB
```

```
In [15]: # 5. Get Overall Statistics About The Dataframe
df.describe() # Applicable only on Numerical Columns Only But not on Non-Numerical Columns
```

Out[15]:

	Rating
count	9367.000000
mean	4.193338
std	0.537431
min	1.000000
25%	4.000000
50%	4.300000
75%	4.500000
max	19.000000

```
In [17]: # 5. Get Overall Statistics About The Dataframe
df.describe(include='all') # Gives Descriptive statistical Information of all Columns
```

Out[17]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genres	Last Update
count	10841	10841	9367.000000	10841	10841	10841	10840	10841	10840	10841	10841
unique	9660	34	NaN	6002	462	22	3	93	6	120	137
top	ROBLOX	FAMILY	NaN	0	Varies with device	1,000,000+	Free	0	Everyone	Tools	August 3, 2017
freq	9	1972	NaN	596	1695	1579	10039	10040	8714	842	32
mean	NaN	NaN	4.193338	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
std	NaN	NaN	0.537431	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
min	NaN	NaN	1.000000	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
25%	NaN	NaN	4.000000	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
50%	NaN	NaN	4.300000	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
75%	NaN	NaN	4.500000	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
max	NaN	NaN	19.000000	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN


```
In [26]: df[df["App"].str.contains("Astrology")]
```

```
Out[26]:
```

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genres	Last Update
1570	Horoscopes – Daily Zodiac Horoscope and Astrology	LIFESTYLE	4.6	161143	11M	10,000,000+	Free	0	Everyone 10+	Lifestyle	June 2 201
1592	Astrology - Min Thein Kha BayDin	LIFESTYLE	4.7	2225	15M	100,000+	Free	0	Everyone	Lifestyle	July 2 201
10840	iHoroscope - 2018 Daily Horoscope & Astrology	LIFESTYLE	4.5	398307	19M	10,000,000+	Free	0	Everyone	Lifestyle	July 2 201

```
In [28]: df[df["App"].str.contains("Astrology",case=False)]
```

```
Out[28]:
```

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genres	Last Update
1570	Horoscopes – Daily Zodiac Horoscope and Astrology	LIFESTYLE	4.6	161143	11M	10,000,000+	Free	0	Everyone 10+	Lifestyle	June 2 201
1592	Astrology - Min Thein Kha BayDin	LIFESTYLE	4.7	2225	15M	100,000+	Free	0	Everyone	Lifestyle	July 2 201
10840	iHoroscope - 2018 Daily Horoscope & Astrology	LIFESTYLE	4.5	398307	19M	10,000,000+	Free	0	Everyone	Lifestyle	July 2 201

```
In [29]: x=len(df[df["App"].str.contains("Astrology",case=False)])
print("Number of apps contains a word Astrology=",x)
```

Number of apps contains a word Astrology= 3

```
In [33]: #7.Find the Average App Rating of Google Play Store
avr=df["Rating"].mean()
print("Average app rating Google Play Store= ",avr)
```

Average app rating Google Play Store= 4.193338315362443

```
In [36]: #8.Find the total number of Unique Category
df['Category']
```

```
Out[36]: 0          ART_AND_DESIGN
1          ART_AND_DESIGN
2          ART_AND_DESIGN
3          ART_AND_DESIGN
4          ART_AND_DESIGN
...
10836         FAMILY
10837         FAMILY
10838         MEDICAL
10839  BOOKS_AND_REFERENCE
10840         LIFESTYLE
Name: Category, Length: 10841, dtype: object
```

```
In [37]: #8.Find the total number of Unique Category
uv=df['Category'].nunique()
print("total number of Unique Category= ",uv)
```

```
total number of Unique Category= 34
```

```
In [43]: #9. Find which Category getting Highest Average Rating
for gn,ginfo in df.groupby("Category"):
    print("Group Name:",gn)
    print("Group Information")
    print(ginfo)
```

```
10612      0      3.9M      10+ Free      0      Everyone
10625      0      3.9M      10+ Free      0      Everyone
10627      7      28M      1,000+ Free      0      Everyone
10713    3471  Varies with device    100,000+ Free      0      Everyone
10832    1195      582k    100,000+ Free      0      Everyone
```

```
      Genres      Last Updated      Current Ver      Android Ver
3626  Weather  August 1, 2018  Varies with device  Varies with device
3627  Weather   May 8, 2018      1.11.93      4.4 and up
3628  Weather  August 6, 2018  Varies with device  Varies with device
3629  Weather   July 17, 2018      1.1      4.4 and up
3630  Weather   June 7, 2018  Varies with device  Varies with device
...      ...      ...      ...      ...
10612  Weather  April 12, 2018      1.0      5.0 and up
10625  Weather  April 13, 2018      1.0      5.0 and up
10627  Weather   June 21, 2018    4.6.1404      4.4 and up
10713  Weather   July 24, 2018  Varies with device  Varies with device
10832  Weather  February 16, 2014      6.0      2.1 and up
```

```
[82 rows x 13 columns]
```

```
In [45]: #9. Find which Category getting Highest Average Rating
for x in df.groupby("Category")["Rating"]:
    print(x)
```

```
9834      NaN
10347      NaN
Name: Rating, Length: 127, dtype: float64
('GAME', 1653      4.5
1654      4.5
1655      4.4
1656      4.7
1657      4.5
...
10791      4.0
10792      4.2
10793      4.4
10803      4.3
10804      4.2
Name: Rating, Length: 1144, dtype: float64)
('HEALTH_AND_FITNESS', 1256      4.8
1257      4.0
1258      4.9
1259      4.8
1260      4.9
```

```
In [46]: df.groupby("Category")["Rating"].mean()
```

```
Out[46]: Category
1.9          19.000000
ART_AND_DESIGN      4.358065
AUTO_AND_VEHICLES   4.190411
BEAUTY              4.278571
BOOKS_AND_REFERENCE 4.346067
BUSINESS            4.121452
COMICS              4.155172
COMMUNICATION        4.158537
DATING              3.970769
EDUCATION            4.389032
ENTERTAINMENT        4.126174
EVENTS              4.435556
FAMILY              4.192272
FINANCE              4.131889
FOOD_AND_DRINK       4.166972
GAME                 4.286326
HEALTH_AND_FITNESS   4.277104
HOUSE_AND_HOME        4.197368
LIBRARIES_AND_DEMO    4.178462
LIFESTYLE            4.094904
MAPS_AND_NAVIGATION   4.051613
MEDICAL              4.189143
NEWS_AND_MAGAZINES    4.132189
PARENTING             4.300000
PERSONALIZATION       4.335987
PHOTOGRAPHY          4.192114
PRODUCTIVITY          4.211396
SHOPPING             4.259664
SOCIAL               4.255598
SPORTS               4.223511
TOOLS                 4.047411
TRAVEL_AND_LOCAL      4.109292
VIDEO_PLAYERS         4.063750
WEATHER              4.244000
Name: Rating, dtype: float64
```

```
In [47]: df.groupby("Category")["Rating"].mean().sort_values(ascending=False)
```

```
Out[47]: Category
1.9          19.000000
EVENTS       4.435556
EDUCATION    4.389032
ART_AND_DESIGN 4.358065
BOOKS_AND_REFERENCE 4.346067
PERSONALIZATION 4.335987
PARENTING    4.300000
GAME         4.286326
BEAUTY       4.278571
HEALTH_AND_FITNESS 4.277104
SHOPPING     4.259664
SOCIAL       4.255598
WEATHER      4.244000
SPORTS       4.223511
PRODUCTIVITY 4.211396
HOUSE_AND_HOME 4.197368
FAMILY       4.192272
PHOTOGRAPHY  4.192114
AUTO_AND_VEHICLES 4.190411
MEDICAL      4.189143
LIBRARIES_AND_DEMO 4.178462
FOOD_AND_DRINK 4.166972
COMMUNICATION 4.158537
COMICS       4.155172
NEWS_AND_MAGAZINES 4.132189
FINANCE      4.131889
ENTERTAINMENT 4.126174
BUSINESS     4.121452
TRAVEL_AND_LOCAL 4.109292
LIFESTYLE    4.094904
VIDEO_PLAYERS 4.063750
MAPS_AND_NAVIGATION 4.051613
TOOLS        4.047411
DATING       3.970769
Name: Rating, dtype: float64
```

```
In [50]: #9. Find which Category getting Highest Average Rating
df.groupby("Category")["Rating"].mean().sort_values(ascending=False).head(1)
```

```
Out[50]: Category
1.9      19.0
Name: Rating, dtype: float64
```

```
In [51]: #9. Find which Category getting Highest Average Rating
df.groupby("Category")["Rating"].mean().sort_values().tail(1)
```

```
Out[51]: Category
1.9      19.0
Name: Rating, dtype: float64
```

```
In [58]: #10.Find the total number App having 5 star Rating Apps
star5=len(df[df["Rating"]==5])
print("total number App having 5 star Rating Apps=",star5)
```

total number App having 5 star Rating Apps= 274

```
In [63]: #11.Find the Average Values of Reviews
df['Reviews'].dtype
```

Out[63]: dtype('O')

```
In [66]: df[df["Reviews"]=="3.0M"]
```

Out[66]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genres	Last Update	
10472	Life Made WI-Fi Touchscreen Photo Frame		1.9	19.0	3.0M	1,000+	Free	0	Everyone	NaN	February 11, 2018	1.0.1

```
In [68]: df["Reviews"]=df["Reviews"].replace("3.0M",3.0)
```

```
In [70]: df[df["Reviews"]==3.0]
```

Out[70]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genres	Last Update	
10472	Life Made WI-Fi Touchscreen Photo Frame		1.9	19.0	3.0	1,000+	Free	0	Everyone	NaN	February 11, 2018	1.0.1

```
In [71]: #11.Find the Average Values of Reviews
df['Reviews'].dtype
```

Out[71]: dtype('O')

```
In [73]: df["Reviews"]=df["Reviews"].astype("float")
```

```
In [74]: #11.Find the Average Values of Reviews
df['Reviews'].dtype
```

Out[74]: dtype('float64')

```
In [76]: #11.Find the Average Values of Reviews
av=df['Reviews'].mean()
print("The Average Values of Reviews=",av)
```

The Average Values of Reviews= 444111.9265750392

```
In [84]: pd.set_option("display.max_columns",None)
df=pd.read_csv("E:\\KVR-PANDAS-EXCLUSIVE\\GOOGLE PLAY STORE PROJECT\\googleplaystore.csv")
print(df)
```

	App	Category \
0	Photo Editor & Candy Camera & Grid & ScrapBook	ART_AND_DESIGN
1	Coloring book moana	ART_AND_DESIGN
2	U Launcher Lite - FREE Live Cool Themes, Hide ...	ART_AND_DESIGN
3	Sketch - Draw & Paint	ART_AND_DESIGN
4	Pixel Draw - Number Art Coloring Book	ART_AND_DESIGN
...
10836	Sya9a Maroc - FR	FAMILY
10837	Fr. Mike Schmitz Audio Teachings	FAMILY
10838	Parkinson Exercices FR	MEDICAL
10839	The SCP Foundation DB fr nn5n	BOOKS_AND_REFERENCE
10840	iHoroscope - 2018 Daily Horoscope & Astrology	LIFESTYLE

	Rating	Reviews	Size	Installs	Type	Price \
0	4.1	159	19M	10,000+	Free	0
1	3.9	967	14M	500,000+	Free	0
2	4.7	87510	8.7M	5,000,000+	Free	0
3	4.5	215644	25M	50,000,000+	Free	0
4	4.3	967	2.8M	100,000+	Free	0
...
10836	4.5	38	53M	5,000+	Free	0
10837	5.0	4	3.6M	100+	Free	0
10838	NaN	3	9.5M	1,000+	Free	0
10839	4.5	114	Varies with device	1,000+	Free	0
10840	4.5	398307	19M	10,000,000+	Free	0

	Content Rating	Genres	Last Updated \
0	Everyone	Art & Design	January 7, 2018
1	Everyone	Art & Design;Pretend Play	January 15, 2018
2	Everyone	Art & Design	August 1, 2018
3	Teen	Art & Design	June 8, 2018
4	Everyone	Art & Design;Creativity	June 20, 2018
...
10836	Everyone	Education	July 25, 2017
10837	Everyone	Education	July 6, 2018
10838	Everyone	Medical	January 20, 2017
10839	Mature 17+	Books & Reference	January 19, 2015
10840	Everyone	Lifestyle	July 25, 2018

	Current Ver	Android Ver
0	1.0.0	4.0.3 and up
1	2.0.0	4.0.3 and up
2	1.2.4	4.0.3 and up
3	Varies with device	4.2 and up
4	1.1	4.4 and up
...
10836	1.48	4.1 and up
10837	1.0	4.1 and up
10838	1.0	2.2 and up
10839	Varies with device	Varies with device
10840	Varies with device	Varies with device

[10841 rows x 13 columns]

In [86]: *#12. Find Total Number of Free and Paid Apps*
`df[df["Type"]=="Paid"]`

Out[86]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	
234	TurboScan: scan documents and receipts in PDF	BUSINESS	4.7	11442	6.8M	100,000+	Paid	\$4.99	Everyone	
235	Tiny Scanner Pro: PDF Doc Scan	BUSINESS	4.8	10295	39M	100,000+	Paid	\$4.99	Everyone	
290	TurboScan: scan documents and receipts in PDF	BUSINESS	4.7	11442	6.8M	100,000+	Paid	\$4.99	Everyone	
291	Tiny Scanner Pro: PDF Doc Scan	BUSINESS	4.8	10295	39M	100,000+	Paid	\$4.99	Everyone	
427	Puffin Browser Pro	COMMUNICATION	4.0	18247	Varies with device	100,000+	Paid	\$3.99	Everyone	Corr
...
10735	FP VoiceBot	FAMILY	NaN	17	157k	100+	Paid	\$0.99	Mature 17+	En
10760	Fast Tract Diet	HEALTH_AND_FITNESS	4.4	35	2.4M	1,000+	Paid	\$7.99	Everyone	
10782	Trine 2: Complete Story	GAME	3.8	252	11M	10,000+	Paid	\$16.99	Teen	
10785	sugar, sugar	FAMILY	4.2	1405	9.5M	10,000+	Paid	\$1.20	Everyone	
10798	Word Search Tab 1 FR	FAMILY	NaN	0	1020k	50+	Paid	\$1.04	Everyone	

800 rows × 13 columns



In [87]: *##12. Find Total Number of Free and Paid Apps*
`df["Type"].value_counts()`

Out[87]:

```
Type
Free    10039
Paid      800
0         1
Name: count, dtype: int64
```


In [88]: *#13. Find which app has Maximum Review*
`df["Reviews"]`

Out[88]:

0	159
1	967
2	87510
3	215644
4	967
	...
10836	38
10837	4
10838	3
10839	114
10840	398307

Name: Reviews, Length: 10841, dtype: object

In [89]: `df["Reviews"].max()`

Out[89]: '9992'

In [92]: `df[df["Reviews"].max()==df["Reviews"]]`

Out[92]:

	App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genres	Last Updated
2989	GollerCepte Live Score	SPORTS	4.2	9992	31M	1,000,000+	Free	0	Everyone	Sports	May 23, 2018

In [94]: `df[df["Reviews"].max()==df["Reviews"]]["App"]`

Out[94]: 2989 GollerCepte Live Score
 Name: App, dtype: object

In [98]: `df["Reviews"]=df["Reviews"].replace("3.0M",3.0)`

In [100]: `df["Reviews"]=df["Reviews"].astype(float)`

In [101]: `df["Reviews"].max()`

Out[101]: 78158306.0

In [104]: `df[df["Reviews"].max()==df["Reviews"]]["App"]`

Out[104]: 2544 Facebook
 Name: App, dtype: object

In []: