Social Media Sentiment Analysis: Data Processing and Visualization.

Importing Libraries

In [2]:
```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from wordcloud import WordCloud
```

Importing Dataset

In [23]:
```
df = pd.read_csv(r'sentimentdataset.csv')
df
```

Out[23]:

	Unnamed: 0	Unnamed: 0.1	Text	Sentiment	Timestamp	
0	0	0	Enjoying a beautiful day at the park! ...	Positive	2023-01-15 12:30:00	
1	1	1	Traffic was terrible this morning. ...	Negative	2023-01-15 08:45:00	
2	2	2	Just finished an amazing workout! 💪 ...	Positive	2023-01-15 15:45:00	
3	3	3	Excited about the upcoming weekend getaway! ...	Positive	2023-01-15 18:20:00	
4	4	4	Trying out a new recipe for dinner tonight. ...	Neutral	2023-01-15 19:55:00	
...	...	...	...	...	...	
727	728	732	Collaborating on a science project that receiv...	Happy	2017-08-18 18:20:00	ScienceProjectSucc
728	729	733	Attending a surprise birthday party organized ...	Happy	2018-06-22 14:15:00	BirthdayParty
729	730	734	Successfully fundraising for a school charity ...	Happy	2019-04-05 17:30:00	CharityFundraisingTrium
730	731	735	Participating in a multicultural festival, cel...	Happy	2020-02-29 20:45:00	MulticulturalFestival
731	732	736	Organizing a virtual talent show during challe...	Happy	2020-11-15 15:15:00	VirtualTalentShowSucc

732 rows × 15 columns

Data Analysis

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

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 732 entries, 0 to 731
Data columns (total 15 columns):
Unnamed: 0      732 non-null int64
Unnamed: 0.1    732 non-null int64
Text            732 non-null object
Sentiment       732 non-null object
Timestamp       732 non-null object
User            732 non-null object
Platform        732 non-null object
Hashtags        732 non-null object
Retweets        732 non-null float64
Likes           732 non-null float64
Country         732 non-null object
Year            732 non-null int64
Month           732 non-null int64
Day             732 non-null int64
Hour            732 non-null int64
dtypes: float64(2), int64(6), object(7)
memory usage: 85.9+ KB
```

In [5]:
```
df.nunique()
```

Out[5]:
```
Unnamed: 0      732
Unnamed: 0.1    732
Text            707
Sentiment       279
Timestamp       683
User            685
Platform          4
Hashtags        697
Retweets         26
Likes            38
Country         115
Year             14
Month            12
Day              31
Hour             22
dtype: int64
```

In [6]:
```
df.describe()
```

Out[6]:

	Unnamed: 0	Unnamed: 0.1	Retweets	Likes	Year	Month	
count	732.000000	732.000000	732.000000	732.000000	732.000000	732.000000	732.000
mean	366.464481	369.740437	21.508197	42.901639	2020.471311	6.122951	15.497
std	211.513936	212.428936	7.061286	14.089848	2.802285	3.411763	8.474
min	0.000000	0.000000	5.000000	10.000000	2010.000000	1.000000	1.000
25%	183.750000	185.750000	17.750000	34.750000	2019.000000	3.000000	9.000
50%	366.500000	370.500000	22.000000	43.000000	2021.000000	6.000000	15.000
75%	549.250000	553.250000	25.000000	50.000000	2023.000000	9.000000	22.000
max	732.000000	736.000000	40.000000	80.000000	2023.000000	12.000000	31.000

In [7]:
```
df.shape
```

Out[7]:
```
(732, 15)
```

In [8]:
```
df.isnull().sum()
```

Out[8]:
```
Unnamed: 0      0
Unnamed: 0.1    0
Text            0
Sentiment       0
Timestamp       0
User            0
Platform        0
Hashtags        0
Retweets        0
Likes           0
Country         0
Year            0
Month           0
Day             0
Hour            0
dtype: int64
```

In [9]:
```
# Sentiment Distribution
print(df['Sentiment'].value_counts())
```

```
Positive          44
Joy               42
Excitement        32
Contentment       14
Happy             14
                  ..
Jealousy           1
Thrill             1
Excitement         1
LostLove           1
PlayfulJoy         1
Name: Sentiment, Length: 279, dtype: int64
```

Data Cleaning

In [10]:
```
df = df.drop(['Unnamed: 0','Unnamed: 0.1','Timestamp'], axis = 1)
df.head()
```

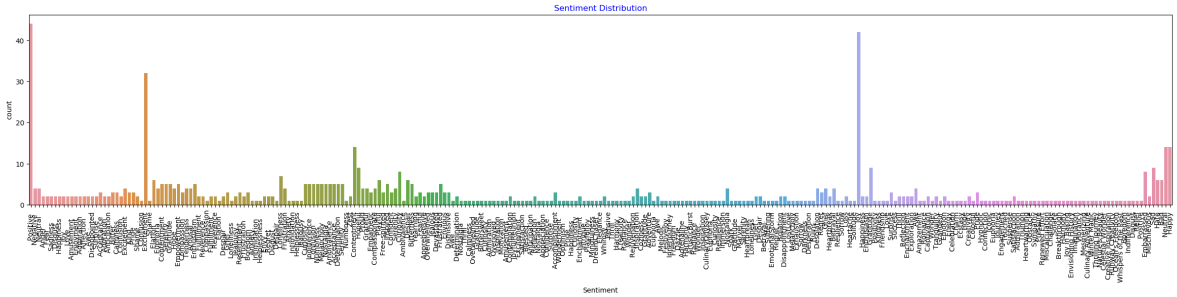
Out[10]:

	Text	Sentiment	User	Platform	Hashtags	Retweets	Likes	Country
0	Enjoying a beautiful day at the park! ...	Positive	User123	Twitter	#Nature #Park	15.0	30.0	USA
1	Traffic was terrible this morning. ...	Negative	CommuterX	Twitter	#Traffic #Morning	5.0	10.0	Canada
2	Just finished an amazing workout! 💪 ...	Positive	FitnessFan	Instagram	#Fitness #Workout	20.0	40.0	USA
3	Excited about the upcoming weekend getaway! ...	Positive	AdventureX	Facebook	#Travel #Adventure	8.0	15.0	UK
4	Trying out a new recipe for dinner tonight. ...	Neutral	ChefCook	Instagram	#Cooking #Food	12.0	25.0	Australia

In [11]:
```
df['Country'] = df['Country'].str.strip()
df['Platform'] = df['Platform'].str.strip()
```

EDA (Exploratory Data Analysis)

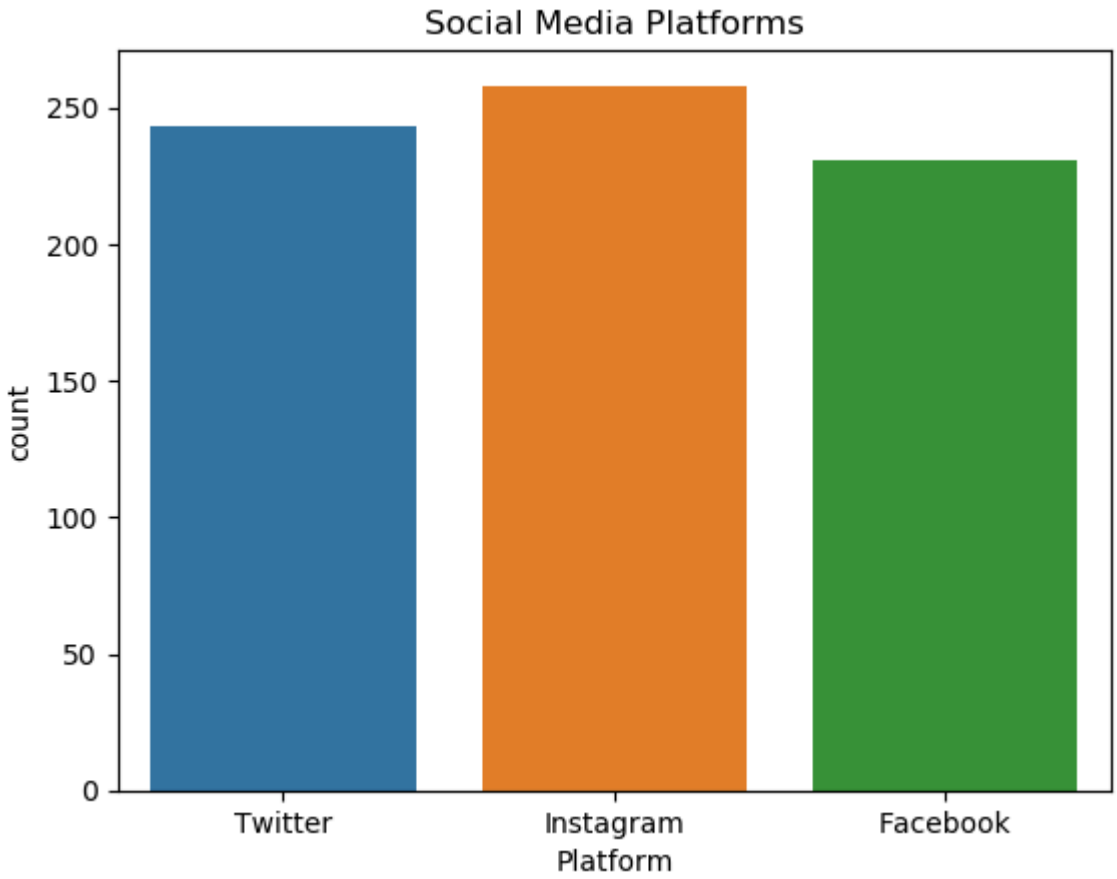
In [12]:
```
plt.figure(figsize = (30,5))
sns.countplot(data=df, x='Sentiment')
plt.title('Sentiment Distribution',color = 'blue')
plt.xticks(rotation = 90)
plt.show()
```



Result:

from the above plot,we can observe that how many times each type of sentiment is repeated.

In [13]:
```
sns.countplot(data = df, x='Platform',color=None)
plt.title('Social Media Platforms')
plt.show()
```



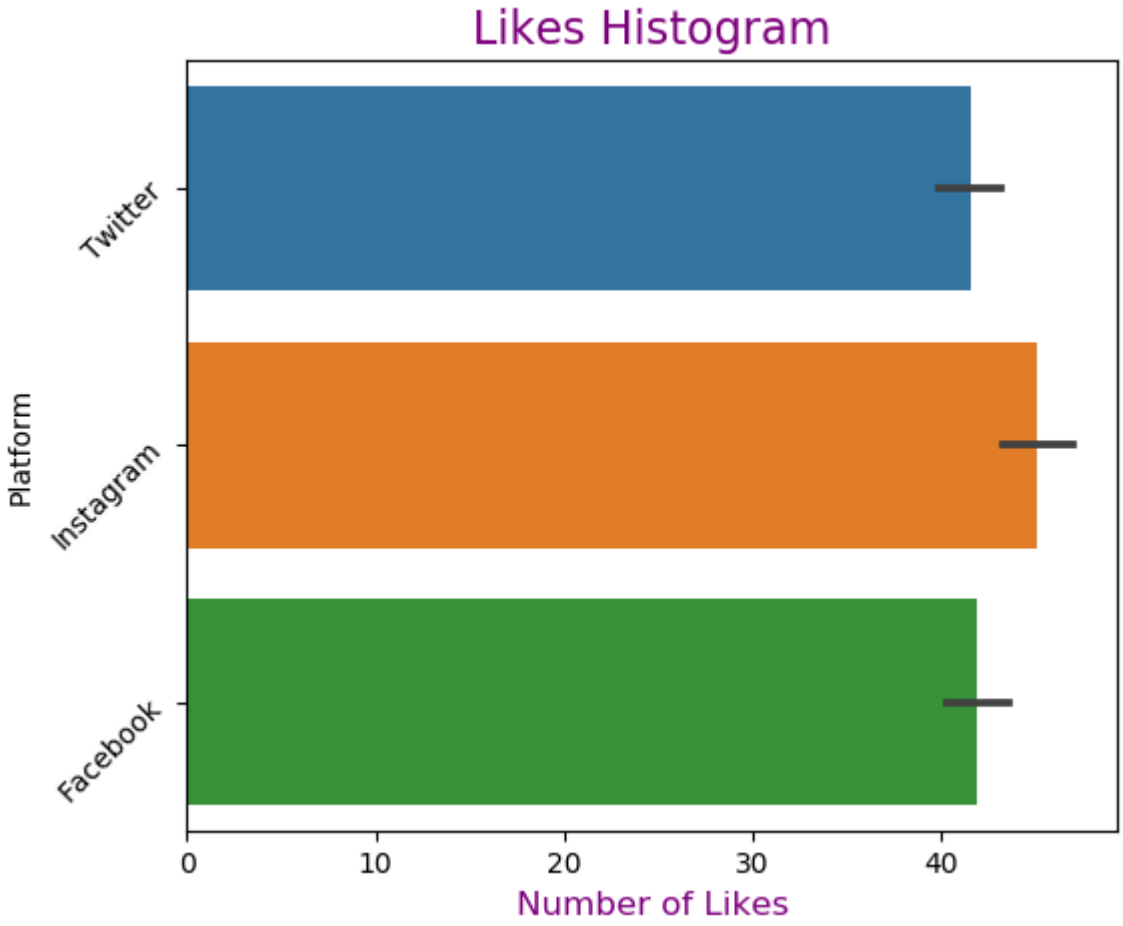
RESULT:-

The Most used social media platform is Instagram The Least used social media platform is Blue Twitter

In [14]:
```
df['Month'].unique()
```

Out[14]:
```
array([ 1,  2,  3,  5,  8,  6, 11,  4,  9,  7, 10, 12], dtype=int64)
```

In [15]:
```
import seaborn as sns
fig = plt.figure(figsize = (6,5))
sns.barplot(data = df, x = 'Likes', y = 'Platform')
plt.title('Likes Histogram', fontsize = 16, color  = 'purple')
plt.xlabel('Number of Likes', fontsize = 12, color  = 'purple')
plt.yticks(rotation=45, )
plt.show()
```



RESULT:-

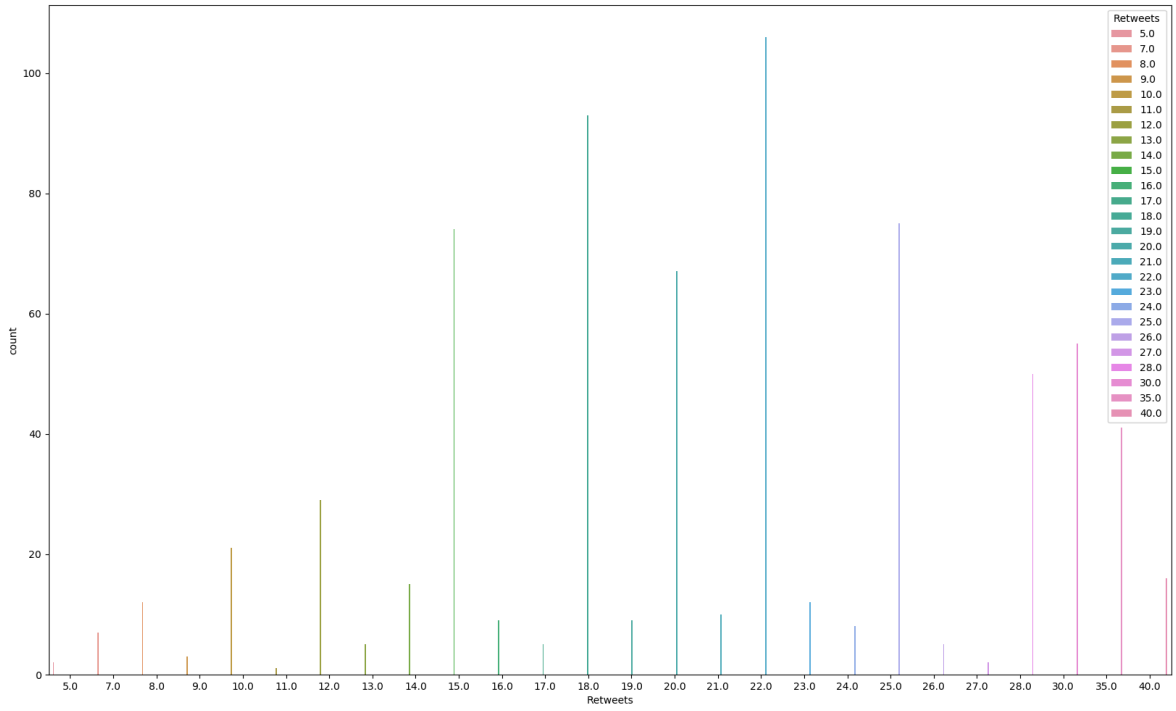
The Social media platform with most number of likes is Instagram The Social media platform with least number of likes is Blue Twitter

In [20]:
```
df['Retweets'].unique()
```

Out[20]:
```
array([15.,  5., 20.,  8., 12., 25., 10., 30., 18., 22.,  7., 28.,  9.,
       14., 13., 11., 17., 19., 16., 21., 23., 24., 40., 35., 26., 27.])
```

In [22]:
```
plt.figure(figsize=(20,12))
sns.countplot(x='Retweets',data=df,hue='Retweets')
```

Out[22]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a730521a08>
```



RESULT:-

In [ ]:
```
from the graph we can conclude that,at the point of Retweets=22.2 it repeated mo
```

In [ ]:
```
text = " ".join(review for review in df.Text)
wordcloud = WordCloud(max_font_size=50, max_words=200, background_color="white")

plt.figure(figsize=(8, 6))
plt.imshow(wordcloud, interpolation='bilinear')
plt.axis("off")
plt.title('Word Cloud of Text')
plt.show()
```

CONCLUSION:-

With the help of the program, we can analyze the different types of user sentiments that they are inciting to in Social Media platforms like Instagram, Facebook, and Twitter.we can also analysing that ,In social media the more number of people are in positive attitude it leads to the best for the society.