In [1]:
```
print("Name :")
print("We will learn how to perform group by operation and count nu
print("We will learn how to perform group by operation and count th
print("We will learn how to search the number of active rockets, an
```

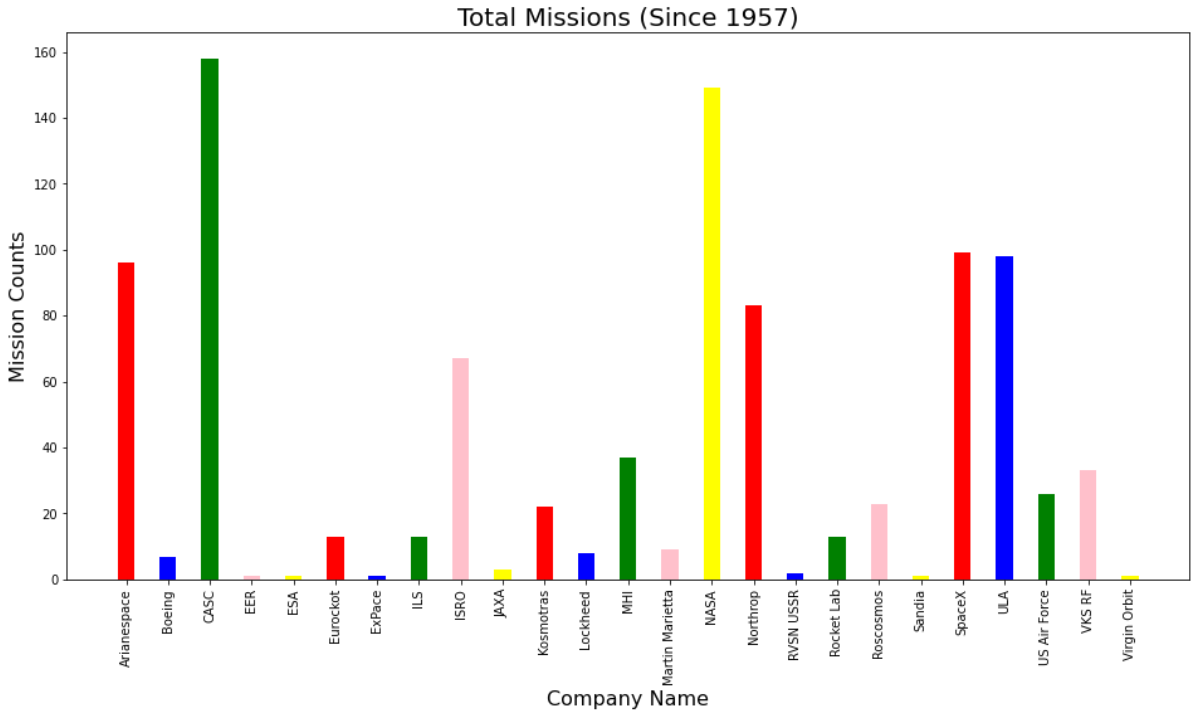
```
Name :
We will learn how to perform group by operation and count number o
f Missions as per the company, and plot a bar graph out of it
We will learn how to perform group by operation and count the stat
us of the Missions, and plot a pie chart out of it
We will learn how to search the number of active rockets, and perf
orm group by operation and count number of active rockets as per t
he company and plot a bar graph out of it
```

In [3]:
```
import  numpy as np
import pandas as pd
import matplotlib .pyplot as plt

dataframe = pd.read_csv("space_Corrected.csv")
df=dataframe.dropna()

df.head(10)
group_by_name = df.groupby('Company Name')['Status Mission'].count(
print(group_by_name)
fig = plt.subplots(figsize=(16,8))
plt.title('Total Missions (Since 1957)', fontsize=20)
plt.xlabel('Company Name', fontsize=16)
plt.ylabel('Mission Counts', fontsize=16)
plt.xticks(rotation='vertical')

#Then get all the Company Name and Status Mission count and use the
label = group_by_name['Company Name']
value = group_by_name['Status Mission']
plt.bar(label, value,width=0.4, color=('red','blue','green','pink',
```

	Company Name	Status Mission
0	Arianespace	96
1	Boeing	7
2	CASC	158
3	EER	1
4	ESA	1
5	Eurockot	13
6	ExPace	1
7	ILS	13
8	ISRO	67
9	JAXA	3
10	Kosmotras	22

```
11         Lockheed                8
12              MHI               37
13  Martin Marietta                9
14             NASA              149
15         Northrop               83
16        RVSN USSR                2
17       Rocket Lab               13
18        Roscosmos               23
19           Sandia                1
20           SpaceX               99
21              ULA               98
22     US Air Force               26
23           VKS RF               33
24     Virgin Orbit                1
```

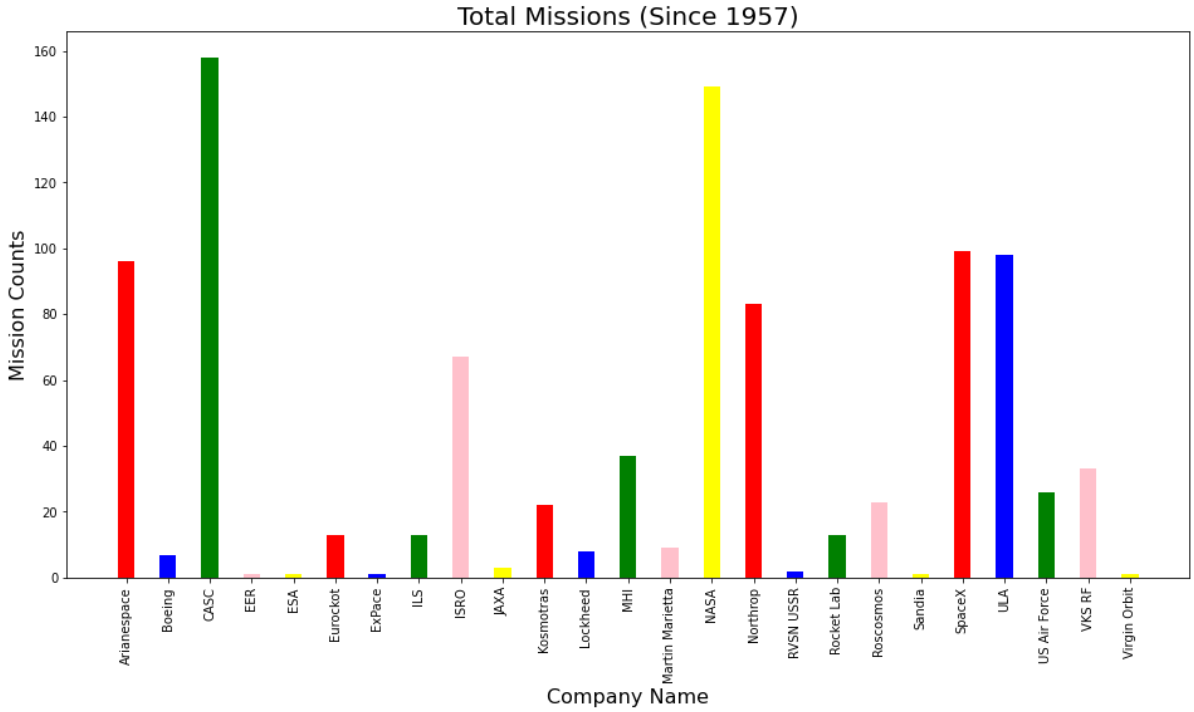
Out[3]: <BarContainer object of 25 artists>



In [4]:
```
#Activity-1
#Find total number of missions by each company, and plot a bar grap
#First group by Company Name and count Status Mission and create a
group_by_name = df.groupby('Company Name')['Status Mission'].count(
print(group_by_name)
fig = plt.subplots(figsize=(16,8))
plt.title('Total Missions (Since 1957)', fontsize=20)
plt.xlabel('Company Name', fontsize=16)
plt.ylabel('Mission Counts', fontsize=16)
plt.xticks(rotation='vertical')

#Then get all the Company Name and Status Mission count and use the
label = group_by_name['Company Name']
value = group_by_name['Status Mission']
plt.bar(label, value,width=0.4, color=('red','blue','green','pink',
```

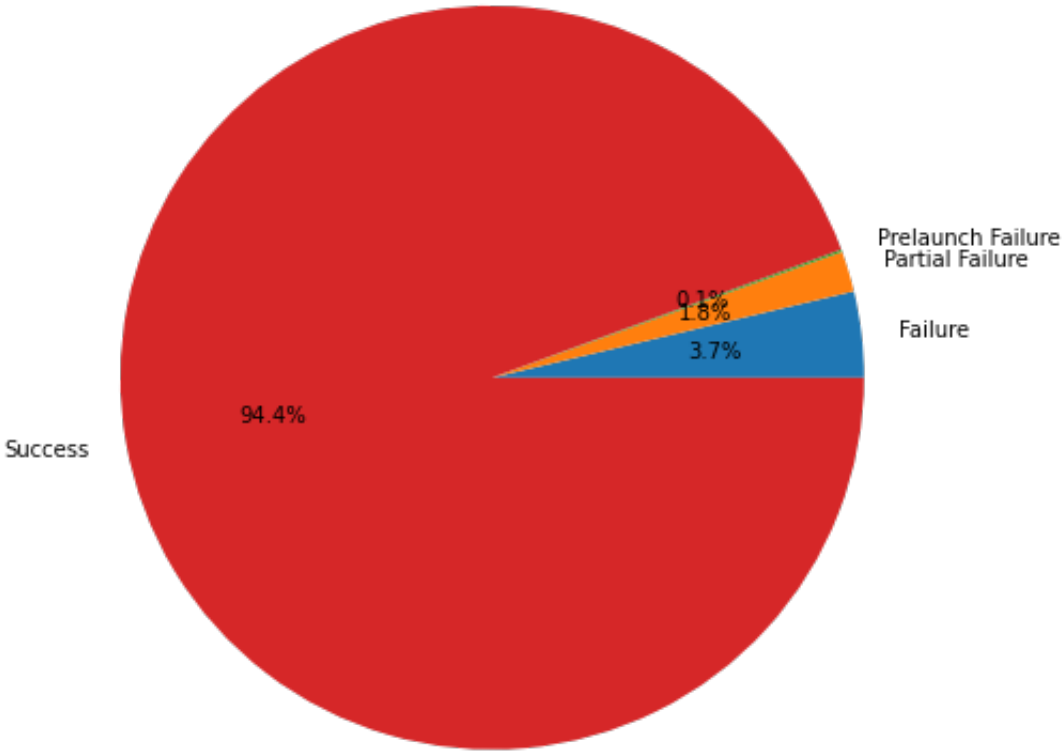
	Company Name	Status Mission
0	Arianespace	96
1	Boeing	7
2	CASC	158
3	EER	1
4	ESA	1
5	Eurockot	13
6	ExPace	1
7	ILS	13
8	ISRO	67
9	JAXA	3
10	Kosmotras	22
11	Lockheed	8
12	MHI	37
13	Martin Marietta	9
14	NASA	149
15	Northrop	83
16	RVSN USSR	2
17	Rocket Lab	13
18	Roscosmos	23
19	Sandia	1
20	SpaceX	99
21	ULA	98
22	US Air Force	26
23	VKS RF	33
24	Virgin Orbit	1

Out[4]: <BarContainer object of 25 artists>



In [5]:
```
#Activity-2
#Find out the percentage of rocket Success, Failure, Partial Failur
group_by_status = df.groupby('Status Mission')['Status Rocket'].cou
print(group_by_status)
value = group_by_status['Status Rocket']
label = group_by_status['Status Mission']
plt.pie(value,labels=label, autopct= '%0.1f%%', radius=2)
plt.show()
```

```
      Status Mission  Status Rocket
0            Failure             36
1    Partial Failure             17
2  Prelaunch Failure              1
3            Success            910
```

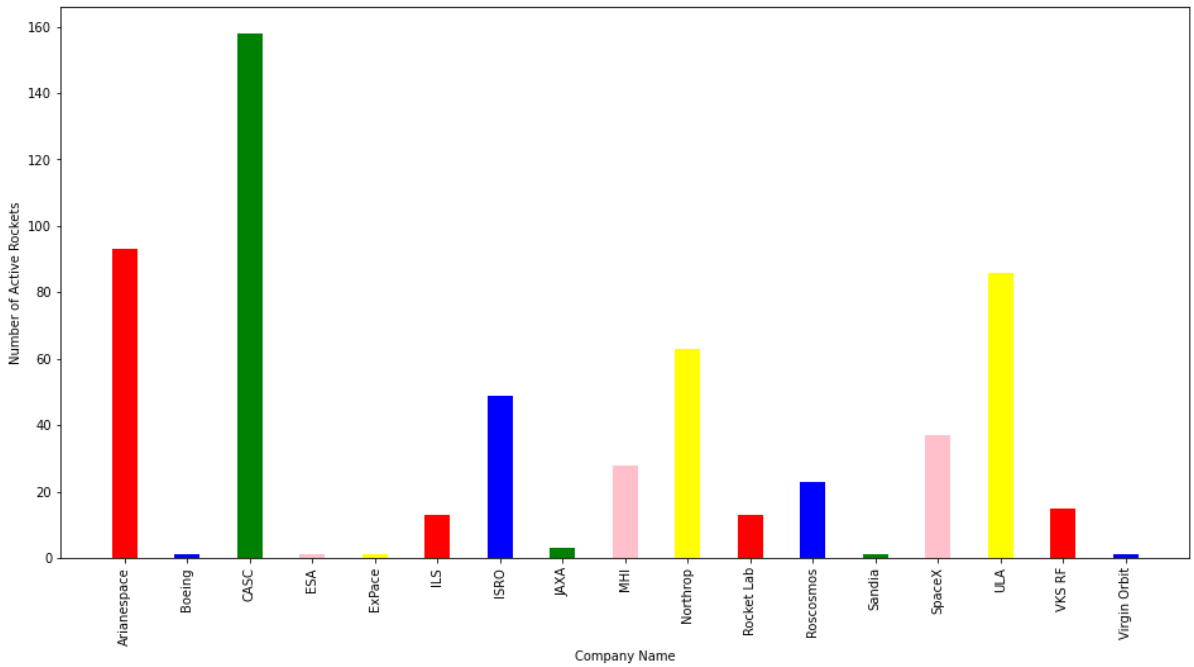


In [6]:
```
e Rockets as per the company and plot a bar grap of it

Rocket column value is equal to StatusActive

e and count Status Rocket and create a new dataframe out of it

lame and Status Rocket count and use these 2 values to plot a bar gr
[df['Status Rocket']== 'StatusActive']

atusActive.groupby('Company Name')['Status Rocket'].count().reset_i

(16, 8))
```

```
tal')
ve Rockets")

ompany Name']
tatus Rocket']

=0.4, color=('red', 'blue', 'green', 'pink', 'yellow'))
```

	Company Name	Status Rocket
0	Arianespace	93
1	Boeing	1
2	CASC	158
3	ESA	1
4	ExPace	1
5	ILS	13
6	ISRO	49
7	JAXA	3
8	MHI	28
9	Northrop	63
10	Rocket Lab	13
11	Roscosmos	23
12	Sandia	1
13	SpaceX	37
14	ULA	86
15	VKS RF	15
16	Virgin Orbit	1

Out[6]: <BarContainer object of 17 artists>



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