In [ ]:
```
# Kale Nikhil (75)
import pandas as pd   #library
import matplotlib.pyplot as plt
```

In [4]:
```
data={
    'Subject':[ "Math","Marathi","Hindi","English","Science","Social Science","S
    'Marks':[ 100,99,23,100,100,56,78,45,46 ],
    'Grade':[ "A+","A+","C","A+","A+","B","B+","C","C"  ],
    'Rank':[ 1,2,3,1,1,4,5,3,3 ],
    'Status':[ "Pass","Pass","Fail","Pass","Pass","Pass","Pass","Fail","Fail" ]
}
```

In [18]:
```
df=pd.DataFrame(data) #convert dictionary to DataFrame
print("DataFrame:")
print(df)
```

```
DataFrame:
              Subject  Marks Grade  Rank Status
0                Math    100    A+     1   Pass
1             Marathi     99    A+     2   Pass
2               Hindi     23     C     3   Fail
3             English    100    A+     1   Pass
4             Science    100    A+     1   Pass
5      Social Science     56     B     4   Pass
6            Sanskrit     78    B+     5   Pass
7    Computer Science     45     C     3   Fail
8  Physical Education     46     C     3   Fail
```

In [ ]:
```
print("Qualitative Data:")
print(df[['Subject', 'Grade', 'Status']])  # Qualitative data
print("\nQuantitative Data:")
print(df[['Marks', 'Rank']]) # Quantitative data
```

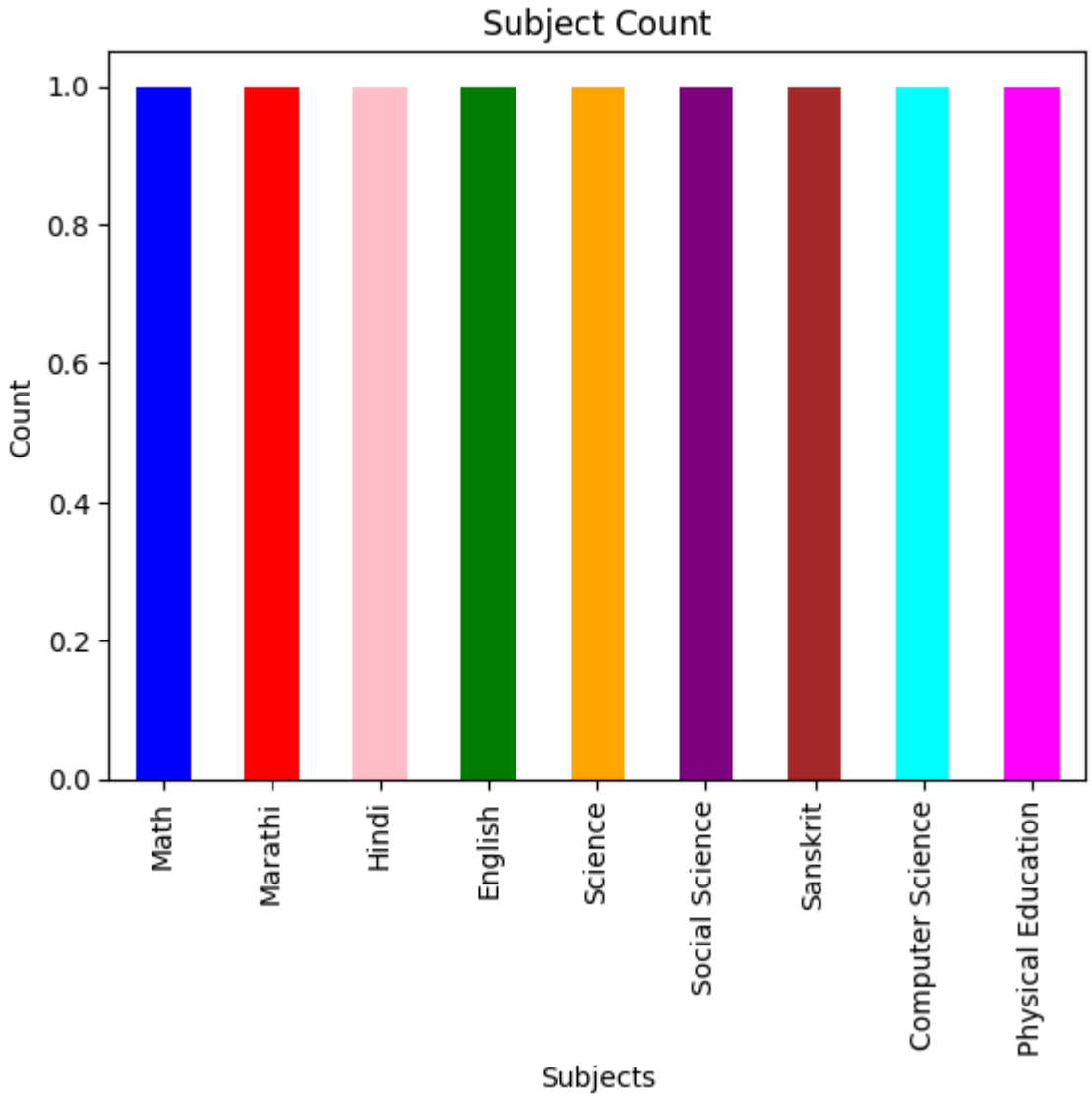
```
Qualitative Data:
              Subject Grade Status
0                Math    A+   Pass
1             Marathi    A+   Pass
2               Hindi     C   Fail
3             English    A+   Pass
4             Science    A+   Pass
5      Social Science     B   Pass
6            Sanskrit    B+   Pass
7    Computer Science     C   Fail
8  Physical Education     C   Fail

Quantitative Data:
   Marks  Rank
0    100     1
1     99     2
2     23     3
3    100     1
4    100     1
5     56     4
6     78     5
7     45     3
8     46     3
```

In [ ]:
```
# subject count
print(df['Subject'].value_counts()) #subject count
print(df['Status'].value_counts())
df['Subject'].value_counts().plot(kind='bar', title='Subject Count',color=['blue
plt.xlabel('Subjects')
plt.ylabel('Count')

plt.show()
```

```
Subject
Math                  1
Marathi               1
Hindi                 1
English               1
Science               1
Social Science        1
Sanskrit              1
Computer Science      1
Physical Education    1
Name: count, dtype: int64
Status
Pass    6
Fail    3
Name: count, dtype: int64
```



In [16]:
```
print("Quntitative Data:")
print(df[['Marks', 'Rank']].describe())
plt.figure(figsize=(8,5))
plt.scatter(df['Marks'], df['Rank'], color='red')
plt.title('Marks vs Rank Scatter Plot')
plt.xlabel('Marks')
plt.ylabel('Rank')
plt.grid(True)
plt.show()
```

```
Quntitative Data:
            Marks      Rank
count    9.000000  9.000000
mean    71.888889  2.555556
std     29.955986  1.424001
min     23.000000  1.000000
25%     46.000000  1.000000
50%     78.000000  3.000000
75%    100.000000  3.000000
max    100.000000  5.000000
```