In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

In [2]:
```
df = pd.read_csv("/Users/sagarbanjara/Downloads/Telco.csv.xls")
```

In [5]:
```
df
```

Out[5]:

	customerID	gender	SeniorCitizen	Partner	Dependents	tenure	PhoneService
0	7590-VHVEG	Female	0	Yes	No	1	No
1	5575-GNVDE	Male	0	No	No	34	Yes
2	3668-QPYBK	Male	0	No	No	2	Yes
3	7795-CFOCW	Male	0	No	No	45	No
4	9237-HQITU	Female	0	No	No	2	Yes
...	...	...	...	...	...	...	...
7038	6840-RESVB	Male	0	Yes	Yes	24	Yes
7039	2234-XADUH	Female	0	Yes	Yes	72	Yes
7040	4801-JZAZL	Female	0	Yes	Yes	11	No
7041	8361-LTMKD	Male	1	Yes	No	4	Yes
7042	3186-AJIEK	Male	0	No	No	66	Yes

7043 rows × 21 columns

In [7]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 7043 entries, 0 to 7042
Data columns (total 21 columns):
 #   Column            Non-Null Count  Dtype  
---  ------            --------------  -----  
 0   customerID        7043 non-null   object 
 1   gender            7043 non-null   object 
 2   SeniorCitizen     7043 non-null   int64  
 3   Partner           7043 non-null   object 
 4   Dependents        7043 non-null   object 
 5   tenure            7043 non-null   int64  
 6   PhoneService      7043 non-null   object 
 7   MultipleLines     7043 non-null   object 
 8   InternetService   7043 non-null   object 
 9   OnlineSecurity    7043 non-null   object 
 10  OnlineBackup      7043 non-null   object 
 11  DeviceProtection  7043 non-null   object 
 12  TechSupport       7043 non-null   object 
 13  StreamingTV       7043 non-null   object 
 14  StreamingMovies   7043 non-null   object 
 15  Contract          7043 non-null   object 
 16  PaperlessBilling  7043 non-null   object 
 17  PaymentMethod     7043 non-null   object 
 18  MonthlyCharges    7043 non-null   float64
 19  TotalCharges      7043 non-null   object 
 20  Churn             7043 non-null   object 
dtypes: float64(1), int64(2), object(18)
memory usage: 1.1+ MB
```

In [9]:
```
missing_values = df.isnull().sum()
```

In [11]:
```
missing_values
```

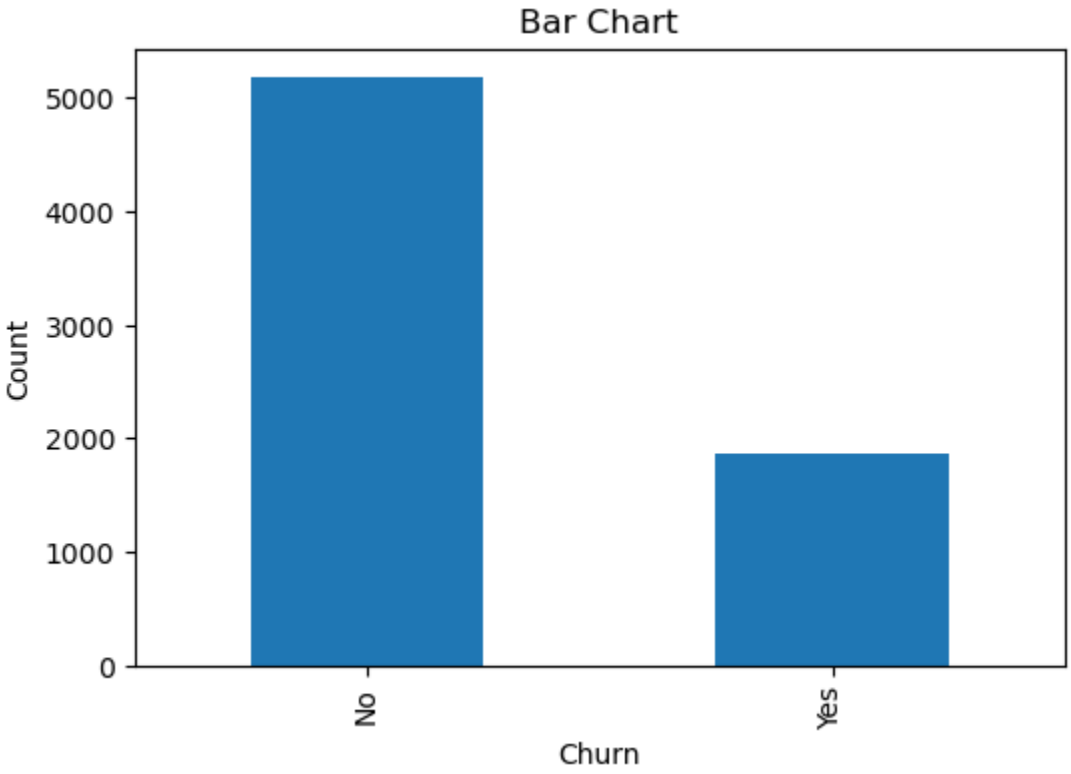
Out[11]:
```
customerID          0
gender              0
SeniorCitizen       0
Partner             0
Dependents          0
tenure              0
PhoneService        0
MultipleLines       0
InternetService     0
OnlineSecurity      0
OnlineBackup        0
DeviceProtection    0
TechSupport         0
StreamingTV         0
StreamingMovies     0
Contract            0
PaperlessBilling    0
PaymentMethod       0
MonthlyCharges      0
TotalCharges        0
Churn               0
dtype: int64
```

In [13]:
```
df.describe()
```

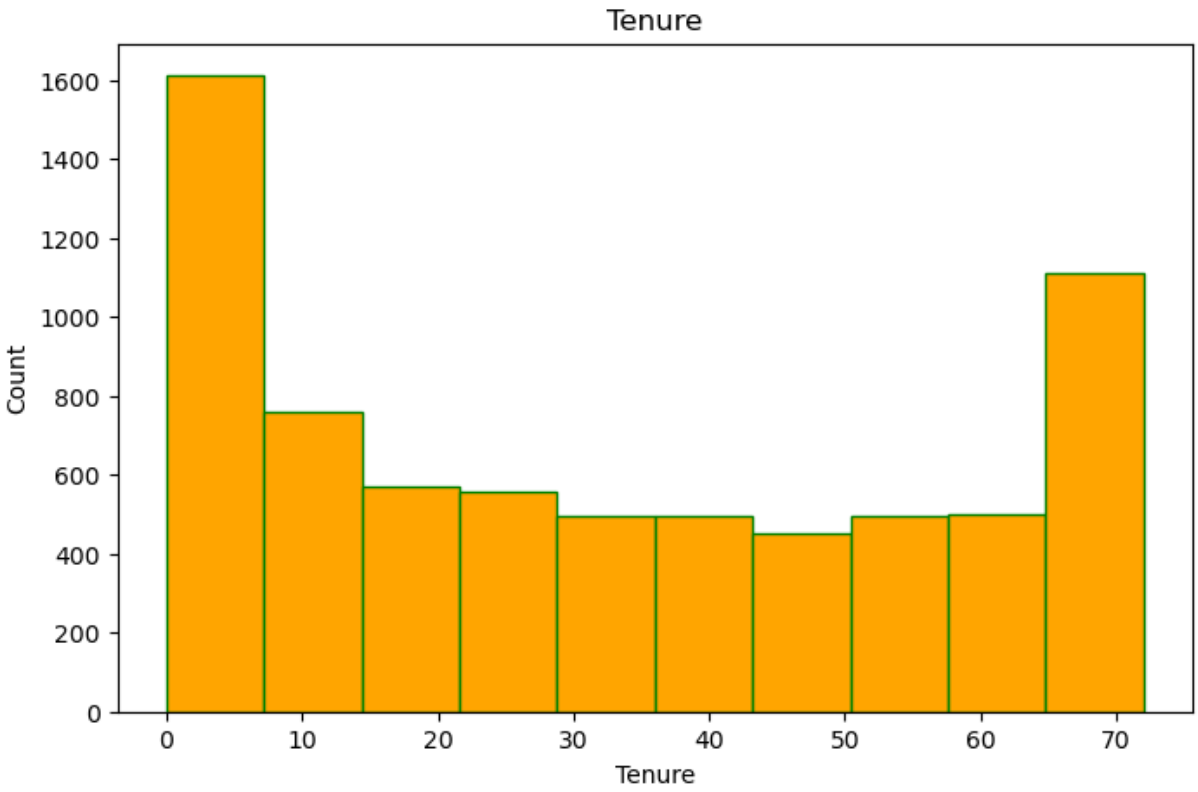
Out[13]:

	SeniorCitizen	tenure	MonthlyCharges
count	7043.000000	7043.000000	7043.000000
mean	0.162147	32.371149	64.761692
std	0.368612	24.559481	30.090047
min	0.000000	0.000000	18.250000
25%	0.000000	9.000000	35.500000
50%	0.000000	29.000000	70.350000
75%	0.000000	55.000000	89.850000
max	1.000000	72.000000	118.750000

In [15]:
```
plt.figure(figsize=(6, 4))
df['Churn'].value_counts().plot(kind='bar')
plt.title('Bar Chart')
plt.xlabel('Churn')
plt.ylabel('Count')
plt.show()
```



In [17]:
```
plt.figure(figsize=(8, 5))
plt.hist(df['tenure'], color='orange', edgecolor='green')
plt.title('Tenure')
plt.xlabel('Tenure')
plt.ylabel('Count')
plt.show()
```



In [ ]:
```
plt.scatter(df['TotalCharges'], df['MonthlyCharges'])
plt.xlabel('MonthlyCharges')
plt.ylabel('TotalCharges')
plt.title('Monthly and Total charges')        #giving the specific name for
plt.show()
```

In [ ]:
```
plt.figure(figsize=(6, 4))
df['PaymentMethod'].value_counts().plot(kind='bar',color='orange', edgecolor
plt.title(' Payment Methods')
plt.xlabel('PaymentMethod')
plt.ylabel('Count')
plt.show()
```

In [ ]:

In [ ]: