September 9, 2023

[38]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from IPython.display import Image, display
%matplotlib inline
titan = pd.read_csv('/content/Titanic - Titanic.csv')
display(titan.head(10))
display(titan.tail(10))
```

	PassengerId	Survived	Pclass	\
0	1	0	3	
1	2	1	1	
2	3	1	3	
3	4	1	1	
4	5	0	3	
5	6	0	3	
6	7	0	1	
7	8	0	3	
8	9	1	3	
9	10	1	2	

	Name	Sex	Age	SibSp	\
0	Braund, Mr. Owen Harris	male	22.0	1	
1	Cumings, Mrs. John Bradley (Florence Briggs Th…	female	38.0	1	
2	Heikkinen, Miss. Laina	female	26.0	0	
3	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	
4	Allen, Mr. William Henry	male	35.0	0	
5	Moran, Mr. James	male	NaN	0	
6	McCarthy, Mr. Timothy J	male	54.0	0	
7	Palsson, Master. Gosta Leonard	male	2.0	3	
8	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27.0	0	
9	Nasser, Mrs. Nicholas (Adele Achem)	female	14.0	1	

	Parch	Ticket	Fare	Cabin	Embarked
0	0	A/5 21171	7.2500	NaN	S
1	0	PC 17599	71.2833	C85	C
2	0	STON/O2. 3101282	7.9250	NaN	S

```
3      0            113803  53.1000  C123        S
4      0            373450   8.0500   NaN        S
5      0            330877   8.4583   NaN        Q
6      0             17463  51.8625   E46        S
7      1            349909  21.0750   NaN        S
8      2            347742  11.1333   NaN        S
9      0            237736  30.0708   NaN        C
```

```
     PassengerId  Survived  Pclass                                          Name  \
881          882         0       3                       Markun, Mr. Johann
882          883         0       3              Dahlberg, Miss. Gerda Ulrika
883          884         0       2             Banfield, Mr. Frederick James
884          885         0       3                     Sutehall, Mr. Henry Jr
885          886         0       3       Rice, Mrs. William (Margaret Norton)
886          887         0       2                     Montvila, Rev. Juozas
887          888         1       1              Graham, Miss. Margaret Edith
888          889         0       3  Johnston, Miss. Catherine Helen "Carrie"
889          890         1       1                     Behr, Mr. Karl Howell
890          891         0       3                       Dooley, Mr. Patrick

        Sex   Age  SibSp  Parch            Ticket     Fare Cabin Embarked
881    male  33.0      0      0            349257   7.8958   NaN        S
882  female  22.0      0      0              7552  10.5167   NaN        S
883    male  28.0      0      0  C.A./SOTON 34068  10.5000   NaN        S
884    male  25.0      0      0   SOTON/OQ 392076   7.0500   NaN        S
885  female  39.0      0      5            382652  29.1250   NaN        Q
886    male  27.0      0      0            211536  13.0000   NaN        S
887  female  19.0      0      0            112053  30.0000   B42        S
888  female   NaN      1      2        W./C. 6607  23.4500   NaN        S
889    male  26.0      0      0            111369  30.0000  C148        C
890    male  32.0      0      0            370376   7.7500   NaN        Q
```

[39]:
```
titan.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 12 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   PassengerId  891 non-null    int64
 1   Survived     891 non-null    int64
 2   Pclass       891 non-null    int64
 3   Name         891 non-null    object
 4   Sex          891 non-null    object
 5   Age          714 non-null    float64
 6   SibSp        891 non-null    int64
 7   Parch        891 non-null    int64
 8   Ticket       891 non-null    object
```

```
 9   Fare         891 non-null    float64
 10  Cabin        204 non-null    object
 11  Embarked     889 non-null    object
dtypes: float64(2), int64(5), object(5)
memory usage: 83.7+ KB
```

[40]:
```
titan.describe()
```

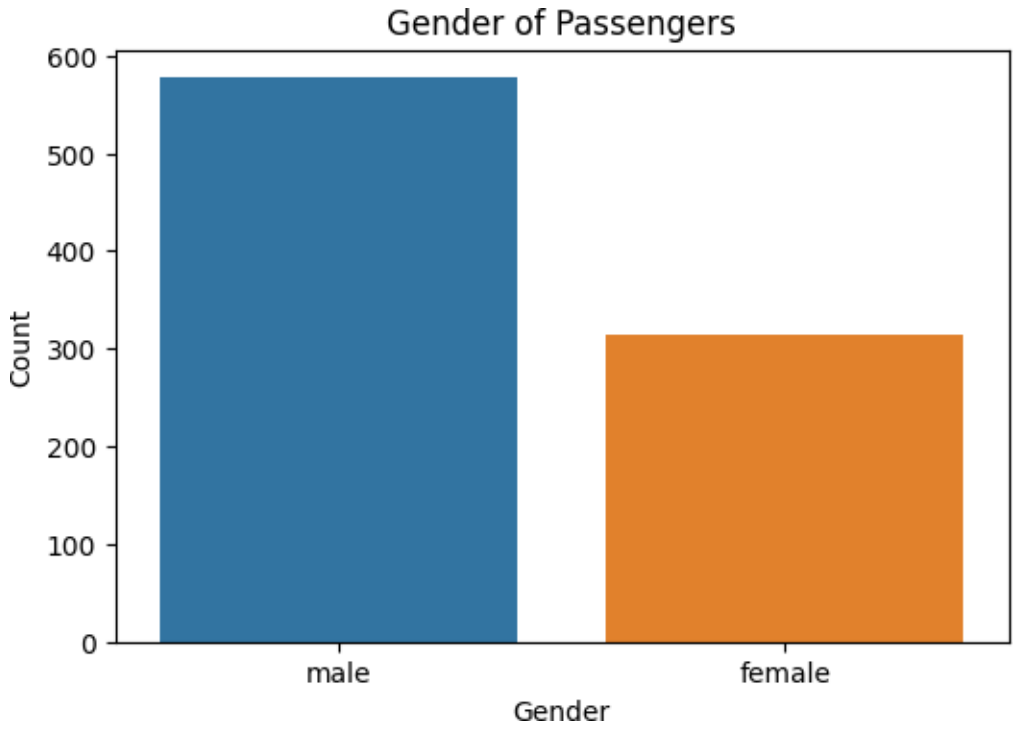
[40]:

	PassengerId	Survived	Pclass	Age	SibSp	Parch	Fare
count	891.000000	891.000000	891.000000	714.000000	891.000000	891.000000	891.000000
mean	446.000000	0.383838	2.308642	29.699118	0.523008	0.381594	32.204208
std	257.353842	0.486592	0.836071	14.526497	1.102743	0.806057	49.693429
min	1.000000	0.000000	1.000000	0.420000	0.000000	0.000000	0.000000
25%	223.500000	0.000000	2.000000	20.125000	0.000000	0.000000	7.910400
50%	446.000000	0.000000	3.000000	28.000000	0.000000	0.000000	14.454200
75%	668.500000	1.000000	3.000000	38.000000	1.000000	0.000000	31.000000
max	891.000000	1.000000	3.000000	80.000000	8.000000	6.000000	512.329200

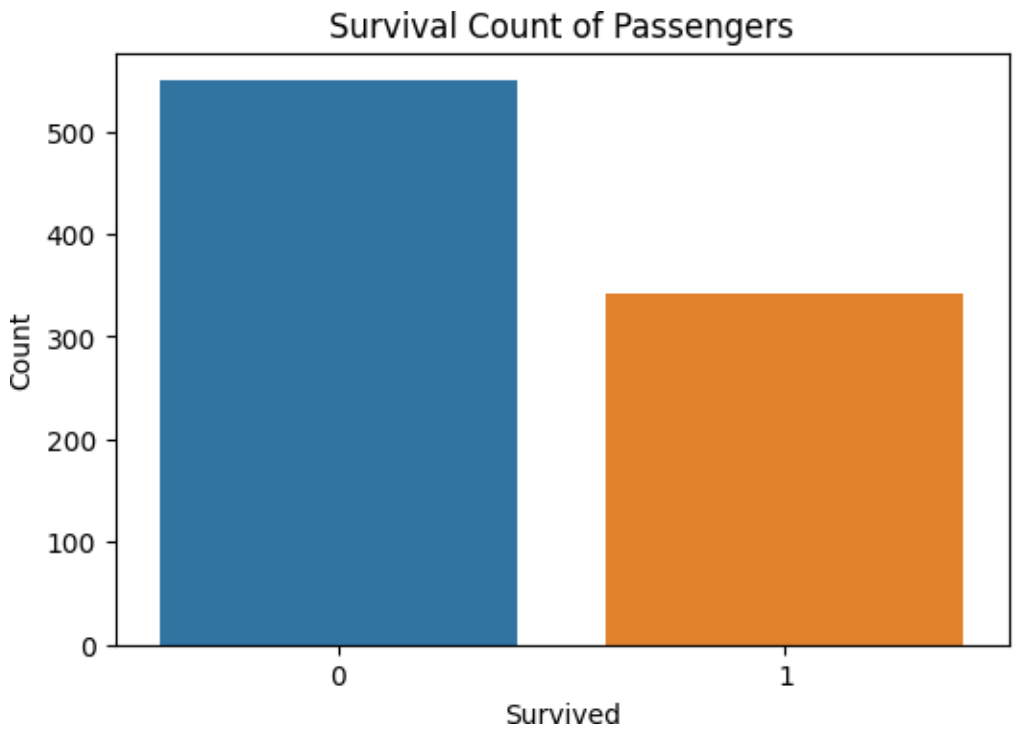
[41]:
```
rownum = np.shape(titan)[0]
colnum = np.shape(titan)[1]
print(rownum)
print(colnum)
```

```
891
12
```

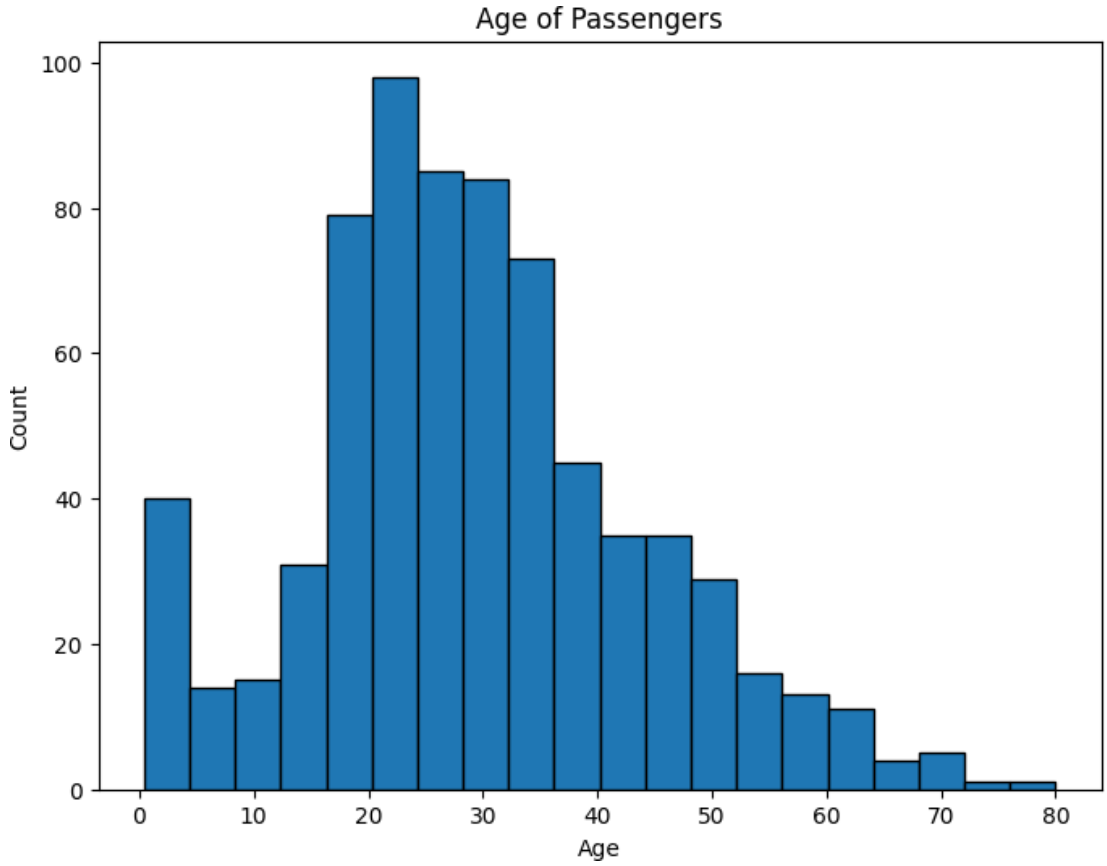
[48]:
```
gender_counts = titan['Sex'].value_counts()
plt.figure(figsize=(6, 4))
sns.barplot(x=gender_counts.index, y=gender_counts.values)
plt.title('Gender of Passengers')
plt.xlabel('Gender')
plt.ylabel('Count')
plt.show()
```



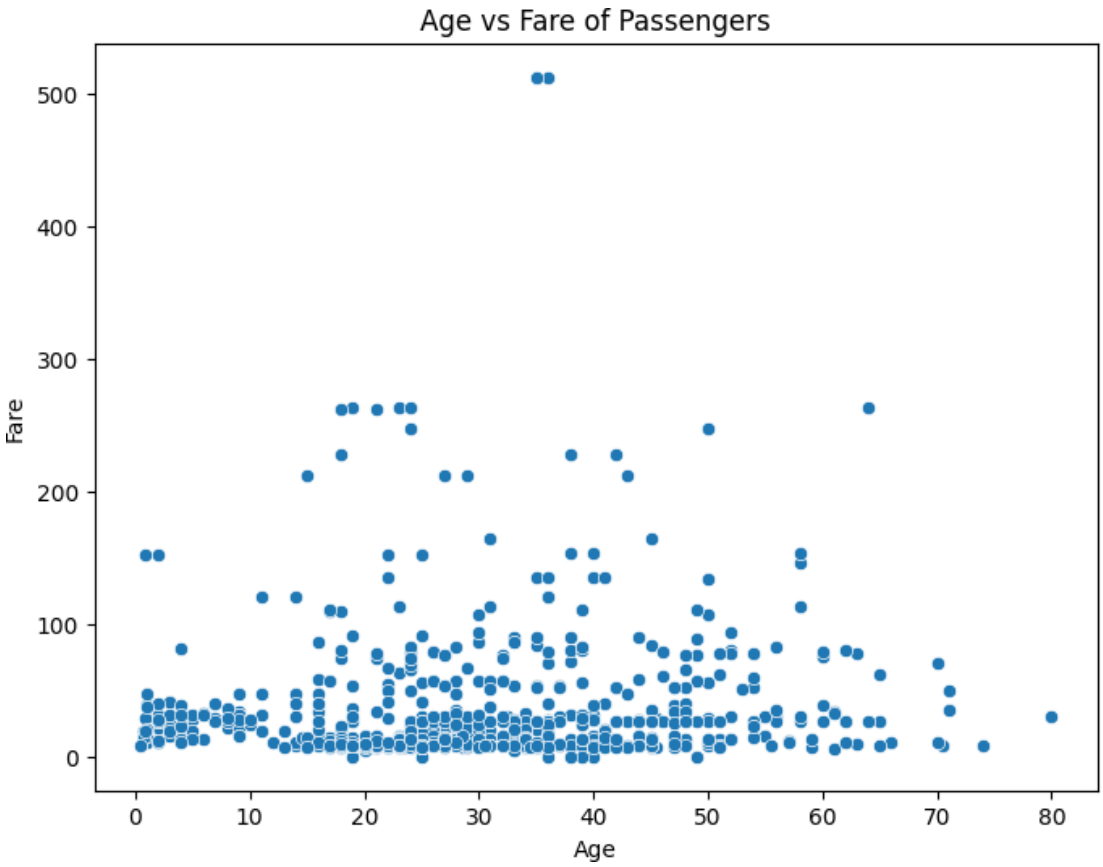
[47]:
```
survival_counts = titan['Survived'].value_counts()
plt.figure(figsize=(6,  4))
sns.barplot(x=survival_counts.index, y=survival_counts.values)
plt.title('Survival Count of Passengers')
plt.xlabel('Survived')
plt.ylabel('Count')
plt.show()
```



[45]:
```
plt.figure(figsize=(8, 6))
plt.hist(titan['Age'], bins=20, edgecolor='black')
plt.title('Age of Passengers')
plt.xlabel('Age')
plt.ylabel('Count')
plt.show()
```



[46]:
```
plt.figure(figsize=(8, 6))
sns.scatterplot(x='Age', y='Fare', data=titan)
plt.title('Age vs Fare of Passengers')
plt.xlabel('Age')
plt.ylabel('Fare')
plt.show()
```


Age vs Fare of Passengers
Fare
Age
0
100
200
300
400
500
0
10
20
30
40
50
60
70
80