1. Prepare the Titanic dataset file (download it from Google)

In [1]:

```
# import libraries
import numpy as np
import pandas as pd
```

In [3]:

```
# import the dataset
data = pd.read_csv("D:\dataset\Titanic-Dataset.csv")
data.head()
```

Out[3]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	NaN	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	NaN	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	NaN	S

In [6]:

```
# Shape of the dataset
data.shape
```

Out[6]:

```
(891, 12)
```

In [4]:

```
# descriptive information of the dataset
data.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
```

In [7]:

```
data.describe()
```

Out[7]:

	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

In [10]:

```
data.isnull().sum()
```

Out[10]:

```
PassengerId      0
Survived         0
Pclass           0
Name             0
Sex              0
Age            177
SibSp            0
Parch            0
Ticket           0
Fare             0
Cabin          687
Embarked         2
dtype: int64
```

2. Find out the names of passengers younger than 35 years.

In [52]:

```
young_passengers = data[data['Age'] < 35]['Name']
print(young_passengers)
```

```
0                                  Braund, Mr. Owen Harris
2                                   Heikkinen, Miss. Laina
7                           Palsson, Master. Gosta Leonard
8        Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)
9                      Nasser, Mrs. Nicholas (Adele Achem)
                              ...                        
884                                 Sutehall, Mr. Henry Jr
886                                  Montvila, Rev. Juozas
887                           Graham, Miss. Margaret Edith
889                                  Behr, Mr. Karl Howell
890                                    Dooley, Mr. Patrick
Name: Name, Length: 479, dtype: object
```

In [53]:

```
# Total passenger younger than 35 years
young_passengers.shape
```

Out[53]:

```
(479,)
```

3. Print the rows from index 10 to 25 and columns 3 to 5

In [64]:

```
df = data.iloc[10:26,3:6]
df
```

Out[64]:

	Name	Sex	Age
10	Sandstrom, Miss. Marguerite Rut	female	4.0
11	Bonnell, Miss. Elizabeth	female	58.0
12	Saundercock, Mr. William Henry	male	20.0
13	Andersson, Mr. Anders Johan	male	39.0
14	Vestrom, Miss. Hulda Amanda Adolfina	female	14.0
15	Hewlett, Mrs. (Mary D Kingcome)	female	55.0
16	Rice, Master. Eugene	male	2.0
17	Williams, Mr. Charles Eugene	male	NaN
18	Vander Planke, Mrs. Julius (Emelia Maria Vande...	female	31.0
19	Masselmani, Mrs. Fatima	female	NaN
20	Fynney, Mr. Joseph J	male	35.0
21	Beesley, Mr. Lawrence	male	34.0
22	McGowan, Miss. Anna "Annie"	female	15.0
23	Sloper, Mr. William Thompson	male	28.0
24	Palsson, Miss. Torborg Danira	female	8.0
25	Asplund, Mrs. Carl Oscar (Selma Augusta Emilia...	female	38.0

4. Find out the statistics aggregate of Age & Fare using the DataFrame.agg() method

In [70]:

```
agg_dict = {'Age': [np.min, np.max, np.mean, np.median, np.std],
            'Fare': [np.min, np.max, np.mean, np.median, np.std]}

agg_stats = data.agg(agg_dict)
print(agg_stats)
```

```
              Age        Fare
amin     0.420000    0.000000
amax    80.000000  512.329200
mean    29.699118   32.204208
median  28.000000   14.454200
std     14.526497   49.693429
```

5. Find out the mean ticket fare price for each of the sex and cabin class combinations

In [71]:

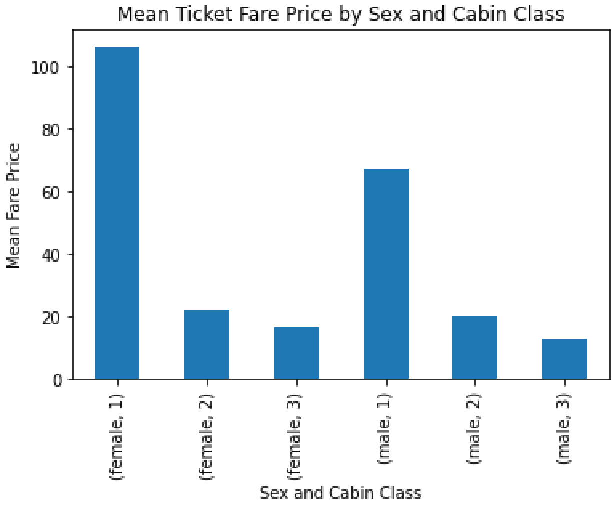
```
fare_by_sex_class = data.groupby(['Sex', 'Pclass'])['Fare'].mean()
print(fare_by_sex_class)
```

```
Sex     Pclass
female  1         106.125798
        2          21.970121
        3          16.118810
male    1          67.226127
        2          19.741782
        3          12.661633
Name: Fare, dtype: float64
```

In [72]:

```
import matplotlib.pyplot as plt

fare_by_sex_class.plot(kind='bar')
plt.title('Mean Ticket Fare Price by Sex and Cabin Class')
plt.xlabel('Sex and Cabin Class')
plt.ylabel('Mean Fare Price')
plt.show()
```



Thank You