## Data visualization

matplotlib.pyplot -->is a state-based interface to matplotlib. It provides a MATLAB-like way of plotting.

pyplot is mainly intended for interactive plots and simple cases of programmatic plot generation.

sns.barplot-->Show point estimates and confidence intervals as rectangular bars.

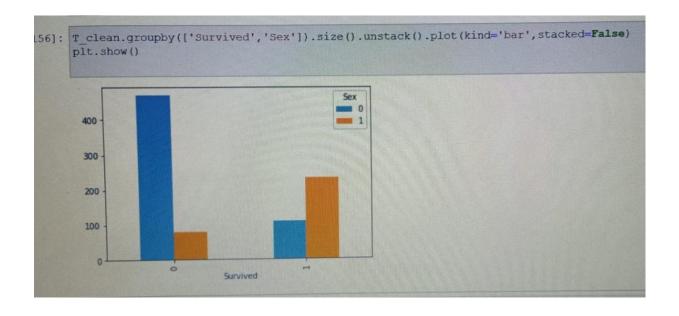
Returns the Axes object with the plot drawn onto it.

### At the first histogram:

we will be grouping the data using the groupby() method according to 'Survived,Sex' and plotting it.

### Plotting using Pandas:

-we can see the description of the relationship between Survived and Sex.

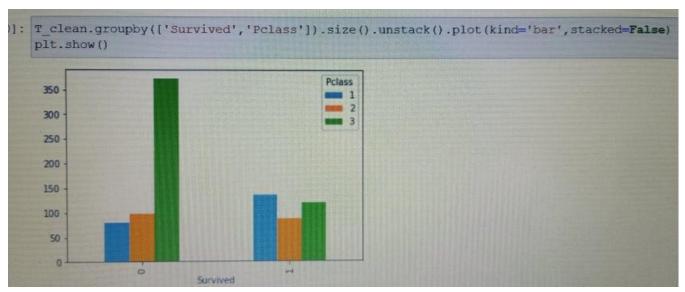


#### At the second histogram:

we will be grouping the data using the groupby() method according to 'Survived, Pclass' and plotting it.

## Plotting using Pandas:

It shows the description of the relationship between Survived and Pclass.

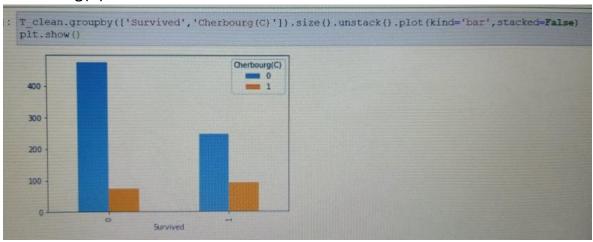


### At the third histogram:

We use the groupby() function to group 'Survived' column and 'Cherbourg(C)' column

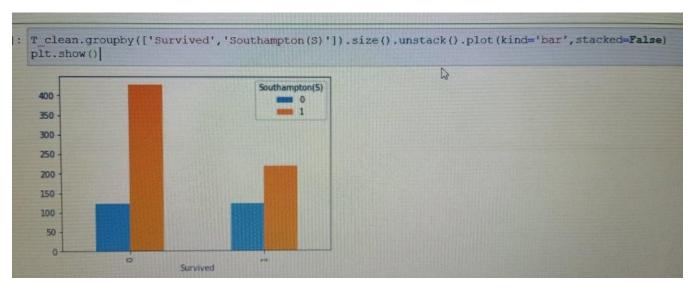
### Plotting using Pandas:

It shows the description of the relationship between Survived and Cherbourg(C).



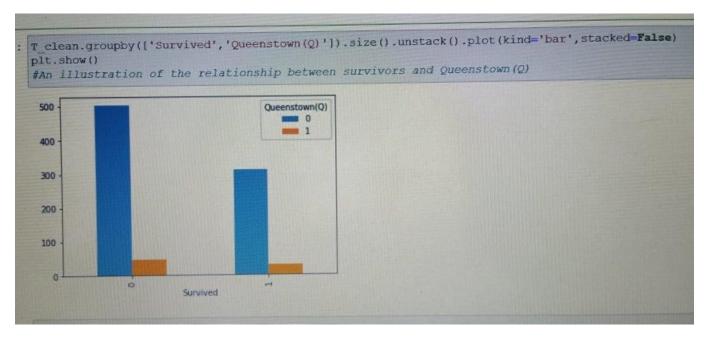
## At the fourth histogram:

-the description of the relationship between Survived and Southampton(S).



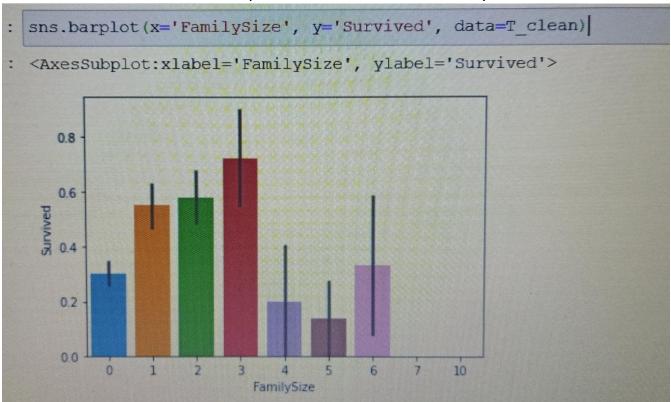
# At the fifth histogram:

-An illustration of the relationship between survivors and Queenstown(Q).



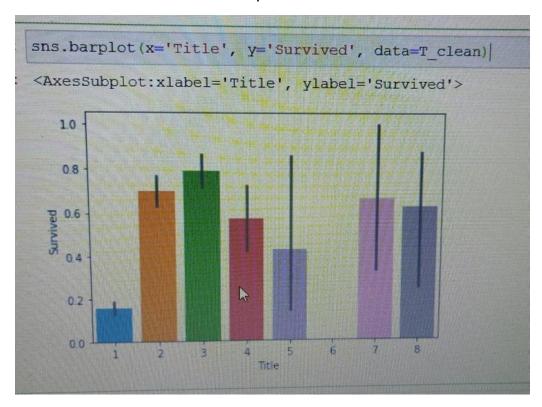
## At the sixth histogram:

-An illustration of the relationship between survivors and FamilySize



At the seventh histogram:

An illustration of the relationship between survivors and Title.



At the least you can see the correlation matrix of titanic data:

sns.heatmap-->Plot rectangular data as a color-encoded matrix.

Returns Axes object with the heatmap.

plt.title-->Set a title for the axes.

Corr--> we use it to compute pairwise correlation of columns, excluding NA/null values.

Returns the correlation matrix.

```
correlation mat = T clean.corr()
sns.heatmap(correlation mat, annot = True)
plt.title("CORRELATION MATRIX OF TITANIC")
plt.xlabel("")
plt.ylabel("")
plt.show()
                      CORRELATION MATRIX OF TITANIC
                                                                     -10
     Passengerid - 1 0.024.0430.058.046.0130.0390.040.022.0012.034.00
            Title -0.02-1 0.0720026 43 0 12-0.210 270 079 085 0022 37
                                                                    -0.8
           Years -0.049.07 1 0.0850.120.0920.350.28.0010.040.050.08
                                                                    -0.6
          Months 0.0550025.08 1 0.110.07 9.160.0190.280.0680.340.028
                                                                    -0.4
             Sex -0 04 0 43 0 120 11 1 0 180 13 0 2 0 120 08 B 07 4 S
            Fare 0.0130.120.0920.0750.18 1 0.550.22-0.160.27-0.120.26
                                                                    -0.2
           Pclass -0.035.210.350.160.130.55 1 0.066.0740.240.220.34
                                                                    -0.0
       FamilySize -0.040 27-0.28 0190.2 0.220.06( 1.0.07-0.046.058.01
                                                                     -0.2
  Southampton(5) -0.020.0780019.280.120.10.074.07 1 -0.78-0.5-0.15
     Cherbourg(C) -.00 020850 040.068 0830 27-0.240.04 0.75 1 0.150 17
                                                                     -0.4
   Queenstown(Q) -0.030400200540.340.0740.120.220.0590.5-0.15 1
                                                                     -0.6
         Survived -0.009 370.089 0281 0.260.340 0170.150 17 003
```