KEY_Practice19B_BarCharts_Histograms

July 19, 2019

1 Bar Charts and Histograms

As always, let's begin by importing our necessary packages and reading in/previewing our data. In this practice we will continue to explore the `titanic` dataset.

[1]:
```
# import seaborn
import seaborn as sns
```

[2]:
```
# read in titanic data
titanic = sns.load_dataset("titanic")
# preview data
titanic.head()
```

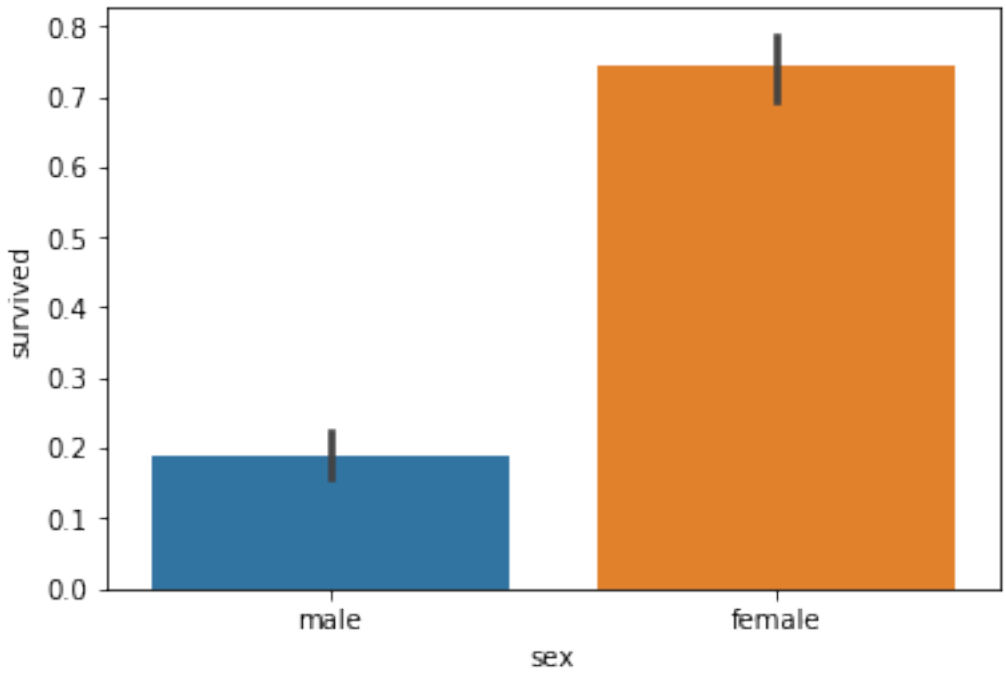
[2]:
```
   survived  pclass     sex   age  sibsp  parch     fare embarked  class  \
0         0       3    male  22.0      1      0   7.2500        S  Third
1         1       1  female  38.0      1      0  71.2833        C  First
2         1       3  female  26.0      0      0   7.9250        S  Third
3         1       1  female  35.0      1      0  53.1000        S  First
4         0       3    male  35.0      0      0   8.0500        S  Third

     who  adult_male deck  embark_town alive  alone
0    man        True  NaN  Southampton    no  False
1  woman       False    C    Cherbourg   yes  False
2  woman       False  NaN  Southampton   yes   True
3  woman       False    C  Southampton   yes  False
4    man        True  NaN  Southampton    no   True
```

1.1 Bar Charts

Generate a barplot of `survived` (y-axis) across `sex` (x-axis).

[5]:
```
# barplot of sex vs survived
sns.barplot(x="sex", y = 'survived', data=titanic)
```

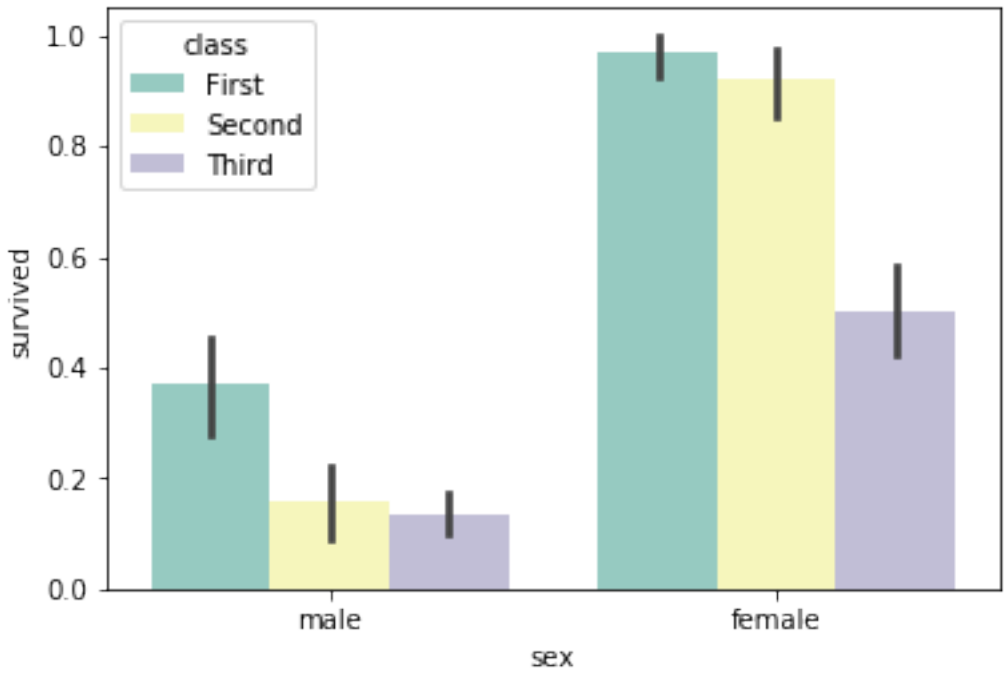
[5]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a162ba438>
```



Now, generate a barplot of `survived` (y-axis) across `sex` (x-axis), stratified by `class`. Choose your favorite color palette.

[4]:
```
# barplot of sex vs survived stratified by class
sns.barplot(x="sex", y = 'survived', hue = "class", palette =␣
 ↪"Set3",data=titanic)
```

[4]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a161fac18>
```

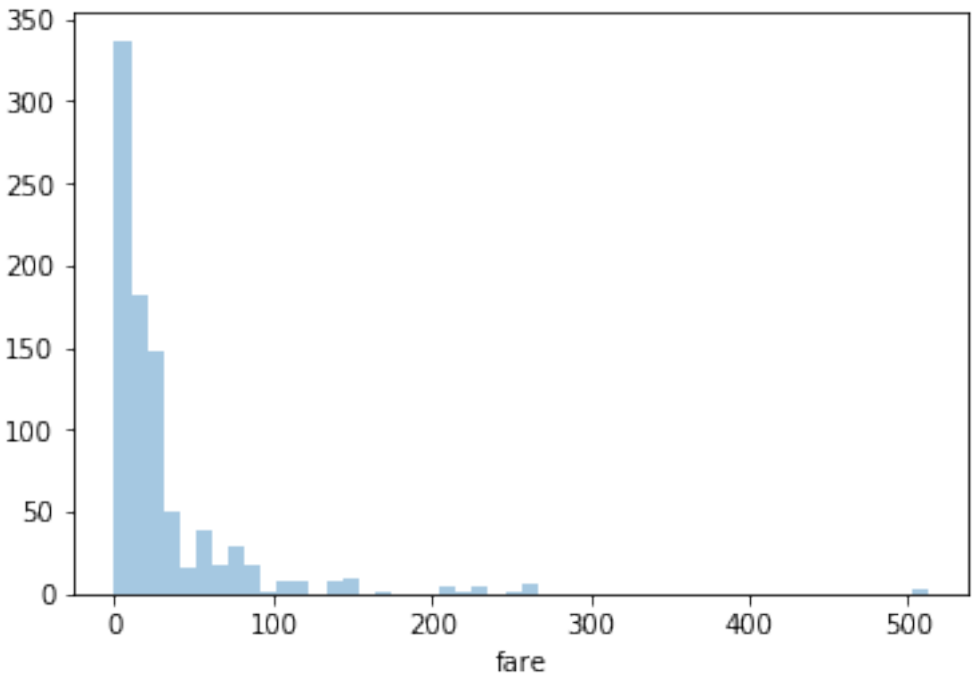


1.2 Histograms

Generate a histogram of `fare`

[6]:
```
#histogram of fare
sns.distplot(titanic['fare'], kde=False)
```

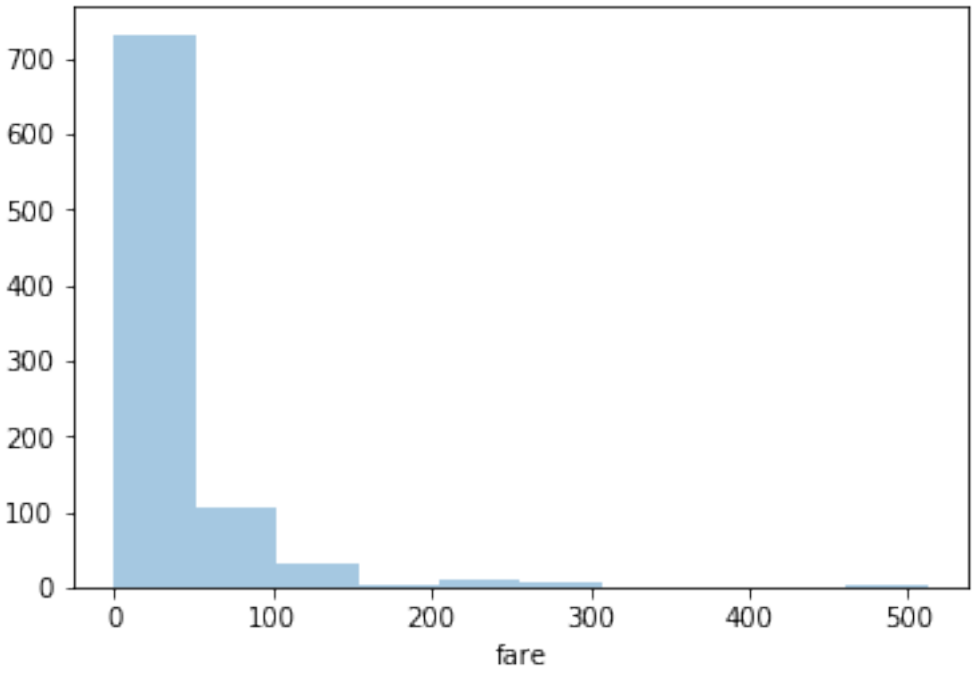
[6]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a16399048>
```



Now let's play with the `bins` parameter. First let's try a small number of bins, like 10:

[12]:
```
#histogram of fare with 10 bins
sns.distplot(titanic['fare'], kde=False, bins=10)
```

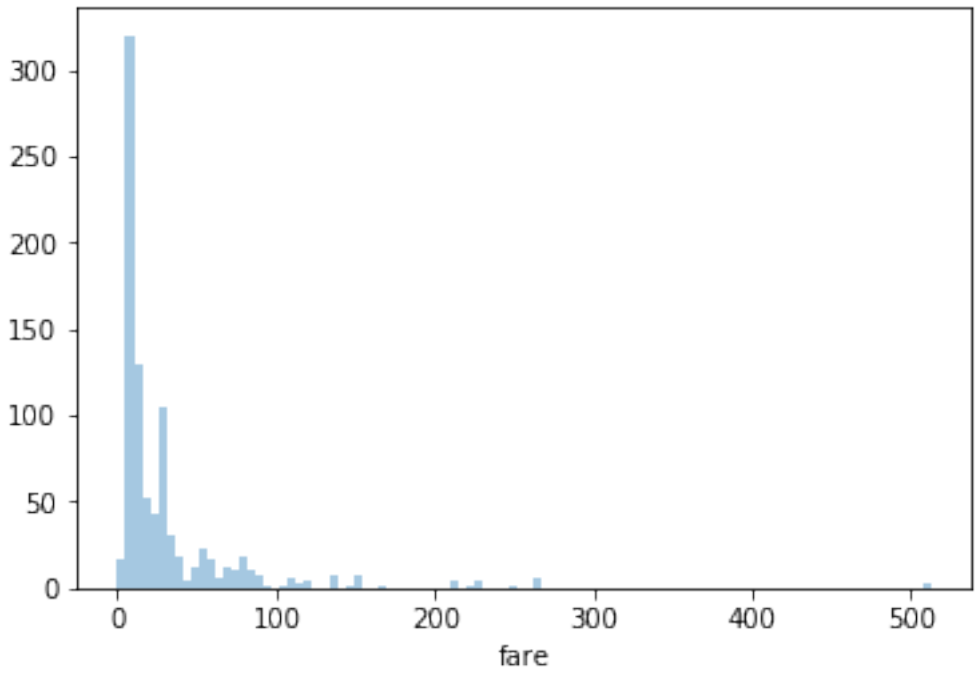
[12]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a16be4a20>
```



Now, let's try a larger number of bins, say 100.

[14]:
```
#histogram of fare with 100 bins
sns.distplot(titanic['fare'], kde=False, bins=100)
```

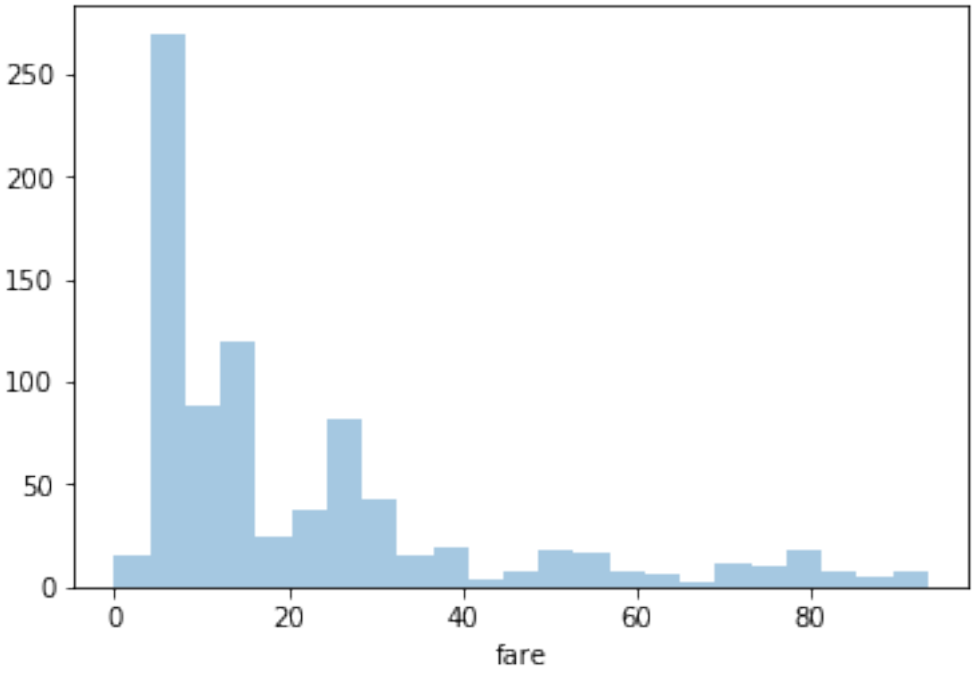
[14]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a16e180b8>
```



As you can see, most of the values are pretty small (< 100 dollars), and there are only a few really large values. This is called a long-tailed distribution. Can you plot a histogram of just the fares that are less than 100 dollars?

[15]:
```
#histogram of fare
sns.distplot(titanic.query('fare < 100')['fare'], kde=False)
```

[15]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a16fc14e0>
```

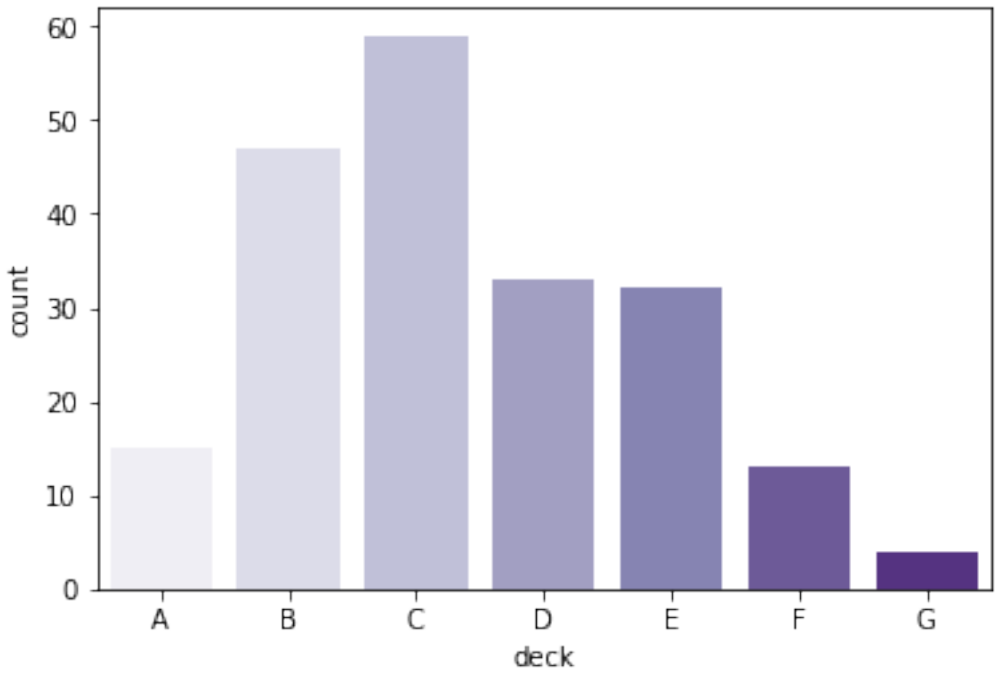


1.3 Count Plots

Generate a count plot to visualize the distribution the `deck` variable across all passengers in our data set. Choose a sequential color palette.

[16]:
```
# count plot of deck
sns.countplot(x="deck", palette = "Purples", data=titanic)
```

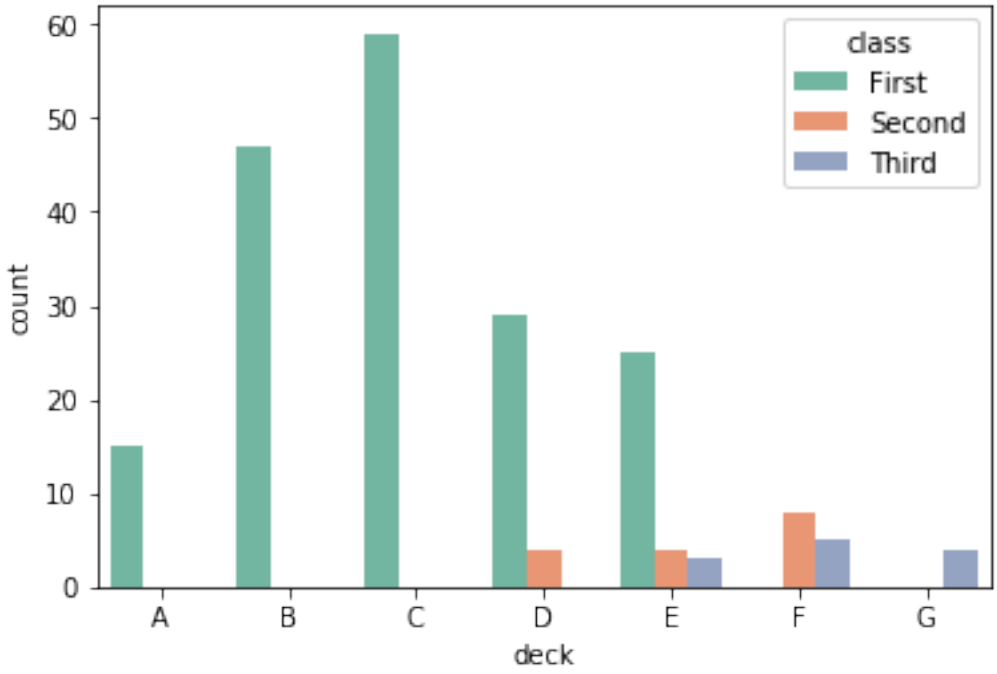
[16]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a171378d0>
```



Now stratify your plot using the `class` variable. What kind of color palette is appropriate now?

[17]:
```
# count plot of deck stratified by class
sns.countplot(x="deck", hue = "class", palette = "Set2", data=titanic)
```

[17]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1a17218710>
```



1.4 Congratulations!

You just completed all of the lessons in the GWC Data Science Summer Experience! Now it's time to put your data science skills to the test in your projects.