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Course&Section: CPE 019 - CPE32S9
Date: February 21, 2024
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Hands-on Activity 4.1 Advanced Data Analytics and Machine Learning

PART 1:

Part 1: Import the Libraries and Data
Part 2: Plot the Data
Part 3: Perform Simple Linear Regression on the SURVIVAL feature column (you can check the internet on how you can perform simple linear regression)

```
import pandas as pd
brainfile1 = '/content/titanic_test.csv'
brainfile2 = '/content/titanic_train.csv'
brainFrame1 = pd.read_csv(brainfile1, sep=',', na_values='.')
brainFrame2 = pd.read_csv(brainfile2, sep=',', na_values='.')
display(brainFrame1,brainFrame2)
```

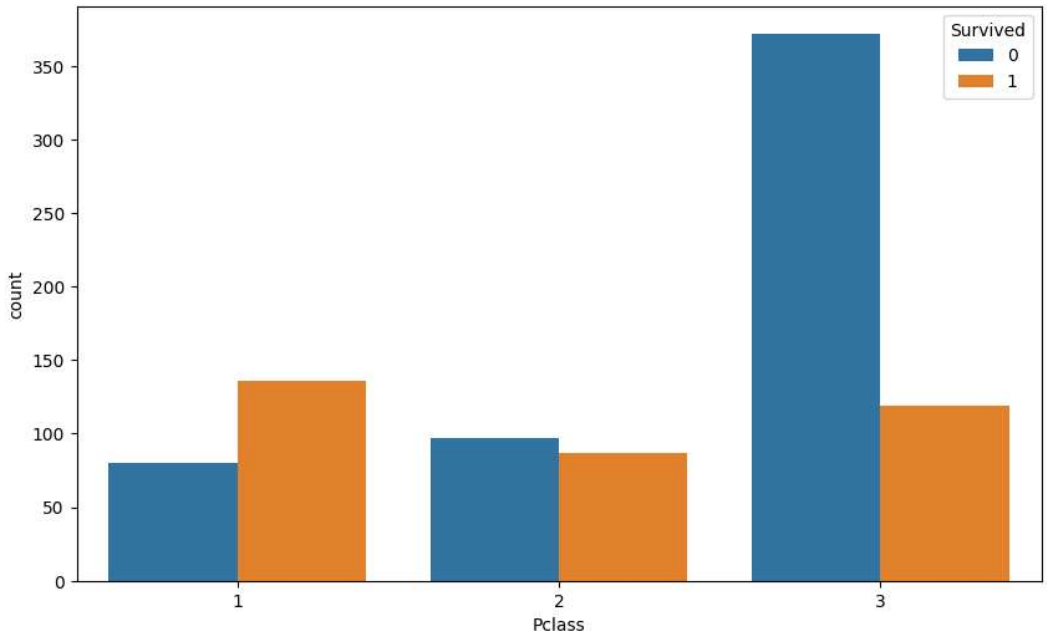
	PassengerId	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	892	3	Kelly, Mr. James	male	34.5	0	0	330911	7.8292	NaN	Q
1	893	3	Wilkes, Mrs. James (Ellen Needs)	female	47.0	1	0	363272	7.0000	NaN	S
2	894	2	Myles, Mr. Thomas Francis	male	62.0	0	0	240276	9.6875	NaN	Q
3	895	3	Wirz, Mr. Albert	male	27.0	0	0	315154	8.6625	NaN	S
4	896	3	Hirvonen, Mrs. Alexander (Helga E Lindqvist)	female	22.0	1	1	3101298	12.2875	NaN	S
...	...	...	...	...	...	...	...	...	...	...	...
413	1305	3	Spector, Mr. Woolf	male	NaN	0	0	A.5. 3236	8.0500	NaN	S
414	1306	1	Oliva y Ocana, Dona. Fermina	female	39.0	0	0	PC 17758	108.9000	C105	C
415	1307	3	Saether, Mr. Simon Sivertsen	male	38.5	0	0	SOTON/O.Q. 3101262	7.2500	NaN	S
416	1308	3	Ware, Mr. Frederick	male	NaN	0	0	359309	8.0500	NaN	S
417	1309	3	Peter, Master. Michael J	male	NaN	1	1	2668	22.3583	NaN	C

418 rows × 11 columns

	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
...	...	...	...	...	...	...	...	...	...	...	...	...
886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	13.0000	NaN	S

Next steps: View recommended plots View recommended plots

```
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
plt.figure(figsize = (10, 6))
sns.countplot(data = brainFrame2,x='Pclass',hue='Survived')
plt.show()
```




```
from sklearn.linear_model import LinearRegression

X= brainFrame2 ['Pclass'].values
Y= brainFrame2 ['Survived'].values
X= X.reshape(-1, 1)
model = LinearRegression()
model.fit(X, Y)
plt.plot(X, model.predict(X))
plt.xlabel('Pclass')
plt.ylabel('Survived')
custom_ticks = [1,2,3]
plt.xticks(custom_ticks)
plt.show()
```