*## Basics*

**import** numpy **as** np

**import** pandas **as** pd

*## Visualization*

**import** matplotlib **as** plt

**import** matplotlib.pyplot **as** plt

**import** seaborn **as** sns

In [ ]:

In [2]:

**from** google.colab **import** drive

drive**.**mount('/content/drive')

Mounted at /content/drive

In [ ]:

data **=** pd**.**read\_csv('/content/drive/MyDrive/IBM/IBM\_Churn\_Modelling.csv')

*#train, test = train\_test\_split(data, test\_size=0.25)*

In [ ]:

fig, ax **=** plt**.**subplots(2, 7, figsize**=**(15, 12))

plt**.**subplots\_adjust(left**=None**, bottom**=None**, right**=None**, top**=**1, wspace**=**0.3, hspace**=**0.4)

**for** variable, subplot **in** zip(data**.**columns, ax**.**flatten()):

sns**.**histplot(data[variable], ax**=**subplot)

In [ ]:

sns**.**pairplot(data **=** data)

plt**.**show()

In [ ]:

result **=** pd**.**pivot\_table(data**=**data, index**=**'CreditScore')

sns**.**heatmap(result, annot**=True**, cmap **=** 'RdYlGn\_r')

plt**.**show()

In [ ]:

*#4*

data**.**describe()

In [ ]:

*#5*

data**.**isnull()**.**sum()

In [ ]:

data['Gender']**.**value\_counts()

In [ ]:

*#6*

sns**.**boxplot(data['Balance'])

In [ ]:

qnt **=** data**.**quantile( q**=**[0.25, 0.75])

In [ ]:

qnt

In [ ]:

IQR**=**qnt**.**loc[0.75]**-**qnt**.**loc[0.25]

In [ ]:

IQR

In [ ]:

uppext**=**qnt**.**loc[0.75]**+**1.5**\***IQR

uppext

In [ ]:

lowext**=**qnt**.**loc[0.25]**-**1.5**\***IQR

lowext

In [ ]:

data[data['CreditScore']**>**9.190000e+02]

In [ ]:

*#7*

pd**.**get\_dummies(data, columns**=**['CreditScore'])

In [ ]:

**from** sklearn.preprocessing **import** LabelEncoder

le**=** LabelEncoder()

data ['CreditScore'] **=** le**.**fit\_transform(data['CreditScore'])

data**.**head()

In [ ]:

*#8*

b**=**data['CustomerId']

a**=**data**.**iloc[:,0:14]

In [ ]:

*#9*

data**.**iloc[:,0:14]

In [ ]:

*#10*

**from** sklearn.model\_selection **import** train\_test\_split

a\_train,a\_test,b\_train,b\_test**=**train\_test\_split(a,b,test\_size**=**0.1)

a\_train**.**shape

In [ ]:

a\_test**.**shape