ATTRITION ASSIGNMENT

STEP 1 = LAUNCHING :

import pandas as pd

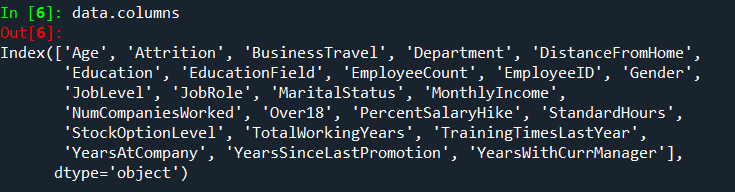
import numpy as n

import matpolib.pyplot as pl

data=pd.read\_csv(“general\_data.csv”)

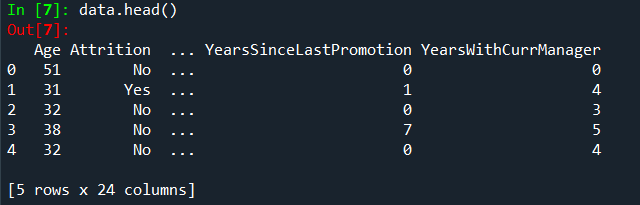
->To find column names .

data.columns



->To find the data of first 5 rows.

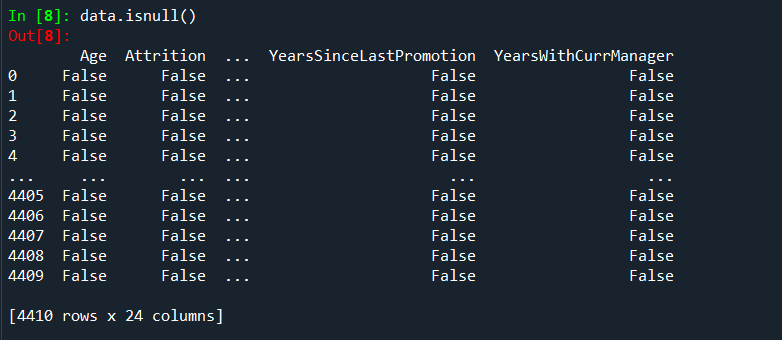
data.head( )



STEP 2 = DATA TREATMENT :

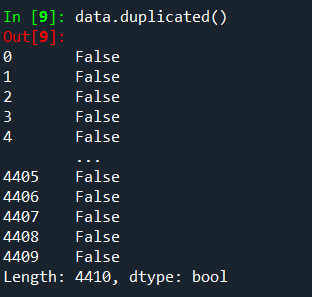
->To find out null values in the table.

data.isnull( )



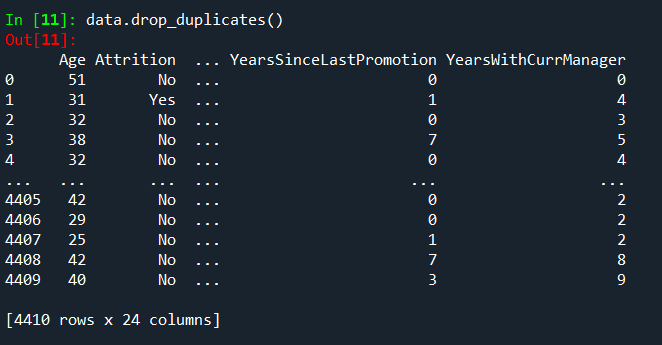
->To find out duplicated values of table.

data.duplicated()



->To drop all duplicated values of the table.

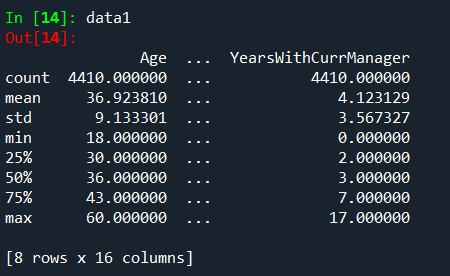
data.drop\_duplicates()



STEP 3 = UNIVARIATE ANALYSIS :

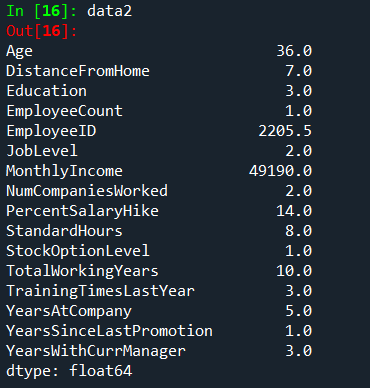
->To describe the whole table.

data1=data[['Age', 'Attrition', 'BusinessTravel', 'Department', 'DistanceFromHome','Education', 'EducationField', 'EmployeeCount', 'EmployeeID', 'Gender','JobLevel', 'JobRole', 'MaritalStatus', 'MonthlyIncome', 'NumCompaniesWorked', 'Over18', 'PercentSalaryHike', 'StandardHours','StockOptionLevel', 'TotalWorkingYears', 'TrainingTimesLastYear','YearsAtCompany', 'YearsSinceLastPromotion', 'YearsWithCurrManager']].describe()



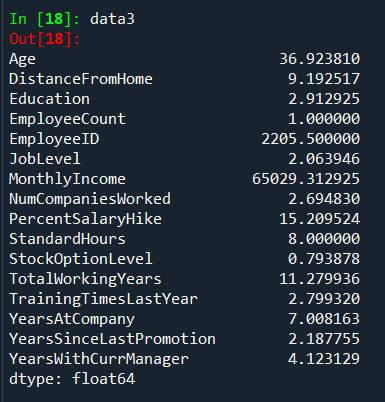
->To find out median of each column .

data2=data[['Age', 'Attrition', 'BusinessTravel', 'Department', 'DistanceFromHome','Education', 'EducationField', 'EmployeeCount', 'EmployeeID', 'Gender','JobLevel', 'JobRole', 'MaritalStatus', 'MonthlyIncome', 'NumCompaniesWorked', 'Over18', 'PercentSalaryHike', 'StandardHours','StockOptionLevel', 'TotalWorkingYears', 'TrainingTimesLastYear','YearsAtCompany', 'YearsSinceLastPromotion', 'YearsWithCurrManager']].median()



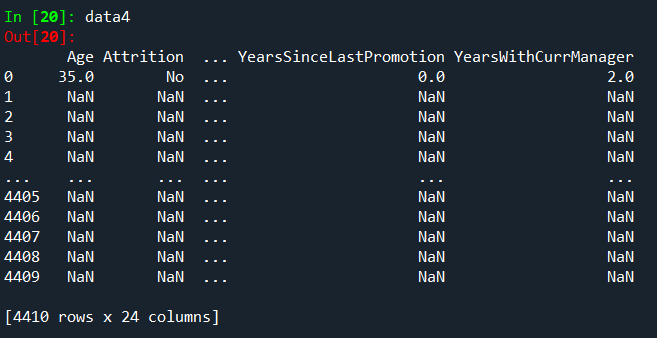
->To find out mean of each column.

data3=data[['Age', 'Attrition', 'BusinessTravel', 'Department', 'DistanceFromHome','Education', 'EducationField', 'EmployeeCount', 'EmployeeID', 'Gender','JobLevel', 'JobRole', 'MaritalStatus', 'MonthlyIncome', 'NumCompaniesWorked', 'Over18', 'PercentSalaryHike', 'StandardHours','StockOptionLevel', 'TotalWorkingYears', 'TrainingTimesLastYear','YearsAtCompany', 'YearsSinceLastPromotion', 'YearsWithCurrManager']].mean()



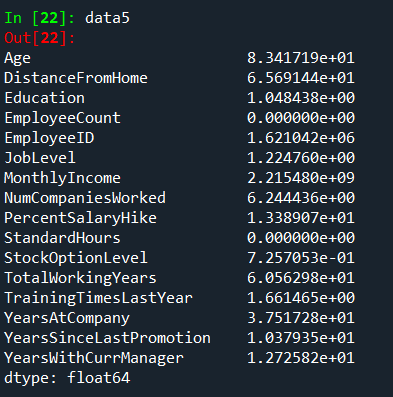
->To find out mode.

data4=data[['Age', 'Attrition', 'BusinessTravel', 'Department', 'DistanceFromHome','Education', 'EducationField', 'EmployeeCount', 'EmployeeID', 'Gender','JobLevel', 'JobRole', 'MaritalStatus', 'MonthlyIncome', 'NumCompaniesWorked', 'Over18', 'PercentSalaryHike', 'StandardHours','StockOptionLevel', 'TotalWorkingYears', 'TrainingTimesLastYear','YearsAtCompany', 'YearsSinceLastPromotion', 'YearsWithCurrManager']].mode()



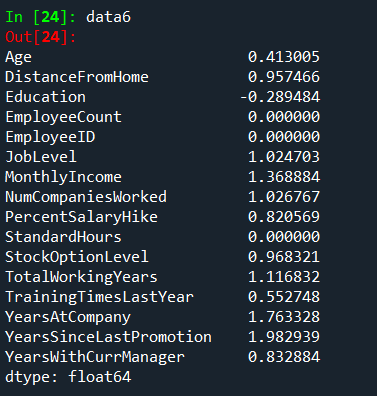
->To find variance of each column.

data5=data[['Age', 'Attrition', 'BusinessTravel', 'Department', 'DistanceFromHome','Education', 'EducationField', 'EmployeeCount', 'EmployeeID', 'Gender','JobLevel', 'JobRole', 'MaritalStatus', 'MonthlyIncome', 'NumCompaniesWorked', 'Over18', 'PercentSalaryHike', 'StandardHours','StockOptionLevel', 'TotalWorkingYears', 'TrainingTimesLastYear','YearsAtCompany', 'YearsSinceLastPromotion', 'YearsWithCurrManager']].var()



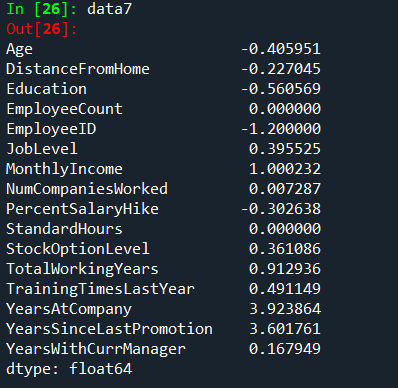
->To find skewness.

data6=data[['Age', 'Attrition', 'BusinessTravel', 'Department', 'DistanceFromHome','Education', 'EducationField', 'EmployeeCount', 'EmployeeID', 'Gender','JobLevel', 'JobRole', 'MaritalStatus', 'MonthlyIncome', 'NumCompaniesWorked', 'Over18', 'PercentSalaryHike', 'StandardHours','StockOptionLevel', 'TotalWorkingYears', 'TrainingTimesLastYear','YearsAtCompany', 'YearsSinceLastPromotion', 'YearsWithCurrManager']].skew()



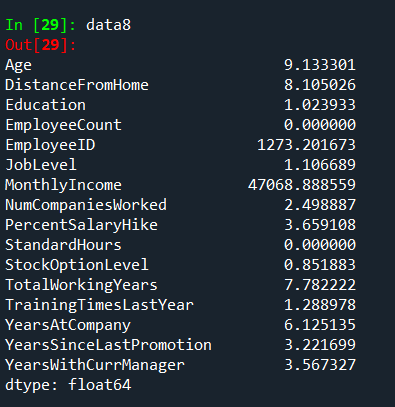
->To find out kurtosis.

data7=data[['Age', 'Attrition', 'BusinessTravel', 'Department', 'DistanceFromHome','Education', 'EducationField', 'EmployeeCount', 'EmployeeID', 'Gender','JobLevel', 'JobRole', 'MaritalStatus', 'MonthlyIncome', 'NumCompaniesWorked', 'Over18', 'PercentSalaryHike', 'StandardHours','StockOptionLevel', 'TotalWorkingYears', 'TrainingTimesLastYear','YearsAtCompany', 'YearsSinceLastPromotion', 'YearsWithCurrManager']].kurt()

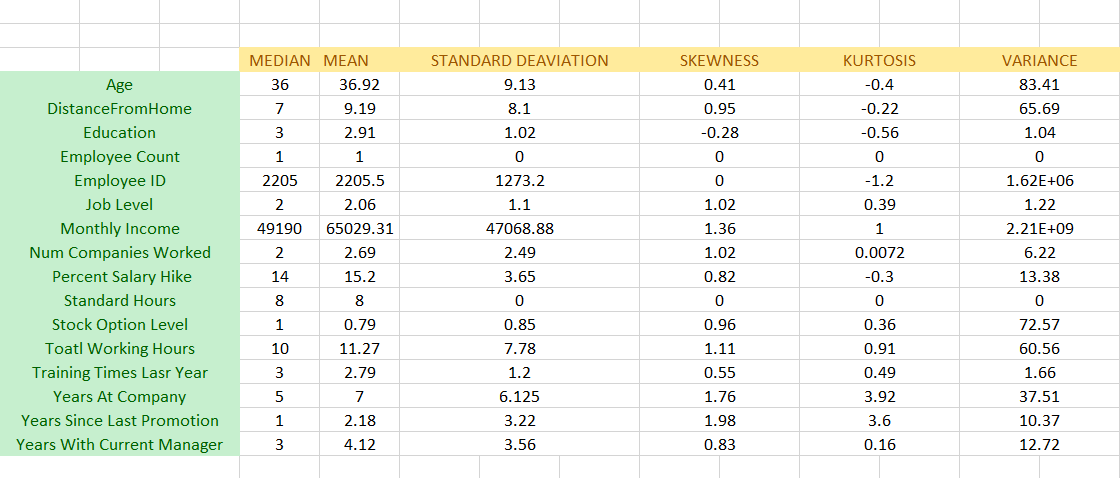


->To find standard deviation .

data8=data[['Age', 'Attrition', 'BusinessTravel', 'Department', 'DistanceFromHome','Education', 'EducationField', 'EmployeeCount', 'EmployeeID', 'Gender','JobLevel', 'JobRole', 'MaritalStatus', 'MonthlyIncome', 'NumCompaniesWorked', 'Over18', 'PercentSalaryHike', 'StandardHours','StockOptionLevel', 'TotalWorkingYears', 'TrainingTimesLastYear','YearsAtCompany', 'YearsSinceLastPromotion', 'YearsWithCurrManager']].std()



INFERENCE :



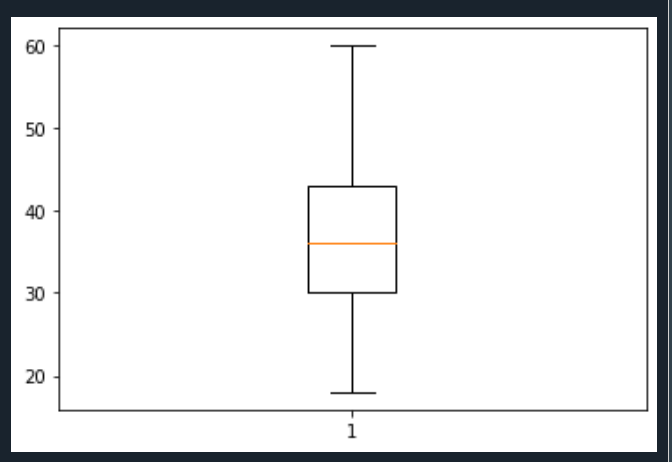
->All the above variables show positive skewness; while Age &Mean\_distance\_from\_home are leptokurtic and all other variables are platykurtic.

OUTLIERS :

There’s no regression found while plotting Age, MonthlyIncome, TotalWorkingYears , YearsAtCompany, etc., on a scatter plot.

box\_plot=data.Age

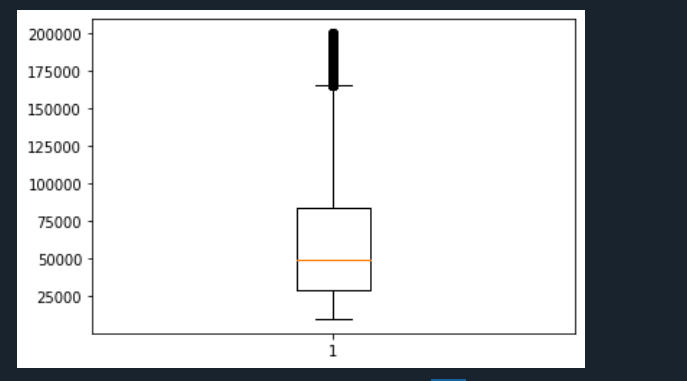
pl.boxplot(box\_plot)



Age is normally distributed without any outliers

box\_plot=data.MonthlyIncome

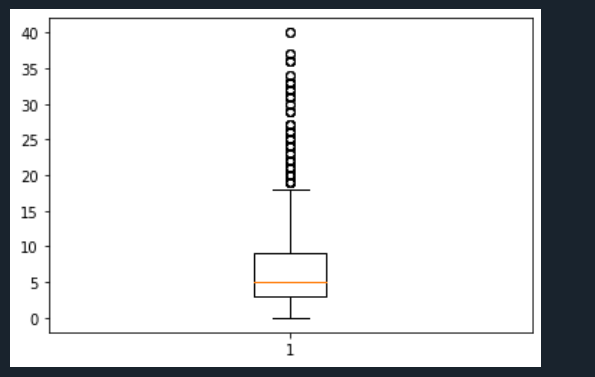
pl.boxplot(box\_plot)



Monthly Income is Right skewed with several outliers

box\_plot=data.YearsAtCompany

pl.boxplot(box\_plot)



Years at company is also Right Skewed with several outliers observed.