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**About this code:**

Below are 4 different codes: Risk Factor, Data Relationships, Statistics, and Trend Prediction. The Risk Factor determines if the person requesting the loan has a high, medium, or low risk of paying back the money to the bank. The Data Relationships show how data relate to one another. The Statistics takes data and develops a plot and cleans out any outliers. The trend prediction plots data and then makes a prediction based off that data for 3 months.

**What does this code do:**

The code below is for the risk factor, takes the data relationship from the BAD and the DELINQ to determine the risk factor for the loan. The plot shows the data relationship between the BAD and DELINQ.

Text

Description automatically generatedChart

Description automatically generated

The following code just depicts the Data Relationship and their plots.

Text

Description automatically generated

Chart, scatter chart

Description automatically generatedChart, scatter chart

Description automatically generatedChart, scatter chart

Description automatically generated

The following is the Statistics code which takes the data of salaries in San Francisco and organizes them within their range. As seen in the plot, the higher data is near the front of the graph reporting the number of people in poverty. It also calculates the mean value and of the salaries.Text

Description automatically generated Text

Description automatically generatedChart, histogram

Description automatically generated

**\*\*\*INSTALL FOLLOWING PYTHON MODULES\*\*\***

import math as m

import numpy as np

import scipy.integrate as integ

import matplotlib.pyplot as plt

from random import randrange

from gekko import GEKKO