95898 Z1 - Introduction To Python
Project Proposal

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This Python project will involve developing a command line application for forecasting purposes. The end user will upload a data file, preferably a *.csv* to begin with, and the module will make predictions for the future. The timeline or the number of predictions into the future will be determined by the user and the dashboard will accept a user input for the same.

The predictions will use time series based algorithms and will be purely for time series based forecasting only. We will begin with Python's Prophet library, a tool designed by Facebook for robust time series based predictions. The project will accept a file from the user in a pre-specified format and generate predictions.

Mandatory Goals

The mandatory goals on this project are:

- A Python module that takes time series data in the format required by Python's Prophet library through the command line
- Accepts user input for number of predictions into the future
- Accepts optional user input for type of growth function to use for predictions - default is linear, alternate is logistic (I made this input mandatory and it doesn't need to be entered through the command line)
- Takes optional user input for confidence intervals - 95% confidence interval is the default - User can specify if he needs an alternate one
- Gives the user predictions into the future both graphically and in the form of a data table

Stretch Goals

The stretch goals are:

- The ability of the package to make predictions using other time series models - ARIMA/SARIMA and ARMA
- The user can generate auto-correlation and partial auto-correlation plots to judge the number of auto-regressive and moving average components