DATA 602: Final Project Part II

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Please give me a full (at least one full page) specification of your proposed project. This is not a software engineering course, so there is no defined format in which it needs to be written, but you may use one (UML, Z notation, etc.) if you wish. The document should be specific enough that I can understand completely the work you will be doing. You should discuss the specifics you will use to create the program or programs. Talk about how the interface will work, how the visualization will be incorporated, and what you will do with the data. You will be, for the most part, bound to this description; this will be the program you write. It will be used as a component to grade your final submission (how well you achieved what you propose). Due 04/19/2016
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ED Stock Analysis

Research Interest

I am interested in stock analysis in general. In this project, I will pick ED (Consolidated Edison) as my study target. Overall, ED is a very nice stock with steady stock price increasing over time and high annual dividend. Although I am not holding any position of ED currently, my past trading experience with ED was very positive. So, this project will help me gain deep understanding about Consolidated Edison.

Data Collection

I will collect data in two different ways:
1) Download history stock price from Google Finance
2) Extract data from company's seasonal earning reports

For this part, I am aiming to extract all desired data information from original data source by writing python code. Manually extracting data will be a backup plan if this task is getting too complicated, especially dealing with seasonal earing reports.

Data Analysis Methods
   1. **Data visualization**

Here I want to see how ED stock price changes over time, how ED stock performs over time by compared to the stock benchmark S&P500, how company metrics and financials data behaved over time, etc. And I will visualize the data by using Matplotlib library.

2. **Statistical analysis**

In this part, I will be more interested in company financial data, such as operation revenues, operation expenses, etc. More specifically, I will compare recent data with the past to see if there is a significant change. And I will use SciPy library here.

3. **Predictive analysis**

For this part, I want to predict the future ED stock price based on the history stock price data and I will do a Monte Carlo simulation to model a value at Risk calculation.

Research Goals

There are two goals for this project. One is to gain more experience with data analysis in Python and get familiar to various python modules, such as Numpy, Pandas, SciPy and Matplotlib. The other is that I am also hoping I will have some ideas about that ED stock long-term and/or short-term investment strategy.