Assignment 1:

Installation

1. To install all the relevant python packages, use the command on the command prompt as ‘pip install –r requirements.txt’ after extracting the zip folder
2. To run the file, on a command prompt type ‘python a1.py’
3. NOTE: Sometimes yahoo finance bugs out and returns an empty dataframe. This is a known bug. Please rerun the program if it does not give a successful run initially.

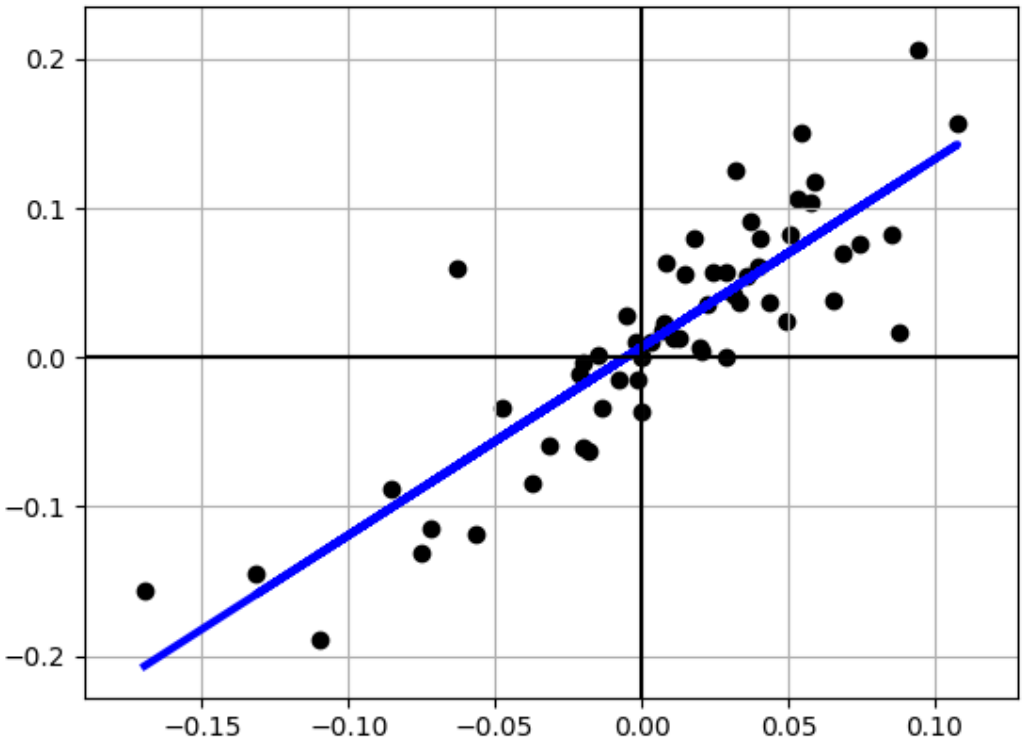
Explanation

1. **Download the historical data of Disney and S&P 500 over that periodCalculate the returns of Disney and the S&P 500 index**

   This has been performed by connecting to Yahoo Finance API and downloading the OHLC values from 2008 to 2013 time period for Disney and S&P500. Then, a monthly returns is calculated using the following:

   ```
   disney_monthly =
   data_disney.asfreq('BM').ffill().pct_change().dropna()
   ```

2. **Using Python, plot the monthly returns on Disney against returns on the S&P 500 index from October 2008 to September 2013**



3. **Find the regression line for Disney return on S&P 500 index. What is the slop of the regression?**

   The regression line is depicted in the above chart. The slope of the regression is:

   Beta (Slope): 1.26087763362

4. **What is the meaning of this value?**

   The slope of the regression corresponds to the beta of the stock, and measures the riskiness of the stock.

5. **What is the Intercept of the Regression?**
   (Intercept): 0.00686875526833

6. **What is the meaning of this value?**

   The intercept of the regression provides a simple measure of performance during the period of the regression, relative to the capital asset pricing model.

7. **Does Disney's stock perform better or worse than expected? Why?**
   The difference between the intercept and Rf (1-b) is Jensen's alpha. If it is positive, your stock did perform better than expected during the period of the regression.
   For Disney, the Jenesen's Alpha was **0.697745428233**, which means that Disney did 0.697% better than expected, per month, between October 2008 and September 2013.

8. **Find the annualized excess return?**
   Annualized Excess Return: 8.70185723732 %

9. **What is the R squared of the regression?**
   R^2: 0.746893521326

10. **What is the significance of this value?**
    The R squared (R2) of the regression provides an estimate of the proportion of the risk (variance) of a firm that can be attributed to market risk. The balance (1 - R2) can be attributed to firm specific risk.

11. **What is Standard Error of Beta Estimate?**
    Standard Error: 0.0972204882593

12. **What is the significance of this value?**
    Regression parameters are always estimated with error. The error is captured in the standard error of the beta estimate, which in the case of Disney is 0.097 percent