Files Explanation:

Raw Data folder: SP500
    Contains: 504 stocks price data in csv
    Obtained by: Downloaddata.py

Python Code folder:
    Downloaddata.py: download the raw data for 504 stocks.
    PCA_pre_data.py: read all adjusting prices for 504 stocks into array,
                Do PCA on the return matrix of 504 stocks.
                Write the result of PCA into csv files.
                Write all data needed for SAS analysis into csv files.

CSV folder: result_from_python:
    Close.csv: contains the adjusting prices for 504 stocks from 2009/03/30 to 2019/04/15.
    sp500.csv: contains the adjusting prices for S&P 500 index from 2009/03/30 to 2019/04/15.
    Eigenvalue.csv&Eigenvector.csv: contains the result of PCA.
    Namelist.csv: contains all stocks names and full names and sectors.
    Return_matrix.csv: contains daily return of all stocks.
    Return_matrix_from_strat.csv: contains return of all stocks from the start date 2009/03/30.
    PC1_sp500:   contains return of the first principal component and S&P500 index from the start date 2009/03/30.

SAS data folder: sas_dataset
    Contains all corresponding dataset from reading csv.

SAS_code:
    Readdata_PCA.sas: read csv files into sas dataset by `proc imported`
    PCA_first.sas: use graphs and tables to analyze the results of PCA.
    Codebook_PCA.sas: act as part of PCA_first.sas, aiming at provide a macro to analyze the ith Principal Component.

SAS_log: The log of 2 SAS code.

SAS_output:
    PCA_output: contains the output from PCA_first.sas