Assignment #3 for teamwork

(Due by 10/2/2023)

Download test assets and risk factors from website
https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html. We need
download following items:

1. **Fama/French 3 Factors daily/monthly data**
2. **Fama/French 5 Factors daily/monthly data**
3. **Momentum Factor daily/monthly data**
4. **25 Portfolios Formed on Size and Book-to-Market (5 x 5) daily/monthly data**
5. **25 Portfolios Formed on Size and Operating Profitability (5 x 5) daily/monthly data**
6. **25 Portfolios Formed on Size and Investment (5 x 5) daily/monthly data**
7. **25 Portfolios Formed on Book-to-Market and Operating Profitability (5 x 5) daily/monthly data**
8. **25 Portfolios Formed on Book-to-Market and Investment (5 x 5) daily/monthly data**
9. **25 Portfolios Formed on Operating Profitability and Investment (5 x 5) daily/monthly data**
10. **48 Industry portfolios daily/monthly data (one industry may need to drop due to missing data)**

A. Using monthly data to run Fama MacBeth two-stage regression to test market model, 3 factor model, five factor model and 6 factor model. Report lambdas and t-stat

B. Using daily data and one year moving window to run Fama MacBeth two-stage regression to test market model, 3 factor model, five factor model and 6 factor model. Report lambdas and t-stat

C. Run an overall regression for part B) to test market model, 3 factor model, five factor model and 6 factor model. In the regression, The dependent variable is the average of one-month ahead excess returns, the independent variables are the averages of all the factor loadings (i.e., the betas). Report the adjusted r-square and plot the average of one-month ahead excess returns against the model predicted returns for

    a. **25 Portfolios Formed on Size and Book-to-Market**
    b. **All portfolios except 48 industry portfolios**
    c. **All portfolios**