

## Instruction

Device :Apple MacBook Pro M2 Ram:8GB

Environment: Anaconda jupyter notebook python version: 3.11.0

Python packages: numpy pandas, math, matplotlib, warnings

Datasets(csv file ):

Data\_set\_1 – Data\_set\_11

Risk\_factors\_1, risk\_factors\_2

security\_reference\_data\_w\_ret1d\_1, security\_reference\_data\_w\_ret1d\_2

feature\_3\_monthly\_quarterly

the data are stored in the file, drag the files and put them with ipython in the same file to run the python code

Prosess:

1,run data processing.ipython

2,run factor classification ability.ipython

3,run synthetic single factor.ipython

4,run construct portfolio.ipython

5,run risk analysis.ipython