

# MSC IN FINANCE

## PRE-TERM COURSE WEEK3:

### Exercises

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Aug 1, 2023

# Exercises

Get access to the historical monthly adjusted close price series of the following stocks, starting from January 2022 to July 2023:

- Tencent Holdings Limited (0700.HK)
- Alibaba Group Holding Limited (9988.HK)
- Meituan (3690.HK)
- HSBC Holdings plc (0005.HK)
- China Construction Bank Corporation (0939.HK)
- Hong Kong Exchanges and Clearing Limited (0388.HK)

(1) Calculate the monthly returns for each stock.

(Optional) (2) Each month, sort the stocks by their monthly returns and identify the stock(s) with the highest monthly return(s).

(Optional) (3) Export the DataFrame of those stock observations with highest monthly returns to a CSV file “stock\_highret.csv”. The DataFrame includes four columns: Year, Month, Stock\_Symbol, Monthly\_Return.

# Instructions

- The price data have been uploaded to our shared folders. The file name is “data\_exercise\_week3.csv”

Google Drive: [https://drive.google.com/drive/folders/16h6r7kQ83mZYFsdZNwximm20Zyq0Jkki?usp=drive\\_link](https://drive.google.com/drive/folders/16h6r7kQ83mZYFsdZNwximm20Zyq0Jkki?usp=drive_link)

Baidu NetDisk link: [https://pan.baidu.com/s/1\\_fbjqg9JrqgzVm9FEO7H5w](https://pan.baidu.com/s/1_fbjqg9JrqgzVm9FEO7H5w) with passcode: 2nu0

- Preview of the input data:  
(Only show first 25 rows here, and the full sample data can be found in shared folder)

	A	B	C	D
1	Year	Month	Stock_Symbol	Adj Close
2	2022	1	0005.HK	51.126
3	2022	2	0005.HK	50.198
4	2022	3	0005.HK	51.775
5	2022	4	0005.HK	46.377
6	2022	5	0005.HK	49.769
7	2022	6	0005.HK	49.339
8	2022	7	0005.HK	47.189
9	2022	8	0005.HK	47.065
10	2022	9	0005.HK	39.947
11	2022	10	0005.HK	38.979
12	2022	11	0005.HK	45.758
13	2022	12	0005.HK	47.017
14	2023	1	0005.HK	56.12
15	2023	2	0005.HK	57.427
16	2023	3	0005.HK	53.11
17	2023	4	0005.HK	56.055
18	2023	5	0005.HK	57.7
19	2023	6	0005.HK	61
20	2023	7	0005.HK	65.2
21	2022	1	0388.HK	425.227
22	2022	2	0388.HK	364.922
23	2022	3	0388.HK	363.393
24	2022	4	0388.HK	330.517
25	2022	5	0388.HK	331.887

- Example output for question 2 and 3:

	A	B	C	D
1	Year	Month	Stock_Symbol	Monthly_Return
2	2022	2	0005.HK	-0.018151234
3	2022	3	9988.HK	0.075815739
4	2022	4	3690.HK	0.105398458
5	2022	5	3690.HK	0.087209302
6	2022	6	9988.HK	0.162597403
7	2022	7	0939.HK	0.027553763
8	2022	8	3690.HK	0.076574022
9	2022	9	0939.HK	-0.06772819
10	2022	10	0005.HK	-0.024232108
11	2022	11	0388.HK	0.464114671
12	2022	12	0700.HK	0.104543924
13	2023	1	9988.HK	0.247536232
14	2023	2	0005.HK	0.02328938
15	2023	3	9988.HK	0.160693642
16	2023	4	0005.HK	0.088024068
17	2023	5	0005.HK	0.027615735
18	2023	6	3690.HK	0.109800363
19	2023	7	9988.HK	0.200738916

# Submission

- Please submit your exercises via the link: <https://forms.gle/xGBvaiBYDNot8GAcA>
- a) When uploading exercises, you need to sign in to Google.
  - b) Put the exercise questions(.ipynb, .py, .markdown, .html, or .pdf) and CSV files into one zip file and rename the zip file with StudentID\_FullName\_Week3.
  - c) The submission deadline is Saturday, Aug 5<sup>th</sup>, at 24:00. Early submission will be regarded as an advantage.
  - d) Only for students who cannot access Google Drive, please submit your exercises via Baidu Netdisk.  
<https://pan.baidu.com/disk/main#/transfer/send?url=ACQAAAAAABEBNQ>