

## Week 5 Exercise: Pandas Joining, merging DataFrame and Plotting

1. Write a Pandas program to append a list of dictionaries or series to an existing DataFrame and display the combined data.

**Student\_detail:**

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

**Dictionary:**

student_id	S6
name	Scarlette Fisher
marks	205

2. Write a Pandas program to join the two given dataframes a long rows and merge with another dataframe along the common column id.

**student\_data1:**

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

**student\_data2:**

	student_id	name	marks
0	S4	Scarlette Fisher	201
1	S5	Carla Williamson	200
2	S6	Dante Morse	198
3	S7	Kaiser William	219
4	S8	Madeeha Preston	201

**exam\_data:**

	student_id	exam_id
0	S1	23
1	S2	45
2	S3	12
3	S4	67
4	S5	21
5	S7	55
6	S8	33
7	S9	14
8	S10	56
9	S11	83
10	S12	88
11	S13	12

3. Write a Pandas program to join the two dataframes using the common column of both dataframes.

**student\_data1:**

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

**student\_data2:**

	student_id	name	marks
0	S4	Scarlette Fisher	201
1	S5	Carla Williamson	200
2	S6	Dante Morse	198
3	S7	Kaiser William	219
4	S8	Madeeha Preston	201

4. Write a Pandas program to join the two dataframes with matching records from both sides where available.

**student\_data1:**

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

**student\_data2:**

	student_id	name	marks
0	S4	Scarlette Fisher	201
1	S5	Carla Williamson	200
2	S6	Dante Morse	198
3	S7	Kaiser William	219
4	S8	Madeeha Preston	201

5. Write a Pandas program to join (left join) the two dataframes using keys from left dataframe only.

**data1:**

	key1	key2	P	Q
0	K0	K0	P0	Q0
1	K0	K1	P1	Q1
2	K1	K0	P2	Q2
3	K2	K1	P3	Q3

**data2:**

	key1	key2	R	S
0	K0	K0	R0	S0
1	K1	K0	R1	S1
2	K1	K0	R2	S2
3	K2	K0	R3	S3

### **Using the Alphabet Dataset Provided on Moodle**

6. Write a Pandas program to create a line plot of the historical stock prices of Alphabet Inc. between two specific dates.
7. Write a Pandas program to create a line plot of the opening, closing stock prices of Alphabet Inc. between two specific dates.
8. Write a Pandas program to create a bar plot of the trading volume of Alphabet Inc. stock between two specific dates.
9. Write a Pandas program to create a bar plot of opening, closing stock prices of Alphabet Inc. between two specific dates.
10. Write a Pandas program to create a stacked bar plot of opening, closing stock prices of Alphabet Inc. between two specific dates.