# Pandas Cheat Sheet: Reshaping data

Date	Open	High	Low	Close	Volume	Dividends	Stock Split	ticker
01/02/2018	65.43502	65.89118	65.35737117	65.60972	1047800	0	0	Α
01/02/2018	53.9422	55.09967	53.79252158	55.04977	2928900	0	0	AA
01/02/2018	60.22431	61.49961	60.18624689	61.25216	436200	0	0	В
01/02/2018	281.8477	283.0294	281.5141014	282.8864	2978900	0	0	BA
01/02/2018	176.399	184.1	175.6999969	183.65	29916900	0	0	BABA
01/03/2018	65.62914	67.44408	65.60972223	67.27908	1698900	0	0	Α
01/03/2018	54.80032	55.02982	52.84459199	54.38124	4100000	0	0	AA
01/03/2018	61.06182	61.52815	60.65257804	60.91906	194800	0	0	В
01/03/2018	282.0287	284.4684	281.5808089	283.8013	3211200	0	0	BA
01/03/2018	185.19	185.635	181.3999939	184	20121900	0	0	BABA
01/04/2018	67.49259	67.76435	66.75496824	66.77438	2230700	0	0	Α
01/04/2018	54.69056	55.30921	53.95716487	54.5808	3555100	0	0	AA
01/04/2018	61.34733	62.18483	61.34732986	61.95642	149100	0	0	В
01/04/2018	283.9347	284.3922	281.5808231	282.7244	4171700	0	0	BA
01/04/2018	185.9	187.747	184.4299927	185.71	19473800	0	0	BABA

## pivot

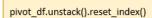
Date	Close	ticker
01/02/2018	65.60972	Α
01/02/2018	55.04977	AA
01/02/2018	61.25216	В
01/02/2018	282.8864	BA
01/02/2018	183.65	BABA
01/03/2018	67.27908	Α
01/03/2018	54.38124	AA
01/03/2018	60.91906	В
01/03/2018	283.8013	BA
01/03/2018	184	BABA
01/04/2018	66.77438	Α
01/04/2018	54.5808	AA
01/04/2018	61.95642	В
01/04/2018	282.7244	BA
01/04/2018	185.71	BABA

df.pivot(index='Date', columns='ticker', values=['Close'])

Close ticker BABA Date 01/02/2018 65.60972 55.04977 61.25216 282.8864 183.65 01/03/2018 67.27908 54.38124 60.91906 283.8013 184 01/04/2018 66.77438 54.5808 61.95642 282.7244 185.71

### unstack

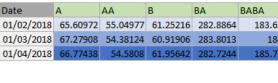
	Α	AA	В	BA	BABA
Date					
01/02/2018	65.60972	55.04977	61.25216	282.8864	183.65
01/03/2018	67.27908	54.38124	60.91906	283.8013	184
01/04/2018	66.77438	54.5808	61.95642	282.7244	185.71



level_0	Date	0
Α	01/02/2018	65.60972
Α	01/03/2018	67.27908
Α	01/04/2018	66.77438
AA	01/02/2018	55.04977
AA	01/03/2018	54.38124
AA	01/04/2018	54.5808
В	01/02/2018	61.25216
В	01/03/2018	60.91906
В	01/04/2018	61.95642
BA	01/02/2018	282.8864
BA	01/03/2018	283.8013
BA	01/04/2018	282.7244
BABA	01/02/2018	183.65
BABA	01/03/2018	184
BABA	01/04/2018	185.71

#### melt

	Date	Α	AA	В	ВА	BABA
	01/02/2018	65.60972	55.04977	61.25216	282.8864	183.
	01/03/2018	67.27908	54.38124	60.91906	283.8013	1
	01/04/2018	66.77438	54.5808	61.95642	282.7244	185.
ľ						



# pd.melt(pivot\_df, id\_vars=['Date'],

value\_vars=['A', 'AA', 'B', 'BA', 'BABA'], var\_name = 'ticker',

value\_name='Close'

Date	ticker	Close
01/02/2018	Α	65.6097
01/03/2018	Α	67.2790
01/04/2018	Α	66.7743
01/02/2018	AA	55.0497
01/03/2018	AA	54.3812
01/04/2018	AA	54.580
01/02/2018	В	61.2521
01/03/2018	В	60.9190
01/04/2018	В	61.9564
01/02/2018	BA	282.886
01/03/2018	BA	283.801
01/04/2018	BA	282.724

01/02/2018 BABA

01/03/2018 BABA

01/04/2018 BABA

183.65

185.71

184

pd.melt(pivot\_df, id vars=['Date'], value\_vars=['A', 'AA', 'B', 'BA', 'BABA'], var name = 'ticker', value name='Close' ).sort\_values(by='Date')

Date	ticker	Close
01/02/2018	Α	65.60972
01/02/2018	AA	55.04977
01/02/2018	В	61.25216
01/02/2018	BA	282.8864
01/02/2018	BABA	183.65
01/03/2018	Α	67.27908
01/03/2018	AA	54.38124
01/03/2018	В	60.91906
01/03/2018	BA	283.8013
01/03/2018	BABA	184
01/04/2018	Α	66.77438
01/04/2018	AA	54.5808
01/04/2018	В	61.95642
01/04/2018	ВА	282.7244
01/04/2018	BABA	185.71

#### stack

Open Close Date 01/02/2018 65.43502 65.60972 01/03/2018 65.62914 67.27908 01/04/2018 67.49259 66.77438



Date		
01/02/2018	Open	65.43502
	Close	65.60972
01/03/2018	Open	65.62914
	Close	67.27908
01/04/2018	Open	67.49259
	Close	66 77438

df\_for\_stack[ ['Open' ,'Close']].stack()

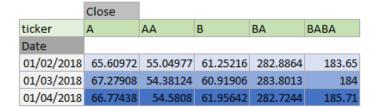
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01/04/2018	54.69056	55.30921	53.95716487	54.5808	3555100	0	0	AA
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01/04/2018	185.9	187.747	184.4299927	185.71	19473800	0	0	BABA

Date	Close	ticker
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01/02/2018	61.25216	В
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01/03/2018	67.27908	Α
01/03/2018	54.38124	AA
01/03/2018	60.91906	В
01/03/2018	283.8013	BA
01/03/2018	184	BABA
01/04/2018	66.77438	Α
01/04/2018	54.5808	AA
01/04/2018	61.95642	В
01/04/2018	282.7244	BA
01/04/2018	185.71	BABA

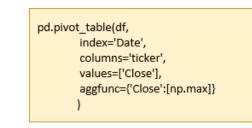
#### pivot

df.pivot(index='Date', columns='ticker', values=['Close'])



## pivot\_table





	Close				
	amax				
ticker	Α	AA	В	BA	BABA
Date					
01/02/2018	65.60971832	55.04977	61.25216	282.8864	183.65
01/03/2018	67.27908325	54.38124	60.91906	283.8013	184
01/04/2018	66.77438354	54.5808	61.95642	282.7244	185.71

pd.pivot_table(df,
index='Date',
values=['Close', 'High'],
aggfunc={'Close':[np.mean, np.std],
'High':[np.min]
}
)

	Close		High
	mean	std	amin
Date			
01/02/2018	129.6896	100.923245	55.09967
01/03/2018	130.0761	101.236219	55.02982
01/04/2018	130.3492	100.924734	55.30921