

```
In [34]: import pandas as pd
import matplotlib.pyplot as plt
```

```
In [2]: data = pd.read_csv("air_quality_long.csv")
```

```
In [3]: data.head()
```

```
Out[3]:
```

	city	country	date.utc	location	parameter	value	unit
0	Antwerpen	BE	2019-06-18 06:00:00+00:00	BETR801	pm25	18.0	µg/m³
1	Antwerpen	BE	2019-06-17 08:00:00+00:00	BETR801	pm25	6.5	µg/m³
2	Antwerpen	BE	2019-06-17 07:00:00+00:00	BETR801	pm25	18.5	µg/m³
3	Antwerpen	BE	2019-06-17 06:00:00+00:00	BETR801	pm25	16.0	µg/m³
4	Antwerpen	BE	2019-06-17 05:00:00+00:00	BETR801	pm25	7.5	µg/m³

## How to reshape the layout of tables

```
In [4]: data = pd.read_csv("air_quality_long.csv", index_col="date.utc", parse_dates=True)
```

```
In [42]: data.head()
```

```
Out[42]:
```

	city	country	location	parameter	value	unit
	date.utc					
	2019-06-18 06:00:00+00:00	Antwerpen	BE	BETR801	pm25	18.0 µg/m³
	2019-06-17 08:00:00+00:00	Antwerpen	BE	BETR801	pm25	6.5 µg/m³
	2019-06-17 07:00:00+00:00	Antwerpen	BE	BETR801	pm25	18.5 µg/m³
	2019-06-17 06:00:00+00:00	Antwerpen	BE	BETR801	pm25	16.0 µg/m³
	2019-06-17 05:00:00+00:00	Antwerpen	BE	BETR801	pm25	7.5 µg/m³

```
In [49]: data = pd.read_csv("titanic.csv")
data.head()
```

```
Out[49]:
```

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	NaN	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	NaN	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	NaN	S

## How to combine data from multiple tables

```
In [15]: selected_columns=data2[["Sex", "Age"]]
selected_columns.head()
```

```
Out[15]:
```

	Sex	Age
0	male	22.0
1	female	38.0
2	female	26.0
3	female	35.0
4	male	35.0

```
In [23]: data3 = pd.concat([data2, selected_columns], axis=0)
data3.head()
```

Out[23]:	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1.0	0.0	3.0	Braund, Mr. Owen Harris	male	22.0	1.0	0.0	A/5 21171	7.2500	NaN	S
1	2.0	1.0	1.0	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1.0	0.0	PC 17599	71.2833	C85	C
2	3.0	1.0	3.0	Heikkinen, Miss. Laina	female	26.0	0.0	0.0	STON/O2. 3101282	7.9250	NaN	S
3	4.0	1.0	1.0	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1.0	0.0	113803	53.1000	C123	S
4	5.0	0.0	3.0	Allen, Mr. William Henry	male	35.0	0.0	0.0	373450	8.0500	NaN	S

if we want to concat two columns then show only one column values

- axis=0 is often associated with operations along rows, vertically stacking, or concatenating along the rows.
- axis=1 is often associated with operations along columns or horizontally concatenating along columns.

```
In [31]: data4= pd.concat([data2,data],axis=0)
data4.head()
```

Out[31]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked	city	country	location	parameter	value
0	1.0	0.0	3.0	Braund, Mr. Owen Harris	male	22.0	1.0	0.0	A/5 21171	7.2500	NaN	S	NaN	NaN	NaN	NaN	
1	2.0	1.0	1.0	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1.0	0.0	PC 17599	71.2833	C85	C	NaN	NaN	NaN	NaN	
2	3.0	1.0	3.0	Heikkinen, Miss. Laina	female	26.0	0.0	0.0	STON/O2. 3101282	7.9250	NaN	S	NaN	NaN	NaN	NaN	
3	4.0	1.0	1.0	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1.0	0.0	113803	53.1000	C123	S	NaN	NaN	NaN	NaN	
4	5.0	0.0	3.0	Allen, Mr. William Henry	male	35.0	0.0	0.0	373450	8.0500	NaN	S	NaN	NaN	NaN	NaN	

In [ ]:

In [ ]:

In [ ]: