

KEY_Practice10_Pandas-Intro

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1 Practice: Intro to Pandas

First we need to import the pandas package. Let's give it the same special nickname we used before.

```
[2]: # import the pandas package with the nickname pd

import pandas as pd
```

Now we'll create a DataFrame. Modify this cell to save it to a variable called `car_data`.

```
[4]: # save the DataFrame to a variable
car_data = pd.DataFrame({'acceleration': [12.0,11.5,11.0,12.0,10.5,10.0,9.0,8.
↳5,10.0,8.5,10.0,8.0,9.5,10.0,15.0,15.5,15.5,16.0,14.5,20.5],
'cylinders': [8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 4, 6, 6, 6, 4, 4],
'displacement': [307.0,350.0,318.0,304.0,302.0,429.0,454.0,440.0,455.0,390.
↳0,383.0,340.0,400.0,455.0,113.0,198.0,199.0,200.0,97.0,97.0],
'horsepower': [130.0,165.0,150.0,150.0,140.0,198.0,220.0,215.0,225.0,190.0,170.
↳0,160.0,150.0,225.0,95.0,95.0,97.0,85.0,88.0,46.0],
'model_year': [70,70,70,70,70,70,70,70,70,70,70,70,70,70,70,70,70,70,70,70],
'mpg': [18.0,15.0,18.0,16.0,17.0,15.0,14.0,14.0,14.0,15.0,15.0,14.0,15.0,14.
↳0,24.0,22.0,18.0,21.0,27.0,26.0],
'name': ['chevrolet chevelle malibu','buick skylark 320','plymouth_
↳satellite','amc rebel sst','ford torino','ford galaxie 500','chevrolet_
↳impala','plymouth fury iii','pontiac catalina','amc ambassador dpl','dodge_
↳challenger se','plymouth cuda 340','chevrolet monte carlo','buick estate_
↳wagon (sw)','toyota corona mark ii','plymouth duster','amc hornet','ford_
↳maverick','datsun pl510','volkswagen 1131 deluxe sedan'],
'origin':_
↳['usa','usa','usa','usa','usa','usa','usa','usa','usa','usa','usa','usa','usa','usa','usa','usa','japan'],
'weight':_
↳[3504,3693,3436,3433,3449,4341,4354,4312,4425,3850,3563,3609,3761,3086,2372,2833,2774,2587,
```

Now explore the `car_data` DataFrame. View the first few rows:

```
[5]: # view the first 5 rows
      car_data.head(5)
```

```
[5]: acceleration  cylinders  displacement  horsepower  model_year  mpg  \
0          12.0           8          307.0         130.0           70  18.0
1          11.5           8          350.0         165.0           70  15.0
2          11.0           8          318.0         150.0           70  18.0
3          12.0           8          304.0         150.0           70  16.0
4          10.5           8          302.0         140.0           70  17.0
```

```

           name origin  weight
0  chevrolet chevelle malibu    usa   3504
1         buick skylark 320     usa   3693
2    plymouth satellite     usa   3436
3         amc rebel sst       usa   3433
4         ford torino        usa   3449
```

```
[6]: # view the first 10 rows
```

```
car_data.head(10)
```

```
[6]: acceleration  cylinders  displacement  horsepower  model_year  mpg  \
0          12.0           8          307.0         130.0           70  18.0
1          11.5           8          350.0         165.0           70  15.0
2          11.0           8          318.0         150.0           70  18.0
3          12.0           8          304.0         150.0           70  16.0
4          10.5           8          302.0         140.0           70  17.0
5          10.0           8          429.0         198.0           70  15.0
6           9.0           8          454.0         220.0           70  14.0
7           8.5           8          440.0         215.0           70  14.0
8          10.0           8          455.0         225.0           70  14.0
9           8.5           8          390.0         190.0           70  15.0
```

```

           name origin  weight
0  chevrolet chevelle malibu    usa   3504
1         buick skylark 320     usa   3693
2    plymouth satellite     usa   3436
3         amc rebel sst       usa   3433
4         ford torino        usa   3449
5         ford galaxie 500     usa   4341
6         chevrolet impala     usa   4354
7    plymouth fury iii       usa   4312
8         pontiac catalina     usa   4425
9    amc ambassador dpl      usa   3850
```

What does the end of the DataFrame look like? Try viewing the last few rows:

```
[7]: # view the last 5 rows
```

```
car_data.tail(5)
```

```
[7]: acceleration  cylinders  displacement  horsepower  model_year  mpg  \
15          15.5           6          198.0         95.0           70  22.0
```

16	15.5	6	199.0	97.0	70	18.0
17	16.0	6	200.0	85.0	70	21.0
18	14.5	4	97.0	88.0	70	27.0
19	20.5	4	97.0	46.0	70	26.0

	name	origin	weight
15	plymouth duster	usa	2833
16	amc hornet	usa	2774
17	ford maverick	usa	2587
18	datsum pl510	japan	2130
19	volkswagen 1131 deluxe sedan	europa	1835

What happens when you call head or tail without putting a number between the parentheses?

[8]: *# try using head without a number*

```
car_data.head()
```

[8]:

	acceleration	cylinders	displacement	horsepower	model_year	mpg	\
0	12.0	8	307.0	130.0	70	18.0	
1	11.5	8	350.0	165.0	70	15.0	
2	11.0	8	318.0	150.0	70	18.0	
3	12.0	8	304.0	150.0	70	16.0	
4	10.5	8	302.0	140.0	70	17.0	

	name	origin	weight
0	chevrolet chevelle malibu	usa	3504
1	buick skylark 320	usa	3693
2	plymouth satellite	usa	3436
3	amc rebel sst	usa	3433
4	ford torino	usa	3449

[9]: *# try using tail without a number*

```
car_data.tail()
```

[9]:

	acceleration	cylinders	displacement	horsepower	model_year	mpg	\
15	15.5	6	198.0	95.0	70	22.0	
16	15.5	6	199.0	97.0	70	18.0	
17	16.0	6	200.0	85.0	70	21.0	
18	14.5	4	97.0	88.0	70	27.0	
19	20.5	4	97.0	46.0	70	26.0	

	name	origin	weight
15	plymouth duster	usa	2833
16	amc hornet	usa	2774
17	ford maverick	usa	2587
18	datsum pl510	japan	2130
19	volkswagen 1131 deluxe sedan	europa	1835

What do the rows of the DataFrame represent?

Answers: Different types of cars

What measurements or observations do we have about the data?

Answer: acceleration, cylinder count, engine displacement, horsepower, model year, mpg, name, country of origin, and weight

What types of variables are in each of the columns?

- **acceleration:** float
- **cylinders:** int
- **displacement:** float
- **horsepower:** float
- **model_year:** int
- **mpg:** float
- **name:** string
- **origin:** string
- **weight:** int