

practiceYBI2.ipynb - Collaborator

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import pandas as pd

[] mpg = pd.read_csv('https://github.com/YBI-Foundation/Dataset/raw/main/MPG.csv')

[] mpg

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	name
0	18.0	8	307.0	130.0	3504	12.0	70	usa	chevrolet chevelle malibu
1	15.0	8	350.0	165.0	3693	11.5	70	usa	buick skylark 320
2	18.0	8	318.0	150.0	3436	11.0	70	usa	plymouth satellite
3	16.0	8	304.0	150.0	3433	12.0	70	usa	amc rebel sst
4	17.0	8	302.0	140.0	3449	10.5	70	usa	ford torino
...
393	27.0	4	140.0	86.0	2790	15.6	82	usa	ford mustang gl
394	44.0	4	97.0	52.0	2130	24.6	82	europa	vw pickup
395	32.0	4	135.0	84.0	2295	11.6	82	usa	dodge rampage
396	28.0	4	120.0	79.0	2625	18.6	82	usa	ford ranger
397	31.0	4	119.0	82.0	2720	19.4	82	usa	chevy s-10

398 rows x 9 columns

HP Audio Switch

Speakers Microphones

☒ Internal Speaker

☐ Audio Control

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[] car = mpg.copy()

car

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	name
0	18.0	8	307.0	130.0	3504	12.0	70	usa	chevrolet chevelle malibu
1	15.0	8	350.0	165.0	3693	11.5	70	usa	buick sky/ark 320
2	18.0	8	318.0	150.0	3436	11.0	70	usa	plymouth satellite
3	16.0	8	304.0	150.0	3433	12.0	70	usa	amc rebel sst
4	17.0	8	302.0	140.0	3449	10.5	70	usa	ford torino
...
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396	28.0	4	120.0	79.0	2625	18.6	82	usa	ford ranger
397	31.0	4	119.0	82.0	2720	19.4	82	usa	chevy s-10

398 rows x 9 columns

[] mpg = mpg.drop('cylinders', axis = 1)

[] mpg.columns

```
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[ ] Index(['mpg', 'displacement', 'horsepower', 'weight', 'acceleration',
          'model_year', 'origin', 'name'],
          dtype='object')

[ ] car.columns

Index(['mpg', 'cylinders', 'displacement', 'horsepower', 'weight',
          'acceleration', 'model_year', 'origin', 'name'],
          dtype='object')

[ ] car.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 398 entries, 0 to 397
Data columns (total 9 columns):
#   Column          Non-Null Count  Dtype
---  --
0   mpg              398 non-null    float64
1   cylinders         398 non-null    int64
2   displacement      398 non-null    float64
3   horsepower        392 non-null    float64
4   weight            398 non-null    int64
5   acceleration      398 non-null    float64
6   model_year        398 non-null    int64
7   origin            398 non-null    object
8   name              398 non-null    object
dtypes: float64(4), int64(3), object(2)
memory usage: 28.1+ KB

[ ] car.describe()
```

```
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[ ]
      mpg  cylinders  displacement  horsepower  weight  acceleration  model_year
count  398.000000  398.000000    398.000000    392.000000  398.000000    398.000000    398.000000
mean    23.514573    5.454774    193.425879    104.469388    2970.424623    15.568090    76.010050
std     7.815984    1.701004    104.269838    38.491160    846.841774    2.757689    3.697627
min     9.000000    3.000000    68.000000    46.000000    1613.000000    8.000000    70.000000
25%    17.500000    4.000000    104.250000    75.000000    2223.750000    13.825000    73.000000
50%    23.000000    4.000000    148.500000    93.500000    2803.500000    15.500000    76.000000
75%    29.000000    8.000000    262.000000    126.000000    3608.000000    17.175000    79.000000
max    46.600000    8.000000    455.000000    230.000000    5140.000000    24.800000    82.000000

[ ] car[['cylinders', 'origin']].value_counts()

cylinders  origin
8          usa    103
6          usa    74
4          usa    72
           japan    69
           europe    63
6          japan    6
3          japan    4
6          europe    4
5          europe    3
dtype: int64

[ ] car[['origin']].value_counts()
```

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```
[ ] car['origin'].unique()

array(['usa', 'japan', 'europe'], dtype=object)

[ ] car['origin'].nunique()

3

[ ] car.sort_values('displacement')
```

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	name
117	29.0	4	68.0	49.0	1867	19.5	73	europe	fiat 128
71	19.0	3	70.0	97.0	2330	13.5	72	japan	mazda rx2 coupe
111	18.0	3	70.0	90.0	2124	13.5	73	japan	maxda rx3
334	23.7	3	70.0	100.0	2420	12.5	80	japan	mazda rx-7 gs
131	32.0	4	71.0	65.0	1836	21.0	74	japan	toyota corolla 1200
...
94	13.0	8	440.0	215.0	4735	11.0	73	usa	chrysler new yorker brougham

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	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	name
117	29.0	4	68.0	49.0	1867	19.5	73	europe	fiat 128
71	19.0	3	70.0	97.0	2330	13.5	72	japan	mazda rx2 coupe
111	18.0	3	70.0	90.0	2124	13.5	73	japan	maxda rx3
334	23.7	3	70.0	100.0	2420	12.5	80	japan	mazda rx-7 gs
131	32.0	4	71.0	65.0	1836	21.0	74	japan	toyota corolla 1200
...
94	13.0	8	440.0	215.0	4735	11.0	73	usa	chrysler new yorker brougham

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```
[ ] 8 14.0 8 455.0 225.0 4425 10.0 70 usa pontiac catalina
13 14.0 8 455.0 225.0 3086 10.0 70 usa buick estate wagon (sw)

398 rows x 9 columns
```

```
car.sort_values('displacement', ascending = False)
```

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	name
8	14.0	8	455.0	225.0	4425	10.0	70	usa	pontiac catalina
95	12.0	8	455.0	225.0	4951	11.0	73	usa	buick electra 225 custom
13	14.0	8	455.0	225.0	3086	10.0	70	usa	buick estate wagon (sw)
6	14.0	8	454.0	220.0	4354	9.0	70	usa	chevrolet impala
7	14.0	8	440.0	215.0	4312	8.5	70	usa	plymouth fury iii
...
131	32.0	4	71.0	65.0	1836	21.0	74	japan	toyota corolla 1200
111	18.0	3	70.0	90.0	2124	13.5	73	japan	maxda rx3
71	19.0	3	70.0	97.0	2330	13.5	72	japan	mazda rx2 coupe
334	23.7	3	70.0	100.0	2420	12.5	80	japan	mazda rx-7 gs
117	29.0	4	68.0	49.0	1867	19.5	73	europe	fiat 128

398 rows x 9 columns

```
[ ] car.sort_values(['displacement', 'weight'], ascending = False)
```

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	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	name
95	12.0	8	455.0	225.0	4951	11.0	73	usa	buick electra 225 custom
8	14.0	8	455.0	225.0	4425	10.0	70	usa	pontiac catalina
13	14.0	8	455.0	225.0	3086	10.0	70	usa	buick estate wagon (sw)
6	14.0	8	454.0	220.0	4354	9.0	70	usa	chevrolet impala
94	13.0	8	440.0	215.0	4735	11.0	73	usa	chrysler new yorker brougham
...
53	31.0	4	71.0	65.0	1773	19.0	71	japan	toyota corolla 1200
334	23.7	3	70.0	100.0	2420	12.5	80	japan	mazda rx-7 gs
71	19.0	3	70.0	97.0	2330	13.5	72	japan	mazda rx2 coupe
111	18.0	3	70.0	90.0	2124	13.5	73	japan	maxda rx3
117	29.0	4	68.0	49.0	1867	19.5	73	europe	fiat 128

398 rows x 9 columns

```
[ ] car.describe(include = 'all')
```

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	name
count	398.000000	398.000000	398.000000	392.000000	398.000000	398.000000	398.000000	398	398
unique	NaN	NaN	NaN	NaN	NaN	NaN	NaN	3	305
top	NaN	NaN	NaN	NaN	NaN	NaN	NaN	usa	ford ninto

	unique	NaN	NaN	NaN	NaN	NaN	NaN	NaN	3	305
	top	NaN	NaN	NaN	NaN	NaN	NaN	NaN	usa	ford pinto
	freq	NaN	NaN	NaN	NaN	NaN	NaN	NaN	249	6
	mean	23.514573	5.454774	193.425879	104.469388	2970.424623	15.568090	76.010050	NaN	NaN
	std	7.815984	1.701004	104.269838	38.491160	846.841774	2.757689	3.697627	NaN	NaN
	min	9.000000	3.000000	68.000000	46.000000	1613.000000	8.000000	70.000000	NaN	NaN
	25%	17.500000	4.000000	104.250000	75.000000	2223.750000	13.825000	73.000000	NaN	NaN
	50%	23.000000	4.000000	148.500000	93.500000	2803.500000	15.500000	76.000000	NaN	NaN
	75%	29.000000	8.000000	262.000000	126.000000	3608.000000	17.175000	79.000000	NaN	NaN
	max	46.600000	8.000000	455.000000	230.000000	5140.000000	24.800000	82.000000	NaN	NaN

	0	1	2	3	4	5	6	7	8	9	...	388	389	390	391	392	393	394	395	396	39
mpg	18.0	15.0	18.0	16.0	17.0	15.0	14.0	14.0	14.0	15.0	...	26.0	22.0	32.0	36.0	27.0	27.0	44.0	32.0	28.0	31.
cylinders	8	8	8	8	8	8	8	8	8	8	...	4	6	4	4	4	4	4	4	4	4
displacement	307.0	350.0	318.0	304.0	302.0	429.0	454.0	440.0	455.0	390.0	...	156.0	232.0	144.0	135.0	151.0	140.0	97.0	135.0	120.0	119.
horsepower	130.0	165.0	150.0	150.0	140.0	198.0	220.0	215.0	225.0	190.0	...	92.0	112.0	96.0	84.0	90.0	86.0	52.0	84.0	79.0	82.
weight	3504	3693	3436	3433	3449	4341	4354	4312	4425	3850	...	2585	2835	2665	2370	2950	2790	2130	2295	2625	272
acceleration	12.0	11.5	11.0	12.0	10.5	10.0	9.0	8.5	10.0	8.5	...	14.5	14.7	13.9	13.0	17.3	15.6	24.6	11.6	18.6	19.

	displacement	307.0	350.0	318.0	304.0	302.0	429.0	454.0	440.0	455.0	390.0	...	156.0	232.0	144.0	135.0	151.0	140.0	97.0	135.0	120.0	119.
	horsepower	130.0	165.0	150.0	150.0	140.0	198.0	220.0	215.0	225.0	190.0	...	92.0	112.0	96.0	84.0	90.0	86.0	52.0	84.0	79.0	82.
	weight	3504	3693	3436	3433	3449	4341	4354	4312	4425	3850	...	2585	2835	2665	2370	2950	2790	2130	2295	2625	272
	acceleration	12.0	11.5	11.0	12.0	10.5	10.0	9.0	8.5	10.0	8.5	...	14.5	14.7	13.9	13.0	17.3	15.6	24.6	11.6	18.6	19.
	model_year	70	70	70	70	70	70	70	70	70	70	...	82	82	82	82	82	82	82	82	82	8
	origin	usa	usa	usa	usa	usa	usa	usa	usa	usa	usa	...	usa	usa	japan	usa	usa	usa	usa	usa	usa	us
	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	...	chrysler lebaron medallion	ford granada l	toyota celica gt	dodge charger 2.2	chevrolet camaro	ford mustang gl	vw pickup	dodge rampage	ford ranger	chev s-1

9 rows x 398 columns