

Dplyr Exercises

Perform the following operations using only the *dplyr* library. We will be reviewing the following operations:

- `filter()` (and `slice()`)
- `arrange()`
- `select()` (and `rename()`)
- `distinct()`
- `mutate()` (and `transmute()`)
- `summarise()`
- `sample_n()` and `sample_frac()`

```
In [6]: library(dplyr)
```

We will use the `mtcars` dataframe for this exercise!

```
In [9]: head(mtcars)
```

Out[9]:

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21	6	160	110	3.9	2.62	16.46	0	1	4	4
Mazda RX4 Wag	21	6	160	110	3.9	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.32	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.44	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.46	20.22	1	0	3	1

Return rows of cars that have an mpg value greater than 20 and 6 cylinders.

```
In [8]:
```

Out[8]:

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
1	21	6	160	110	3.9	2.62	16.46	0	1	4	4
2	21	6	160	110	3.9	2.875	17.02	0	1	4	4
3	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1

Reorder the Data Frame by `cyl` first, then by descending `wt`.

In [14]:

Out[14]:

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
1	24.4	4	146.7	62	3.69	3.19	20	1	0	4	2
2	22.8	4	140.8	95	3.92	3.15	22.9	1	0	4	2
3	21.4	4	121	109	4.11	2.78	18.6	1	1	4	2
4	21.5	4	120.1	97	3.7	2.465	20.01	1	0	3	1
5	22.8	4	108	93	3.85	2.32	18.61	1	1	4	1
6	32.4	4	78.7	66	4.08	2.2	19.47	1	1	4	1

Select the columns mpg and hp

In [13]:

Out[13]:

	mpg	hp
Mazda RX4	21	110
Mazda RX4 Wag	21	110
Datsun 710	22.8	93
Hornet 4 Drive	21.4	110
Hornet Sportabout	18.7	175
Valiant	18.1	105

Select the distinct values of the gear column.

In [17]:

Out[17]:

	gear
1	4
2	3
3	5

Create a new column called "Performance" which is calculated by hp divided by wt.

In [19]:

Out[19]:

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb	Performance
1	21	6	160	110	3.9	2.62	16.46	0	1	4	4	41.98473
2	21	6	160	110	3.9	2.875	17.02	0	1	4	4	38.26087
3	22.8	4	108	93	3.85	2.32	18.61	1	1	4	1	40.08621
4	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1	34.21462
5	18.7	8	360	175	3.15	3.44	17.02	0	0	3	2	50.87209
6	18.1	6	225	105	2.76	3.46	20.22	1	0	3	1	30.34682

Find the mean mpg value using dplyr.

In [20]:

Out[20]:

	avg_mpg
1	20.09062

Use pipe operators to get the mean hp value for cars with 6 cylinders.

In [22]:

Out[22]:

	std_hp
1	24.26049

Great Job!