Question #1:

Based on the example above, replace NaN in "stroke" column with the mean value.

[32]:
```
# Write your code below and press Shift+Enter to execute
avg_stroke = df["stroke"].astype("float").mean(axis = 0)
print("Average of stroke:", avg_stroke)
```

```
Average of stroke: 3.256903553299492
```

[33]:
```
df["stroke"].replace(np.nan, avg_stroke, inplace = True)
```

Question #2:

According to the example above, transform mpg to L/100km in the column of "highway-mpg" and change the name of column to "highway-L/100km".

[34]:
```
# Write your code below and press Shift+Enter to execute

df["highway-mpg"] = 235/df["highway-mpg"]
```

[35]:
```
df.rename(columns={'highway-mpg':'highway-L/100km'}, inplace=True)
```

[36]:
```
df.head()
```

[36]:

	symboling	normalized-losses	make	fuel-type	aspiration	num-of-doors	body-style	drive-wheels	engine-location	wheel-base	...	fuel-system	bore
0	3	122	alfa-romero	gas	std	two	convertible	rwd	front	88.6	...	mpfi	3.47
1	3	122	alfa-romero	gas	std	two	convertible	rwd	front	88.6	...	mpfi	3.47
2	1	122	alfa-romero	gas	std	two	hatchback	rwd	front	94.5	...	mpfi	2.68
3	2	164	audi	gas	std	four	sedan	fwd	front	99.8	...	mpfi	3.19
4	2	164	audi	gas	std	four	sedan	4wd	front	99.4	...	mpfi	3.19

5 rows × 27 columns

Question #3:

According to the example above, normalize the column "height".

[38]:
```
# Write your code below and press Shift+Enter to execute

df['height'] = df['height']/df['height'].max()
```

[39]:
```
df[["length","width","height"]].head()
```

[39]:

	length	width	height
0	0.811148	0.890278	0.816054
1	0.811148	0.890278	0.816054
2	0.822681	0.909722	0.876254
3	0.848630	0.919444	0.908027
4	0.848630	0.922222	0.908027

Question #4:

Similar to before, create an indicator variable for the column "aspiration"

[53]:
```
# Write your code below and press Shift+Enter to execute

dummy_variable_2 = pd.get_dummies(df['aspiration'])
```

[54]:
```
dummy_variable_2.head()
```

[54]:

	std	turbo
0	1	0
1	1	0
2	1	0
3	1	0
4	1	0

Question #5:

Merge the new dataframe to the original dataframe, then drop the column 'aspiration'.

[55]:
```
# Write your code below and press Shift+Enter to execute

df = pd.concat([df, dummy_variable_2], axis=1)
df.drop('aspiration', axis = 1, inplace=True)
```