▾ Exam 1, part 2

Provide code below and answer the following questions here:

- Q2: Number of Toyota cars priced above USD 8,000 is 22
- Q3: Average city-mpg for hatchback cars is 26.6

Include plots for Questions 1, 4, and 5.

PS: Don't forget to change the name of the file.

```
import pandas as pd
from matplotlib import pyplot as plt
%matplotlib inline
```

```
df = pd.read_csv('http://lidicky.name/DS201/Automobile_price_data_clean-f18.csv')
```
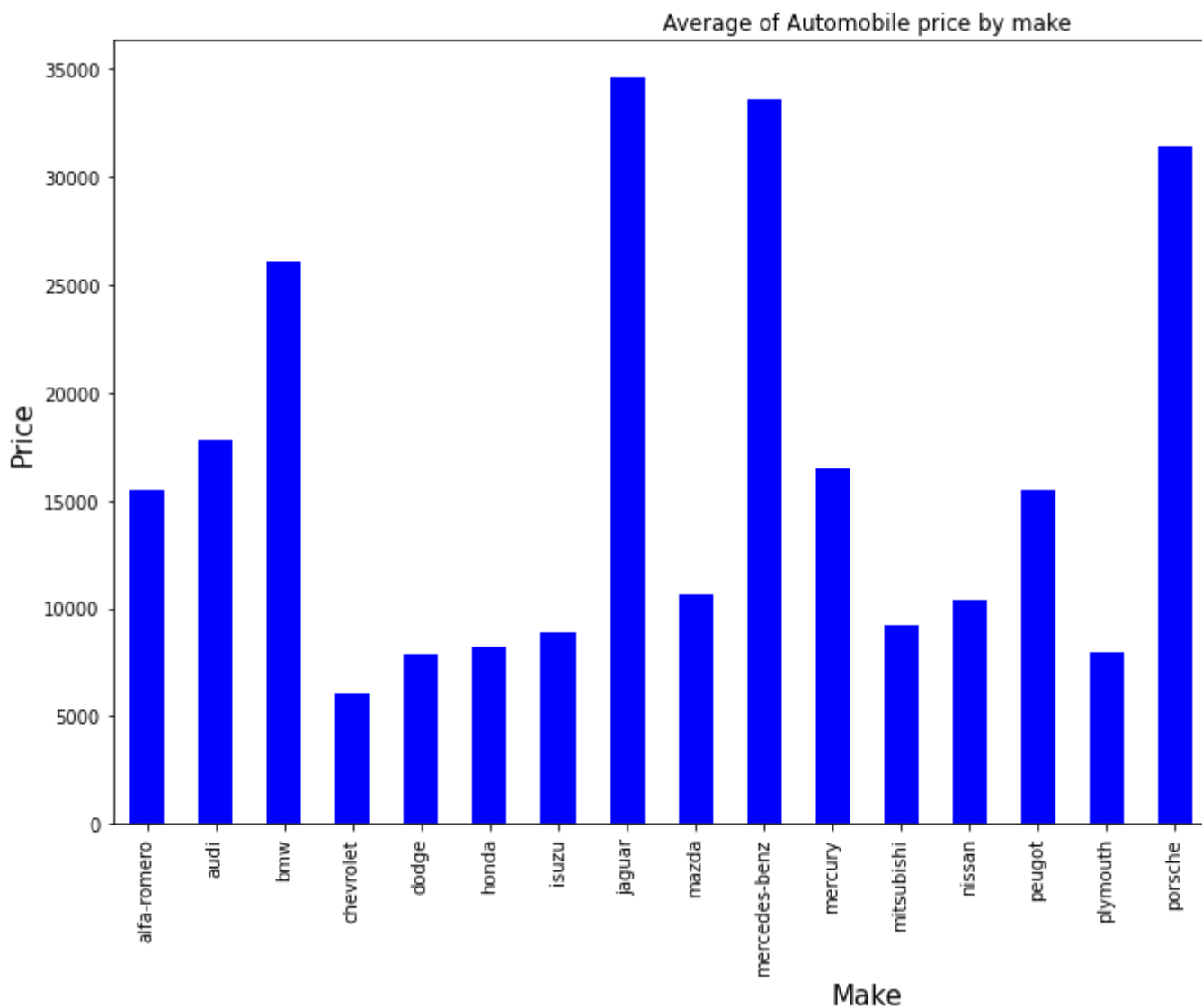
▾ QUESTION 1

```
data = df.groupby(['make']).price.mean()
data.head(50)
```

```
make
alfa-romero      15498.333333
audi             17859.166667
bmw              26118.750000
chevrolet         6007.000000
dodge             7875.444444
honda             8184.692308
isuzu             8916.500000
jaguar           34600.000000
mazda            10652.882353
mercedes-benz    33647.000000
mercury          16503.000000
mitsubishi        9239.769231
nissan           10415.666667
peugot           15489.090909
plymouth          7963.428571
porsche          31400.500000
renault           9595.000000
saab             15223.333333
subaru            8541.250000
toyota            9885.812500
volkswagen       10077.500000
volvo            18063.181818
Name: price, dtype: float64
```

```
chart = data.plot(kind='bar', title = 'Average of Automobile price by make', figsize=
chart.set_xlabel('Make', fontsize=15)
chart.set_ylabel ('Price', fontsize = 15)
```

```
Text(0, 0.5, 'Price')
```


QUESTION 2

```
df.loc[(df['make']=='toyota') & (df['price']>8000)]
```

	make	fuel-type	aspiration	num-of-doors	body-style	drive-wheels	engine-location	wheel-base	length	v
62	toyota	gas	std	two	sedan	rwd	front	94.5	168.7	
65	toyota	gas	std	two	hatchback	rwd	front	94.5	168.7	
67	toyota	gas	std	four	hatchback	fwd	front	95.7	166.3	
68	toyota	gas	std	two	hardtop	rwd	front	98.4	176.2	
73	toyota	gas	std	four	wagon	4wd	front	95.7	169.7	
78	toyota	gas	std	four	sedan	fwd	front	102.4	175.6	
82	toyota	gas	std	four	sedan	fwd	front	95.7	166.3	
86	toyota	gas	std	two	sedan	rwd	front	94.5	168.7	
88	toyota	gas	std	two	hatchback	rwd	front	94.5	168.7	
90	toyota	gas	std	two	hardtop	rwd	front	98.4	176.2	
95	toyota	gas	std	four	hatchback	fwd	front	102.4	175.6	
96	toyota	gas	std	two	hatchback	rwd	front	98.4	176.2	
103	toyota	diesel	turbo	four	sedan	fwd	front	102.4	175.6	
105	toyota	gas	std	four	sedan	fwd	front	102.4	175.6	
108	toyota	gas	std	two	hardtop	rwd	front	98.4	176.2	
110	toyota	gas	std	four	hatchback	fwd	front	102.4	175.6	
112	toyota	gas	std	two	hatchback	rwd	front	98.4	176.2	
144	toyota	gas	std	four	sedan	rwd	front	104.5	187.8	
145	toyota	gas	std	four	wagon	rwd	front	104.5	187.8	
147	toyota	gas	std	two	hatchback	rwd	front	102.9	183.5	
153	toyota	gas	std	two	hatchback	rwd	front	102.9	183.5	

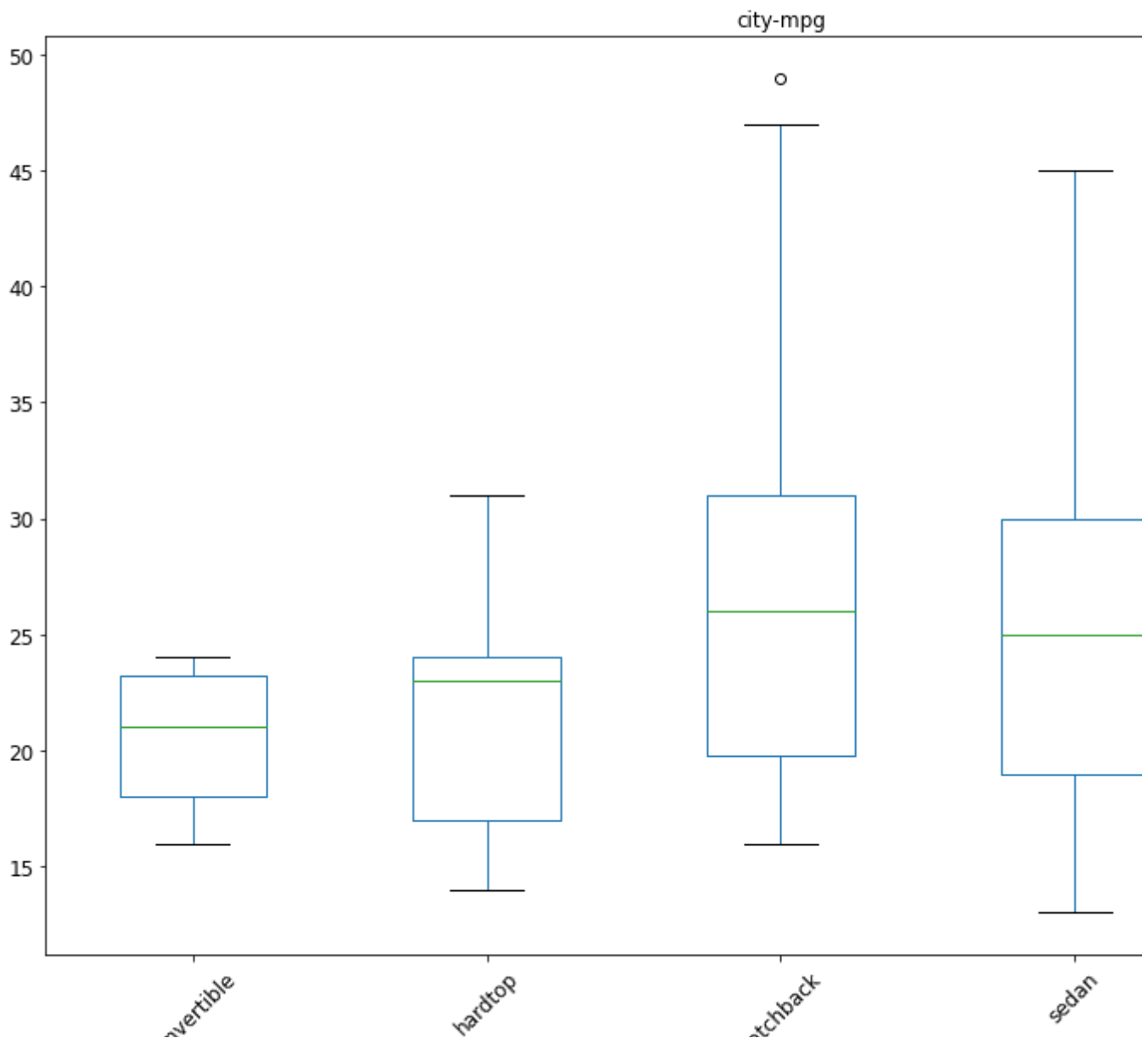NUMBER OF TOYOTA CARS WITH PRICE MORE THAN $8000: 22

22 rows × 24 columns

▾ QUESTION 3

```
data2 = df.boxplot(column='city-mpg', by = 'body-style', rot=45, figsize = (15,10), fc
```

```
/usr/local/lib/python3.7/dist-packages/matplotlib/cbook/__init__.py:1376: Visible
  X = np.atleast_1d(X.T if isinstance(X, np.ndarray) else np.asarray(X))
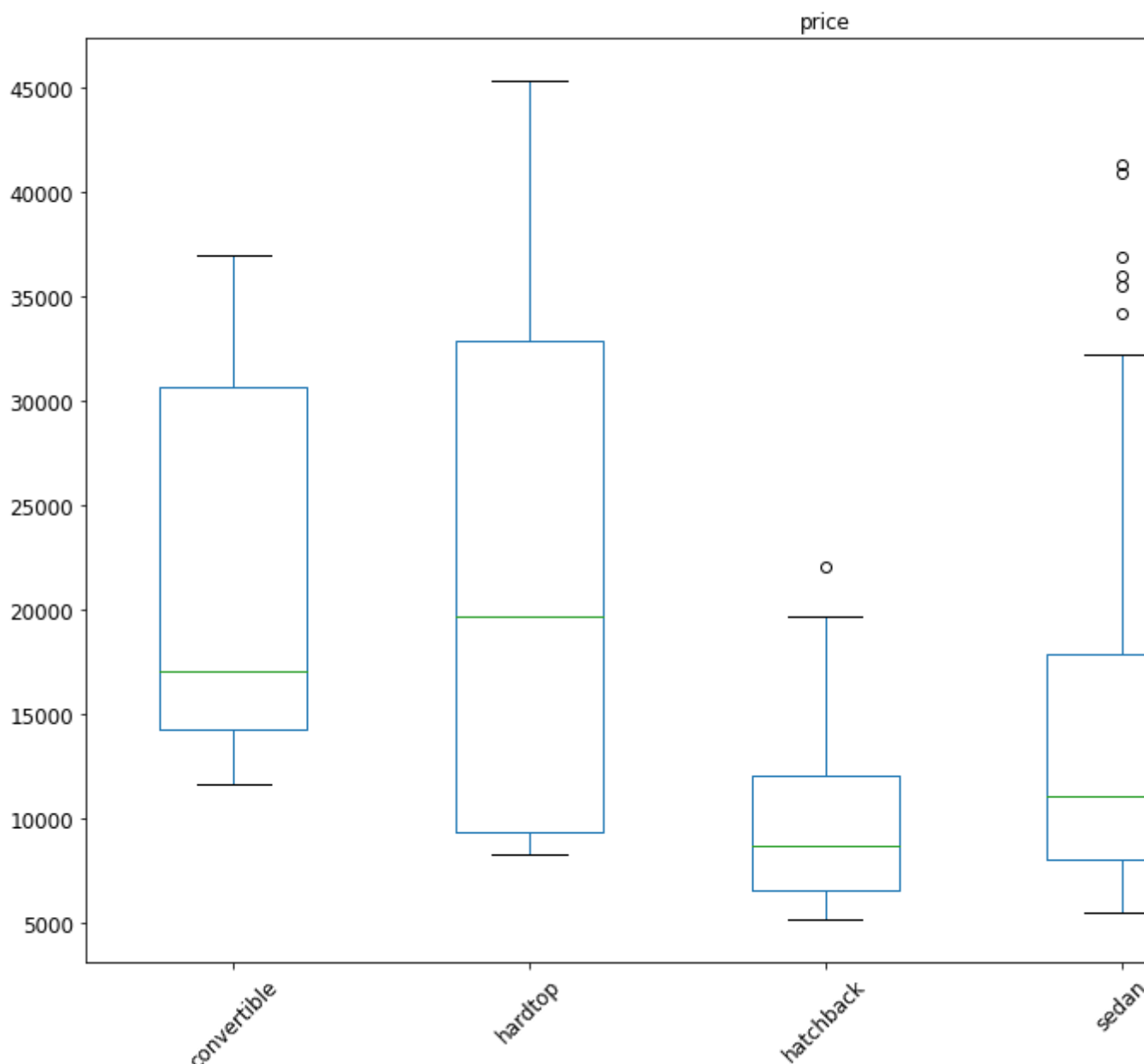```

Boxplot grouped by body-style



## AVERAGE: 26.6

## QUESTION 4

```
data3 = df.boxplot(column='price', by = 'body-style', rot=45, figsize = (15,10), fonts
```

```
/usr/local/lib/python3.7/dist-packages/matplotlib/cbook/__init__.py:1376: Visible
  X = np.atleast_1d(X.T if isinstance(X, np.ndarray) else np.asarray(X))
```
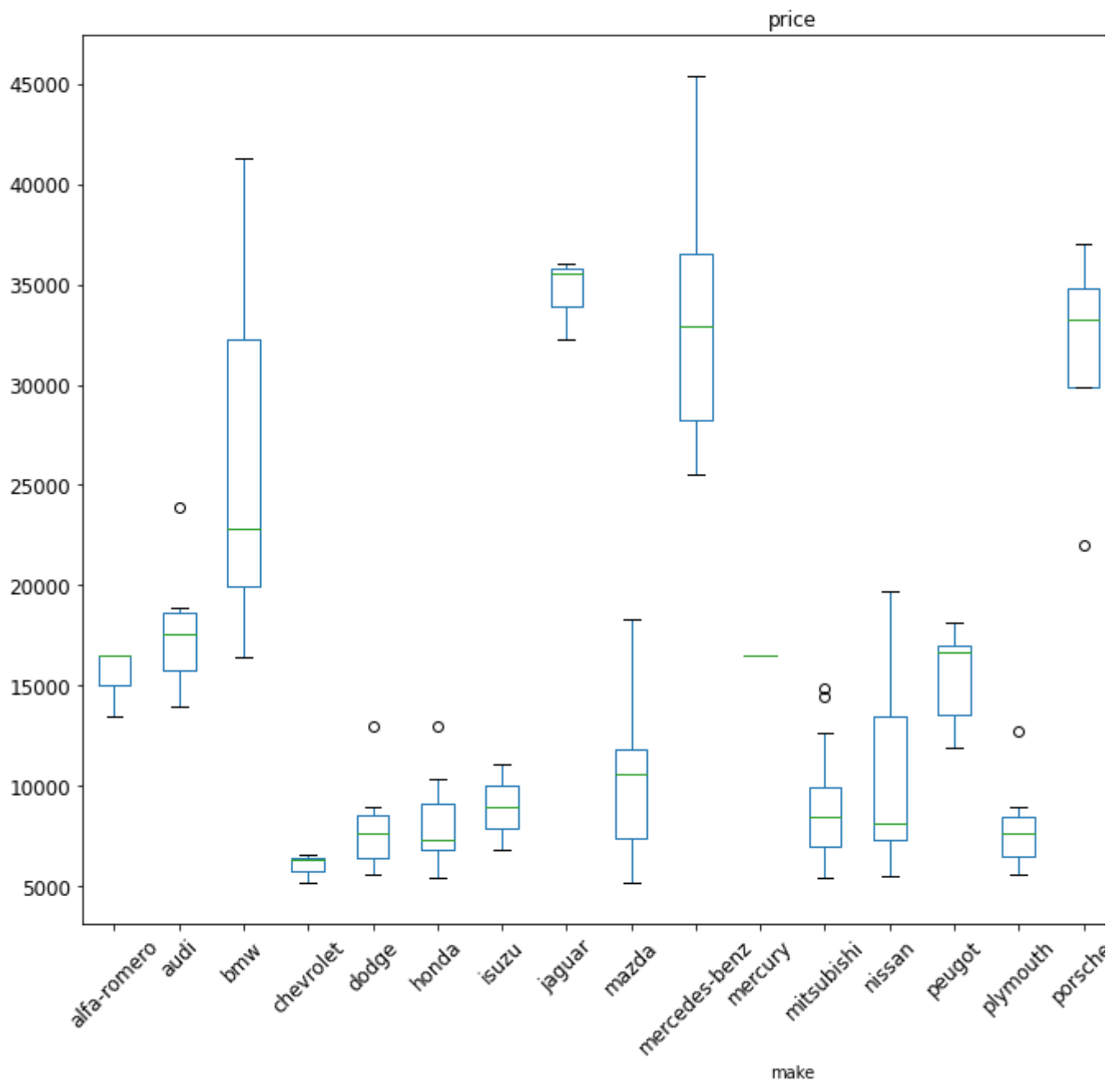
Boxplot grouped by body-style

▾ QUESTION 5

```
data4 = df.boxplot(column='price', by = 'make', rot=45, figsize = (15,10), fontsize =
```

```
/usr/local/lib/python3.7/dist-packages/matplotlib/cbook/__init__.py:1376: Visibl
  X = np.atleast_1d(X.T if isinstance(X, np.ndarray) else np.asarray(X))
```

Boxplot grouped by make

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