

```
In [3]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
sns.set_theme(style = "darkgrid")
mpg = sns.load_dataset("mpg")
```

```
In [4]: mpg
```

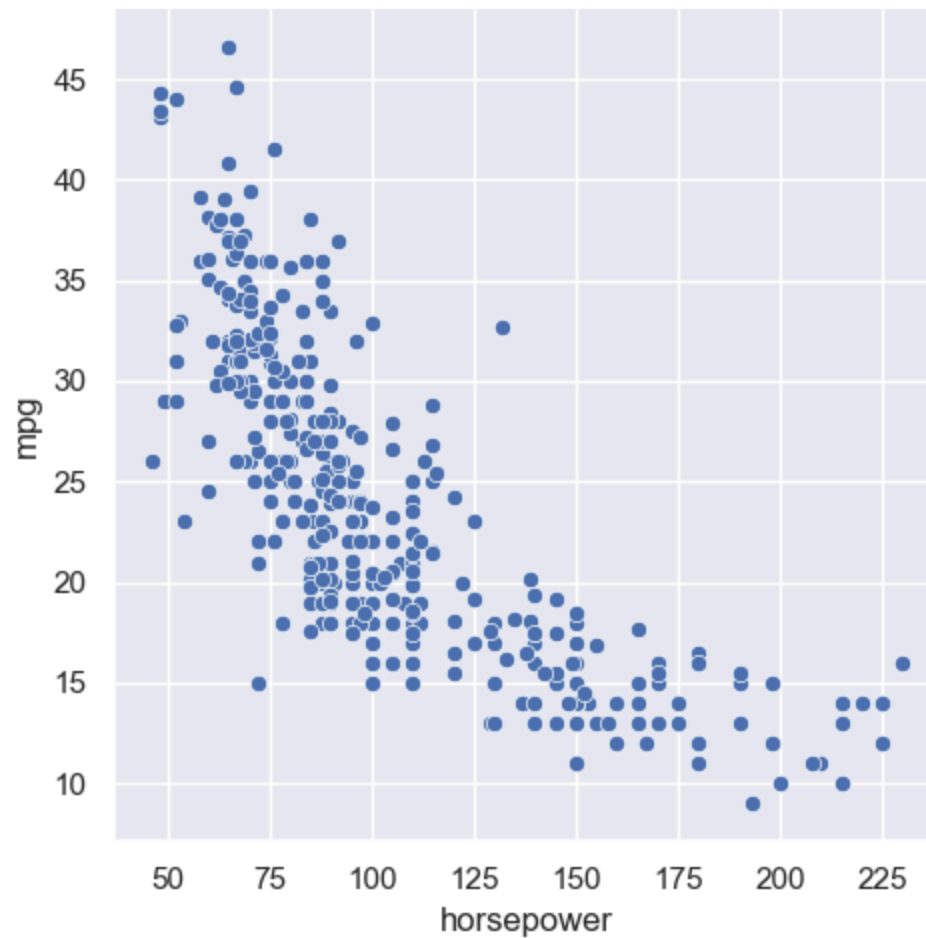
```
Out[4]:
```

	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	europe	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 × 9 columns

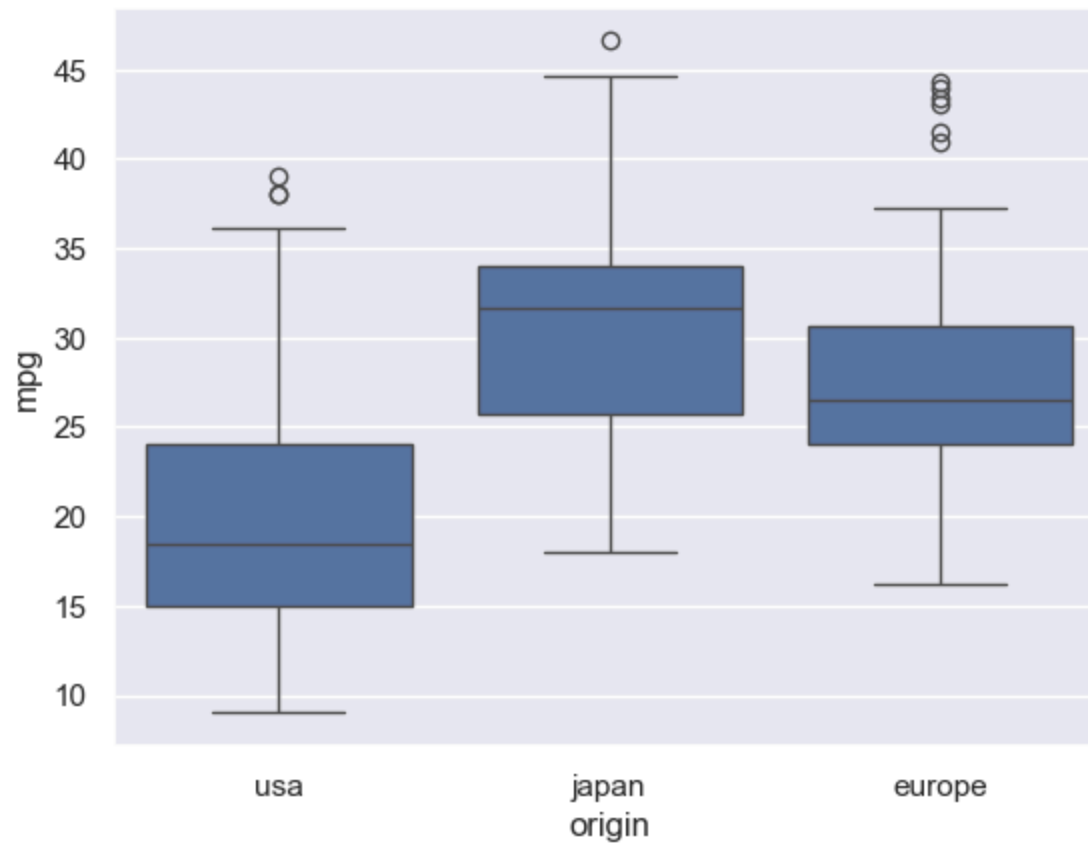
```
In [5]: # Create a visual showing the relationship between horsepower and fuel economy
sns.relplot(
    data = mpg,
    x = "horsepower",
    y = "mpg"
)
```

Out[5]: <seaborn.axisgrid.FacetGrid at 0x22434c42600>



```
In [6]: #summarizing fuel economy by country of origin
sns.boxplot(
    data = mpg,
    x = "origin",
    y = "mpg"
)
```

Out[6]: <Axes: xlabel='origin', ylabel='mpg'>

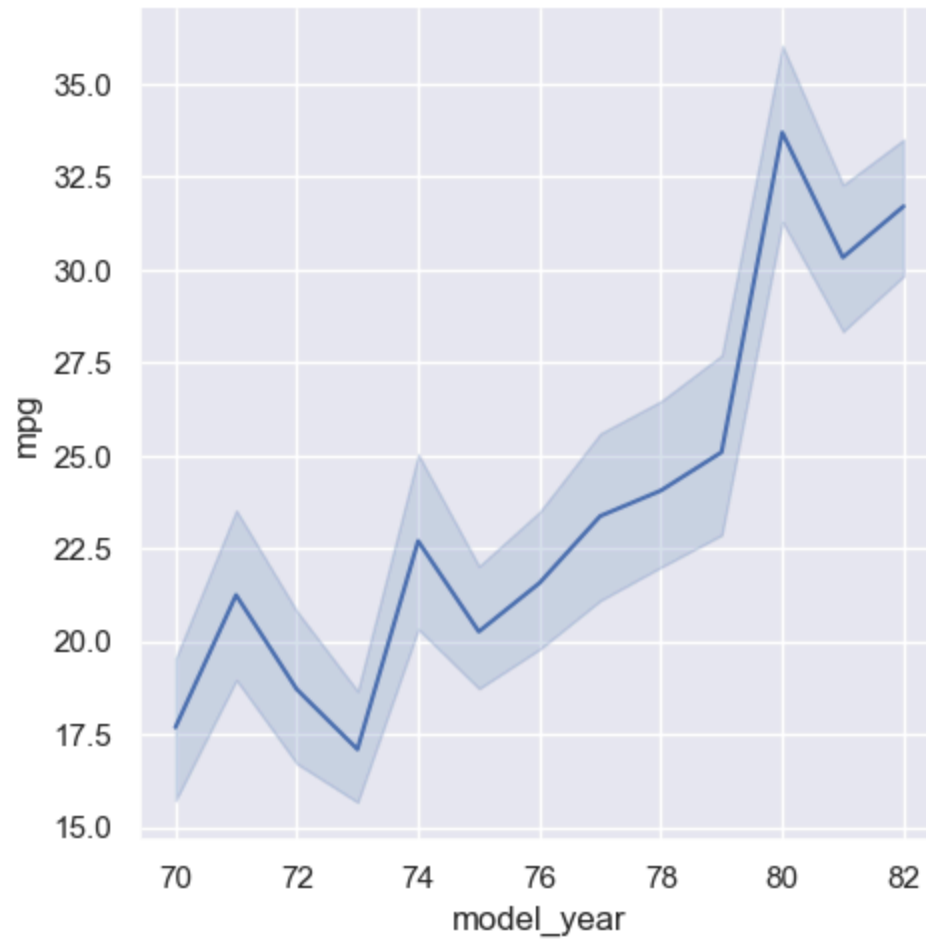


```
In [8]: summary_table = mpg.groupby("origin")["mpg"].agg(  
    mean_mpg = "mean",  
    max_mpg = "max",  
    min_mpg = "min"  
).reset_index()  
  
print(summary_table)
```

	origin	mean_mpg	max_mpg	min_mpg
0	europe	27.891429	44.3	16.2
1	japan	30.450633	46.6	18.0
2	usa	20.083534	39.0	9.0

```
In [9]: #Showing how fuel economy has changed over time
sns.relplot(
    data = mpg,
    x = "model_year",
    y = "mpg",
    kind = "line"
)
```

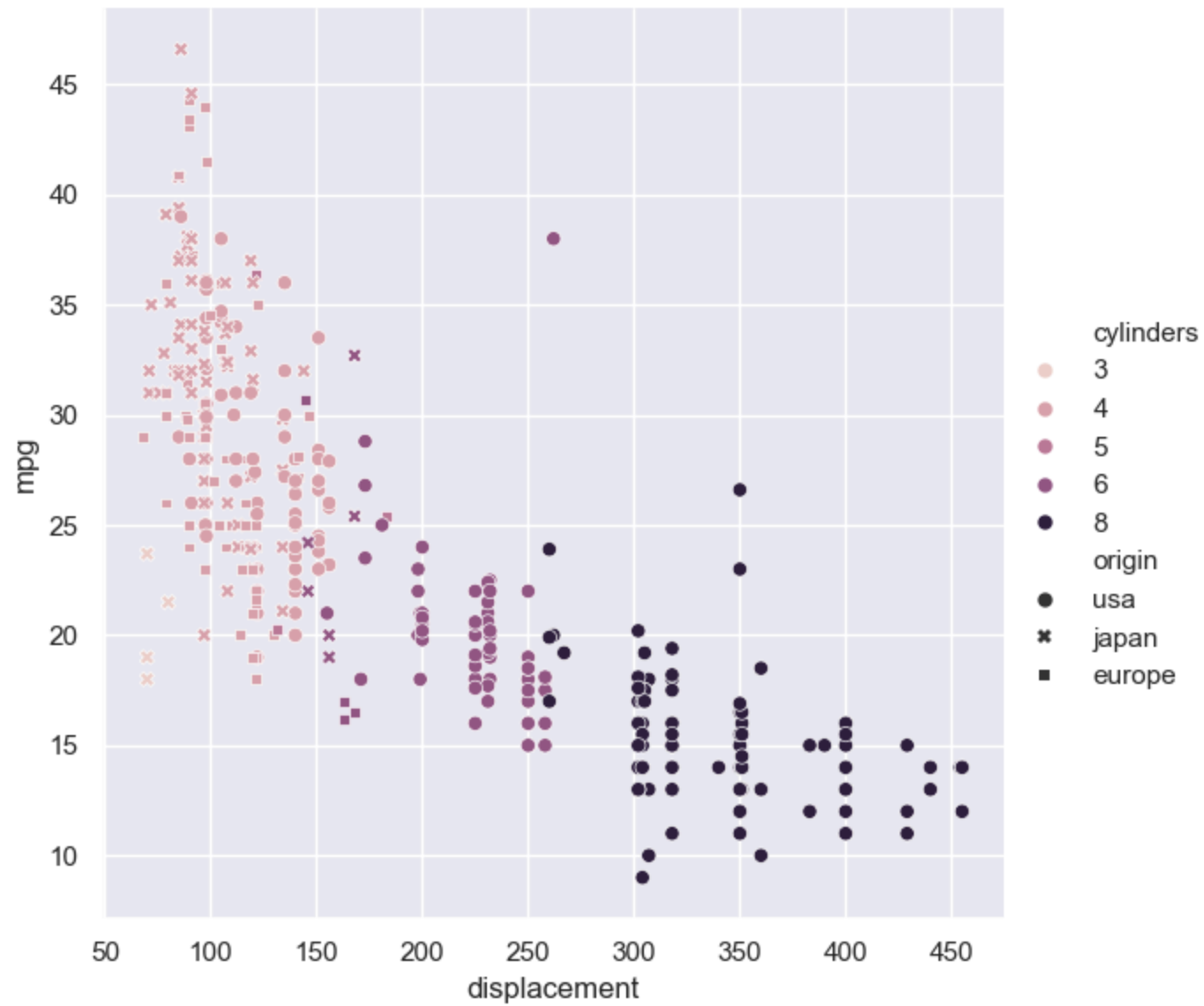
Out[9]: <seaborn.axisgrid.FacetGrid at 0x22436fc4950>



```
In [12]: #Showing relationship between engine displacement and fuel economy
sns.relplot(
```

```
data = mpg,  
x = "displacement",  
y = "mpg",  
hue = "cylinders",  
style = "origin",  
height = 6  
)
```

Out[12]: <seaborn.axisgrid.FacetGrid at 0x2243719aae0>



In [ ]: