Explore the automobile dataset and visualize the i) Distribution of the two and four door cars with respect to the type of fuel they use ii) Distribution of cars of different body styles with respect to the type of fuel they use iii) Total number of each type of body style cars categorized by fuel type iv) Horsepower of each of the fuel type with reference to the type of drive wheel present in cars. (https://www.kaggle.com/datasets/toramky/automobile-dataset?resource=download)

In [2]:
```python
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

In [3]:
```python
df= pd.read_csv('Automobile_data.csv',na_values=['?'])
df.head()
```

Out[3]:

	symboling	normalized-losses	make	fuel-type	aspiration	num-of-doors	body-style	drive-wheels	engine-location	wheel-base	...	engine-size	fuel-system	bore	stroke	compression-ratio	hor
0	3	NaN	alfa-romero	gas	std	two	convertible	rwd	front	88.6	...	130	mpfi	3.47	2.68	9.0	
1	3	NaN	alfa-romero	gas	std	two	convertible	rwd	front	88.6	...	130	mpfi	3.47	2.68	9.0	
2	1	NaN	alfa-romero	gas	std	two	hatchback	rwd	front	94.5	...	152	mpfi	2.68	3.47	9.0	
3	2	164.0	audi	gas	std	four	sedan	fwd	front	99.8	...	109	mpfi	3.19	3.40	10.0	
4	2	164.0	audi	gas	std	four	sedan	4wd	front	99.4	...	136	mpfi	3.19	3.40	8.0	

5 rows × 26 columns

In [4]:
```python
df.describe().T
```

|	count	mean	std	min	25%	50%	75%	max
symboling	205.0	0.834146	1.245307	-2.00	0.00	1.00	2.00	3.00
normalized-losses	164.0	122.000000	35.442168	65.00	94.00	115.00	150.00	256.00
wheel-base	205.0	98.756585	6.021776	86.60	94.50	97.00	102.40	120.90
length	205.0	174.049268	12.337289	141.10	166.30	173.20	183.10	208.10
width	205.0	65.907805	2.145204	60.30	64.10	65.50	66.90	72.30
height	205.0	53.724878	2.443522	47.80	52.00	54.10	55.50	59.80
curb-weight	205.0	2555.565854	520.680204	1488.00	2145.00	2414.00	2935.00	4066.00
engine-size	205.0	126.907317	41.642693	61.00	97.00	120.00	141.00	326.00
bore	201.0	3.329751	0.273539	2.54	3.15	3.31	3.59	3.94
stroke	201.0	3.255423	0.316717	2.07	3.11	3.29	3.41	4.17
compression-ratio	205.0	10.142537	3.972040	7.00	8.60	9.00	9.40	23.00
horsepower	203.0	104.256158	39.714369	48.00	70.00	95.00	116.00	288.00
peak-rpm	203.0	5125.369458	479.334560	4150.00	4800.00	5200.00	5500.00	6600.00
city-mpg	205.0	25.219512	6.542142	13.00	19.00	24.00	30.00	49.00
highway-mpg	205.0	30.751220	6.886443	16.00	25.00	30.00	34.00	54.00
price	201.0	13207.129353	7947.066342	5118.00	7775.00	10295.00	16500.00	45400.00

i) Distribution of the two and four door cars with respect to the type of fuel they use

```
sns.countplot(x='num-of-doors', hue='fuel-type', data=df)
plt.title('Distribution of Two and Four Door Cars by Fuel Type')
plt.show()
```

Distribution of Two and Four Door Cars by Fuel Type
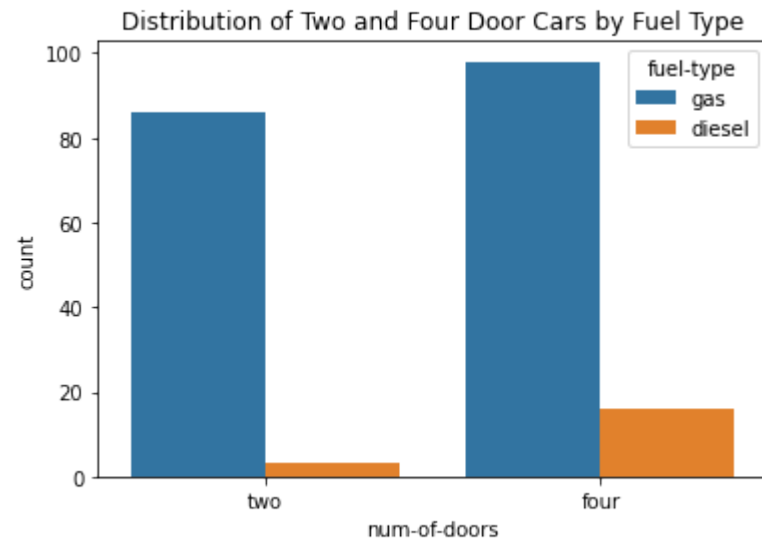
ii) Distribution of cars of different body styles with respect to the type of fuel they use

In [8]:
```python
sns.boxplot(x = 'body-style', y= 'horsepower', hue = 'fuel-type', data = df)
plt.title('Type of body style cars categorized by fuel type')
plt.show()
```
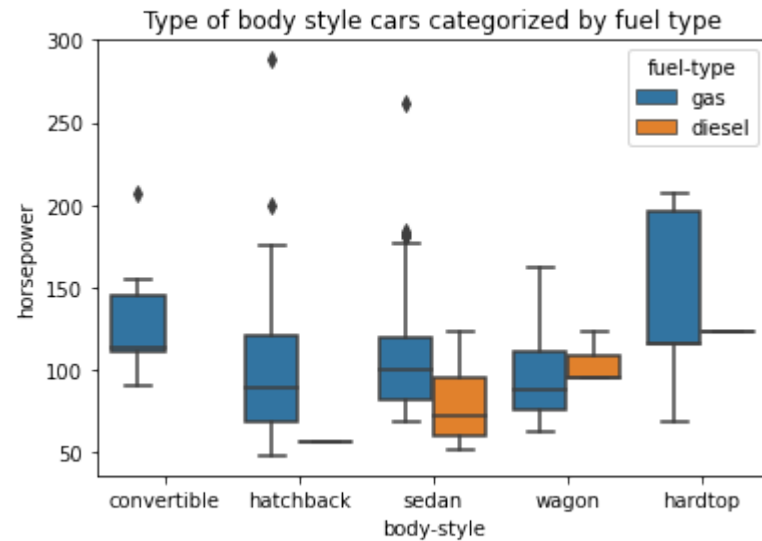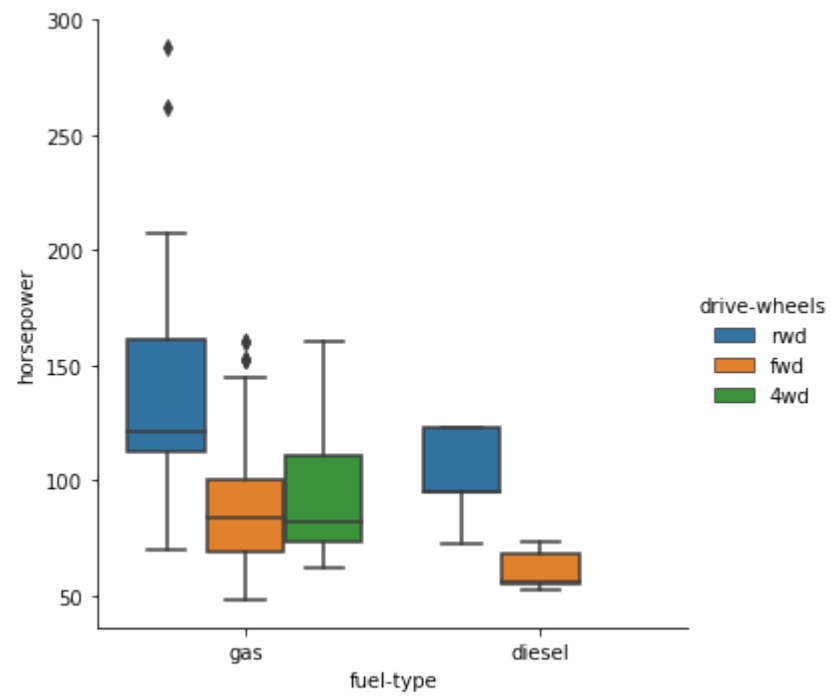

Type of body style cars categorized by fuel type

iii) Total number of each type of body style cars categorized by fuel type

```python
sns.countplot(x = 'body-style', hue = 'fuel-type', data = df)
plt.title('Type of body style cars categorized by fuel type')
plt.show()
```
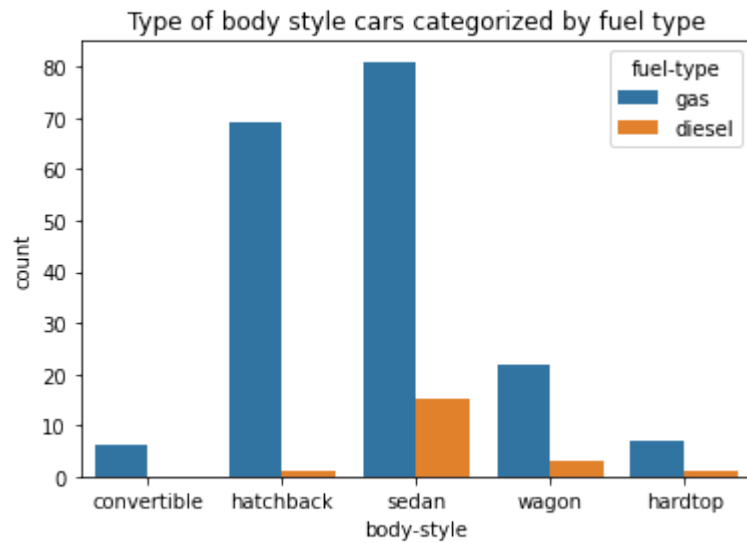

iv) Horsepower of each of the fuel type with reference to the type of drive wheel present in cars

```python
sns.catplot(x="fuel-type",y="horsepower",hue="drive-wheels",data=df,kind='box')
plt.show()
```