

Assignment 2
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Question 1

a)

Output of the code:

convertible	hardtop	hatchback	sedan	wagon
2	5	60	79	17

- The number of automobiles in convertible in this file is 2, hardtop is 5, hatchback is 60, sedan is 79 and wagon is 17.

b)

Output of the code:

convertible	hardtop	hatchback	sedan	wagon
0.0123	0.0307	0.3681	0.4847	0.1043

- The proportion of automobiles in convertible: 1.23%
- The proportion of automobiles in hardtop: 3.07%
- The proportion of automobiles in hatchback: 36.81%
- The proportion of automobiles in sedan: 48.47%
- The proportion of automobiles in wagon: 10.43%

c)

Output of the code:

	BodyStyle	Losses
1	convertible	138.00000
2	hardtop	132.60000
3	hatchback	132.08333
4	sedan	120.35443
5	wagon	87.52941

- The average loss for convertible is 138.00, hardtop is 132.6, hatchback is 132.08, sedan is 120.35 and wagon is 87.53.

d)

Output of the code:

	BodyStyle	NumDoors	Losses
1	hatchback	four	100.00000
2	sedan	four	116.60294
3	wagon	four	87.52941
4	convertible	two	138.00000
5	hardtop	two	132.60000
6	hatchback	two	138.50000
7	sedan	two	143.54545

- The average loss for four doors hatchback is 100, four doors sedan is 116.60, four doors wagon

is 87.53, two doors convertible is 138.00, two doors hardtop is 132.60, two doors hatchback is 138.50 and two doors sedan is 143.55.

e)

- When the body style is convertible, hardtop, or hatchback, the average insurance losses are relatively high, exceeding 132. Sedans are next, while wagons have the lowest average losses at only 87.53.
- Overall, four-door models have lower average losses than two-door models. Considering body styles that come in both four-door and two-door variants, the four-door hatchbacks and sedans have significantly lower average losses compared to their two-door counterparts, with reductions of 38.50 and 26.94, respectively.

f)

Output of the code:

	BodyStyle	Losses
1	convertible	138.0000
2	hardtop	123.7500
3	hatchback	171.6429
4	sedan	136.3846
5	wagon	78.7500

- For the rear-wheel drive model, the average loss for convertible is 138.00, hardtop is 123.75, hatchback is 171.64, sedan is 136.38 and wagon is 78.75.

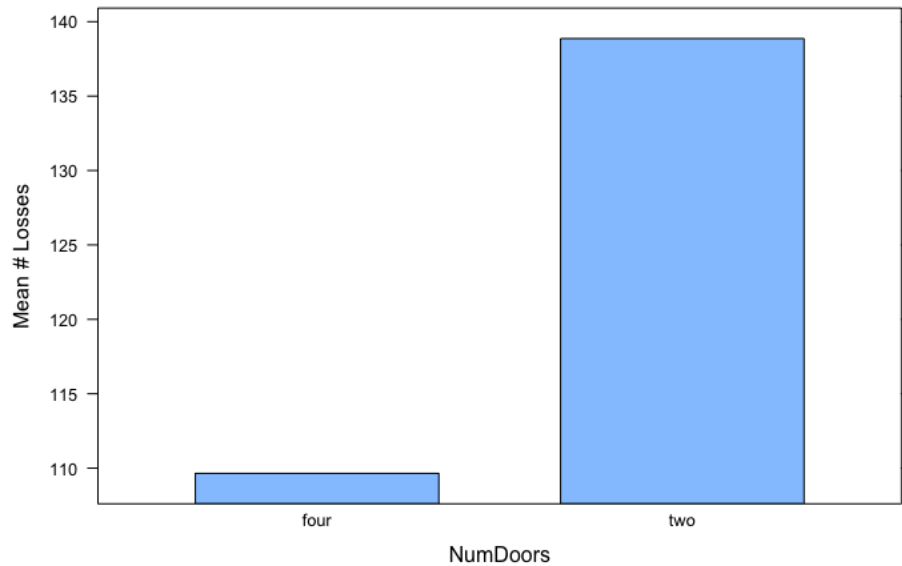
g)

- Overall, except for the convertible which only has a rear-wheel drive model, the average losses for rear-wheel drive vehicles vary when compared to the average losses for all models.
- The rear-wheel drive hardtop models have a slight decrease in average losses (8.85) compared to all models.
- The rear-wheel drive hatchback models have a significant increase in average losses (39.56) compared to all models.
- The rear-wheel drive sedan models have a slight increase in average losses (16.03) compared to all models.
- The rear-wheel drive wagon models have a slight decrease in average losses (8.78) compared to all models.

Question 2

a)

Output of the code:

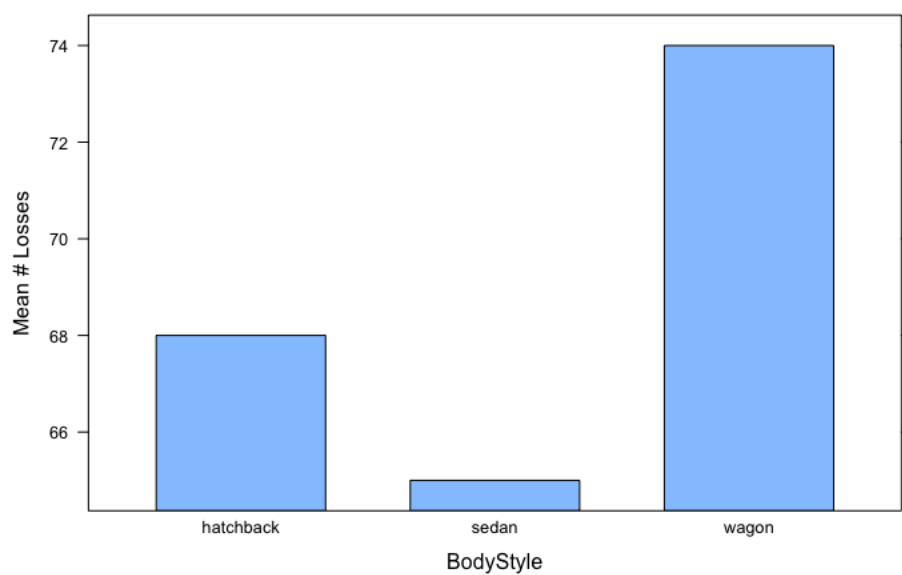


- The average losses for four-door models are lower than the losses for two-door models.

b)

Output of the code:

	BodyStyle	Losses
1	hatchback	68
2	sedan	65
3	wagon	74

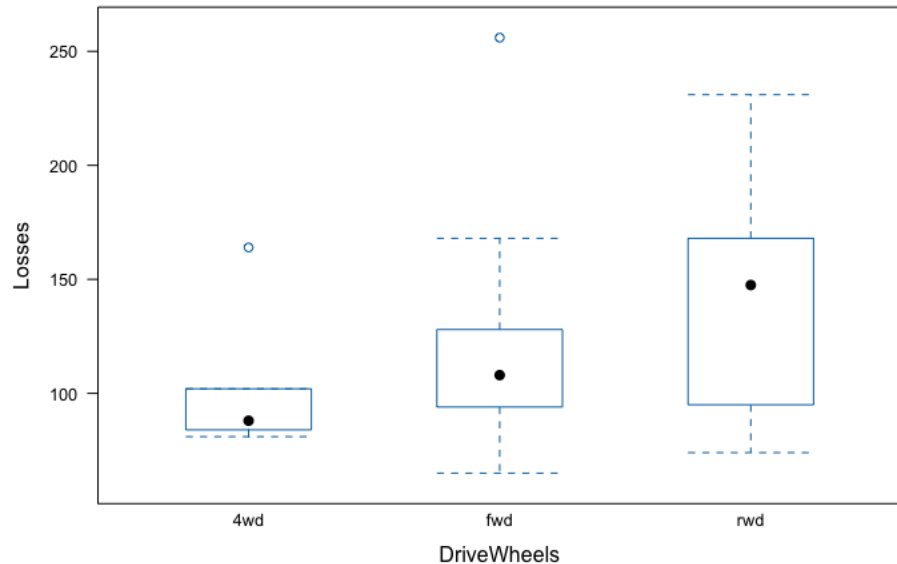


- Among the ten cars with the lowest losses, there are only three body styles, with sedans having

the lowest average losses, followed by hatchbacks and wagons.

c)

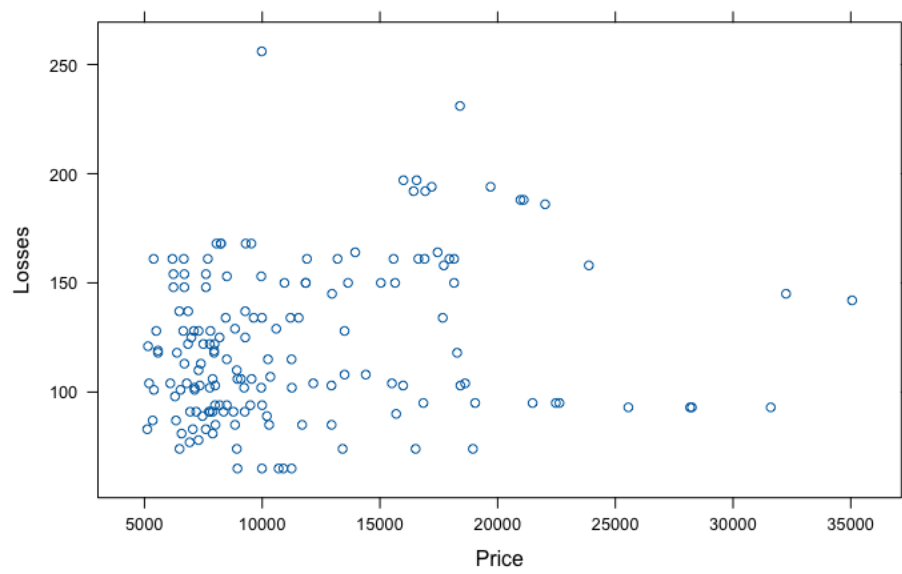
Output of the code:



- Overall, the data has few outliers, and the boxplot effectively summarizes the distribution of the data.
- The four-wheel drive models have the lowest median losses, and the data is the most concentrated, with more data clustered between the second and third quartiles (Q2-Q3).
- The rear-wheel drive models have the highest median losses, and the data is the most dispersed, with more data clustered between the first and second quartiles (Q1-Q2).
- The front-wheel drive models have a median and data concentration that fall between the other two, with a more uniform data distribution.

d)

Output of the code:



- There is no apparent relationship between Price and Losses.