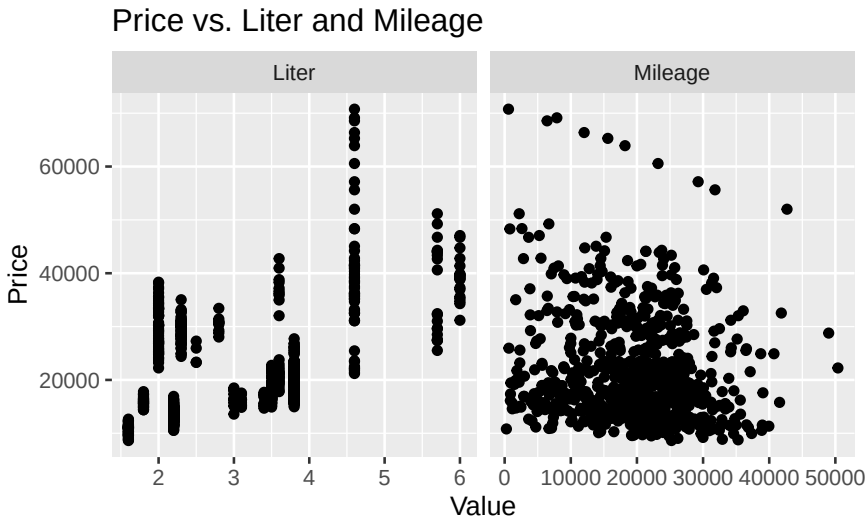
Assignment 10: How much for that car?

FirstName LastName

2025-10-30

Exercise 1



Exercise 2

term	estimate	std.error	statistic	p.value
(Intercept)	9426.6014688	1095.0777745	8.608157	0.0e+00
Liter	4968.2781155	258.8011436	19.197280	0.0e+00
Mileage	-0.1600285	0.0349084	-4.584237	5.3e-06

```
## [1] 0.3291279
```

Exercise 3

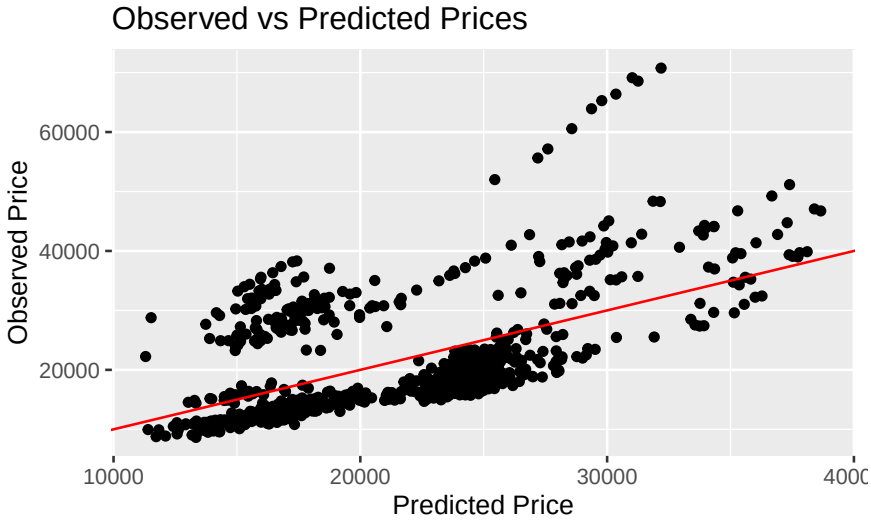
```
lit <- unique(car_prices$Liter)
mil <- unique(car_prices$Mileage)
grid <- with(car_prices, expand.grid(lit, mil))
```

```
d <- setNames(data.frame(grid), c("Liter", "Mileage"))
vals <- predict(continuous_model, newdata = d)

m <- matrix(vals, nrow = length(unique(d$Liter)), ncol = length(unique(d$Mileage)))

p <- plot_ly() %>%
  add_markers(
    x = ~car_prices$Mileage,
    y = ~car_prices$Liter,
    z = ~car_prices$Price,
    marker = list(size = 1)
  ) %>%
  add_trace(
    x = ~mil,
    y = ~lit,
    z = ~m,
    type = "surface",
    colorscale = list(c(0,1), c("yellow", "yellow")),
    showscale = FALSE
  ) %>%
  layout(
    scene = list(
      xaxis = list(title = "Mileage"),
      yaxis = list(title = "Liters"),
      zaxis = list(title = "Price")
    )
  )

if (!is_pdf) { p }
```

Exercise 4

Price	Mileage	Make	Model	Trim	Type	Cylinder	Liter	Doors	Cruise	Sound	Leather	pred	resid
17314.1	8221	Buick	Century	Sedan 4D	Sedan	6	3.1	4	1	1	1	23512.67	-6198.566
17542.04	9135	Buick	Century	Sedan 4D	Sedan	6	3.1	4	1	1	0	23366.40	-5824.367
16218.85	13196	Buick	Century	Sedan 4D	Sedan	6	3.1	4	1	1	0	22716.53	-6497.679
16336.91	16342	Buick	Century	Sedan 4D	Sedan	6	3.1	4	1	0	0	22213.08	-5876.164
16339.17	19832	Buick	Century	Sedan 4D	Sedan	6	3.1	4	1	0	1	21654.58	-5315.407
15709.05	22236	Buick	Century	Sedan 4D	Sedan	6	3.1	4	1	1	0	21269.87	-5560.816

Exercise 5



Exercise 6