

Homework 5

Setup

```
setwd('C:/Users/visha/OneDrive/Documents/School/Summer 2024/PSTAT 10/PSTAT10-Worksheets-and-HW')
library(tidyverse)

## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
## v dplyr      1.1.4      v readr      2.1.5
## v forcats    1.0.0      v stringr   1.5.1
## v ggplot2    3.5.1      v tibble    3.2.1
## v lubridate  1.9.3      v tidyr     1.3.1
## v purrr      1.0.2
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors

library(datasets)
```

Problem 1

```
aqdata <- as_tibble(airquality)
tempData1 <- aqdata |> filter(Temp >= 80) |> mutate(Feels = 'Hotter')
tempData2 <- aqdata |> filter(Temp < 80) |> mutate(Feels = 'Colder')
aqdata <- rbind(tempData1, tempData2)
plot <- ggplot(aqdata, mapping = aes(x = Wind, y = Ozone, color=Feels))
plot + geom_point(aes()) +
  geom_smooth(method='lm', se = TRUE, col='#3366ff') +
  scale_color_manual(values = c("Colder" = "cadetblue3", "Hotter" = "tomato"), name=NULL) +
  labs(x = 'Wind (mph)', y = 'Ozone (ppb)', title='Ozone and Wind in NYC, 1973') +
  guides(fill=guide_legend(title='test')) +
  theme_classic()

## `geom_smooth()` using formula = 'y ~ x'
## Warning: Removed 37 rows containing non-finite outside the scale range
## (`stat_smooth()`).
## Warning: Removed 37 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

A scatter plot showing the relationship between Wind (mph) on the x-axis and an unlabeled variable on the y-axis. The x-axis ranges from approximately 2 to 22, with major ticks at 5, 10, 15, and 20. The y-axis is unlabeled but has a vertical scale. The data points are colored red and teal. A solid blue line represents the linear regression, and a grey shaded area around it indicates the confidence interval. The regression line shows a negative correlation, starting at approximately (2, 0.8) and ending at (21, 0.2).