

DSC-465

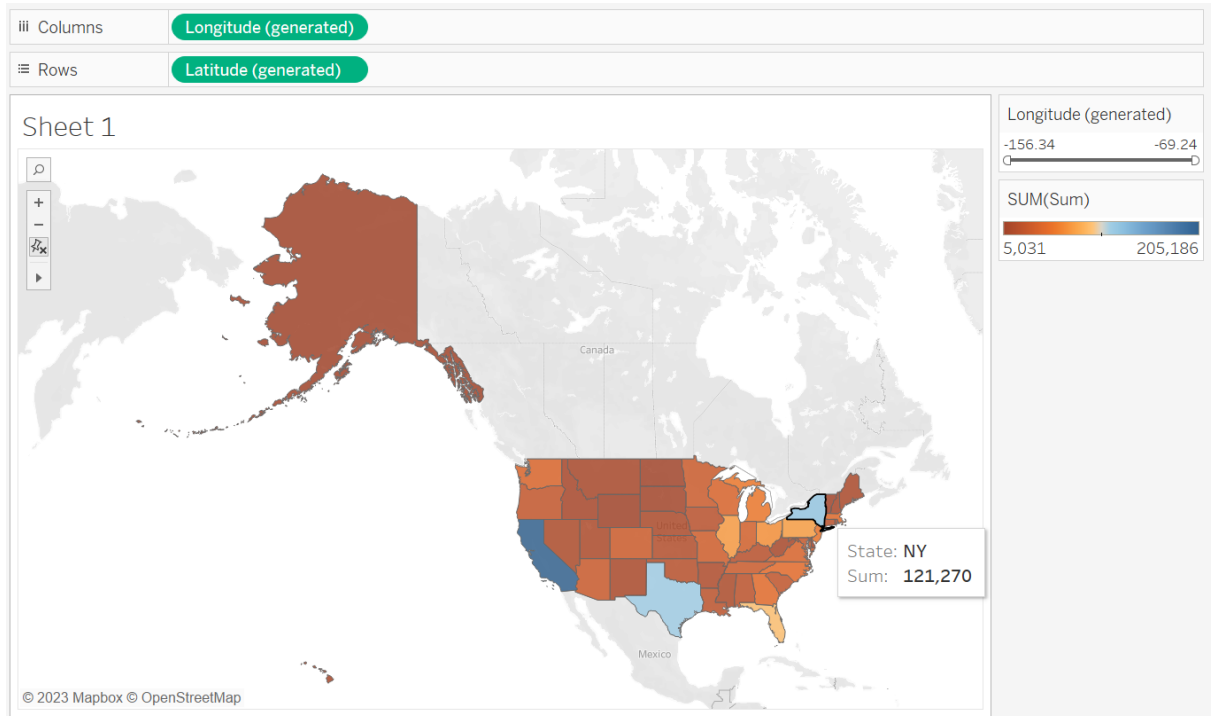
HOMEWORK 2

NAME: ROHAN DHOYDA

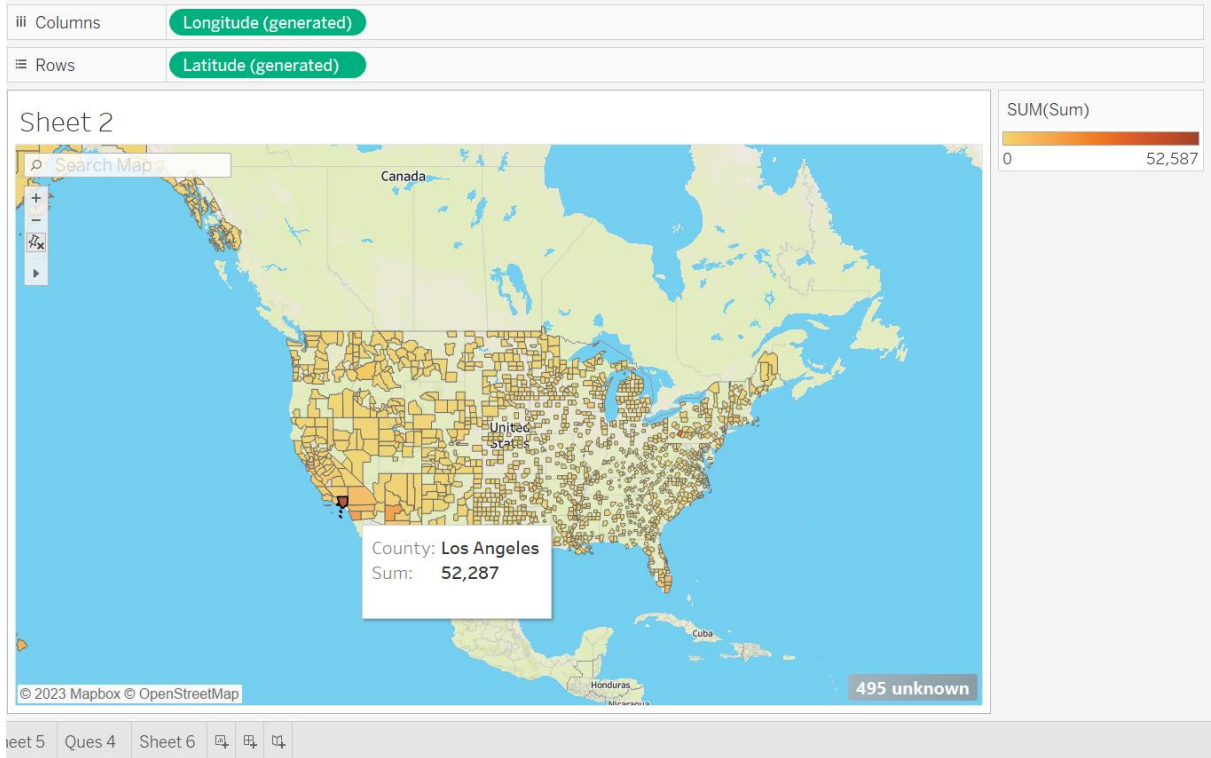
Student ID: 2115018

Q1)

a) Graph Food Services by State

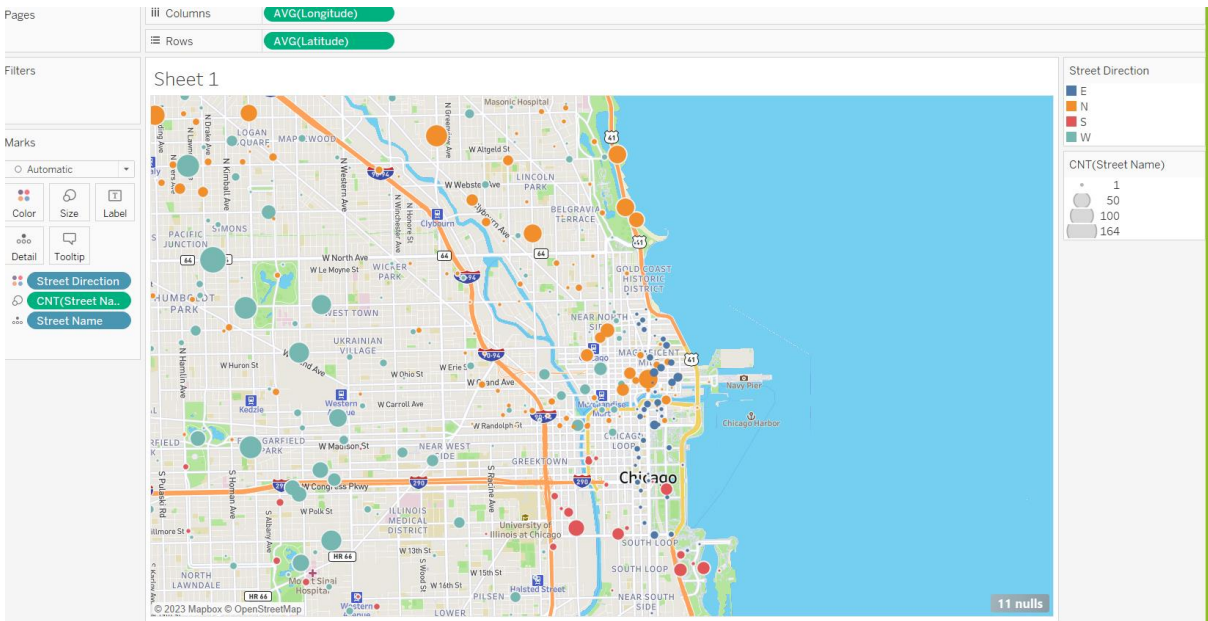


b) Graph Food Services by County

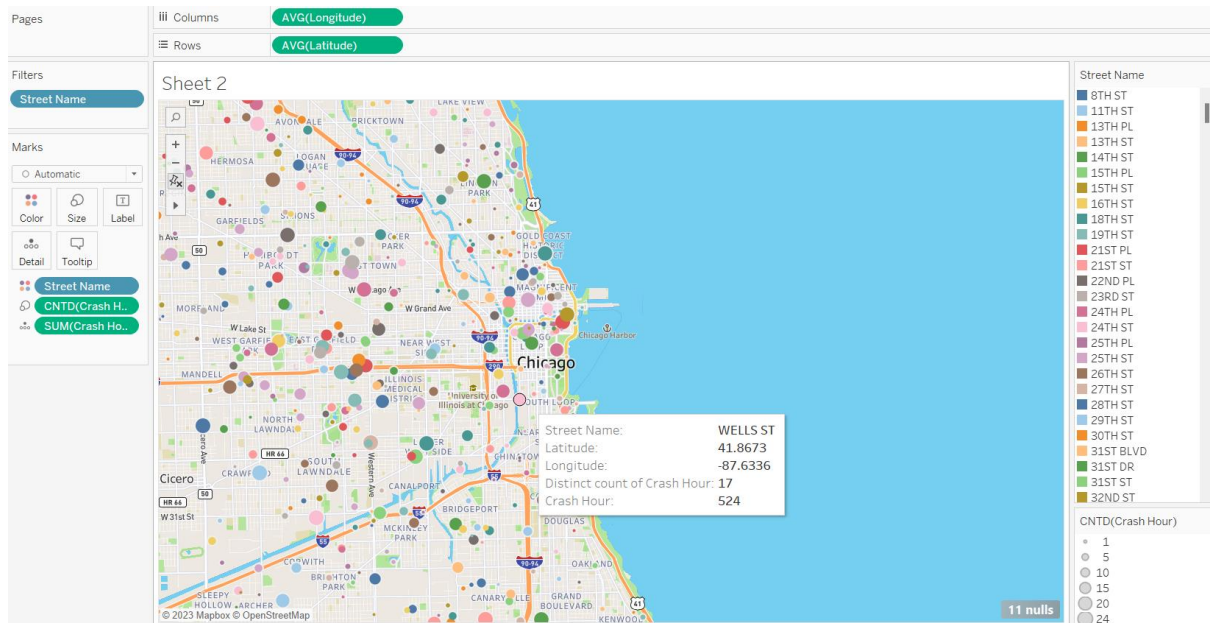


Q2)

a) Accident Points

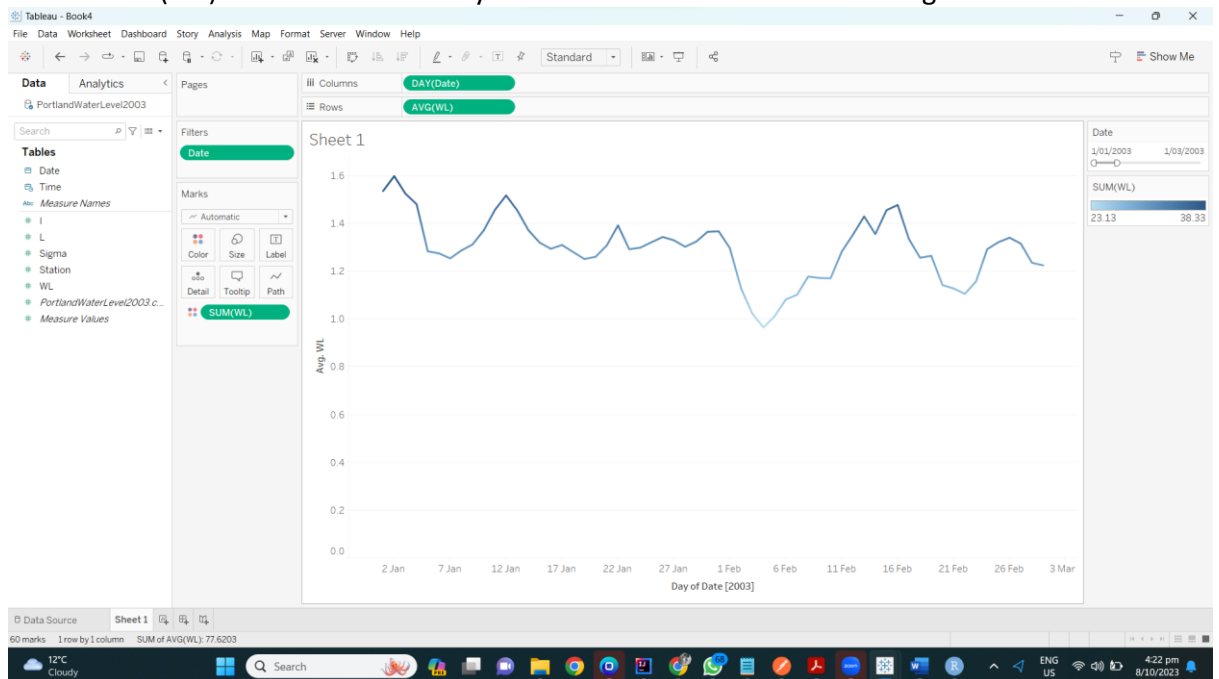


b) Common Crashes in Different Parts of the City



Q3

a) Water level (WL) measurements every hour as a function of Time – Average WL vs Time



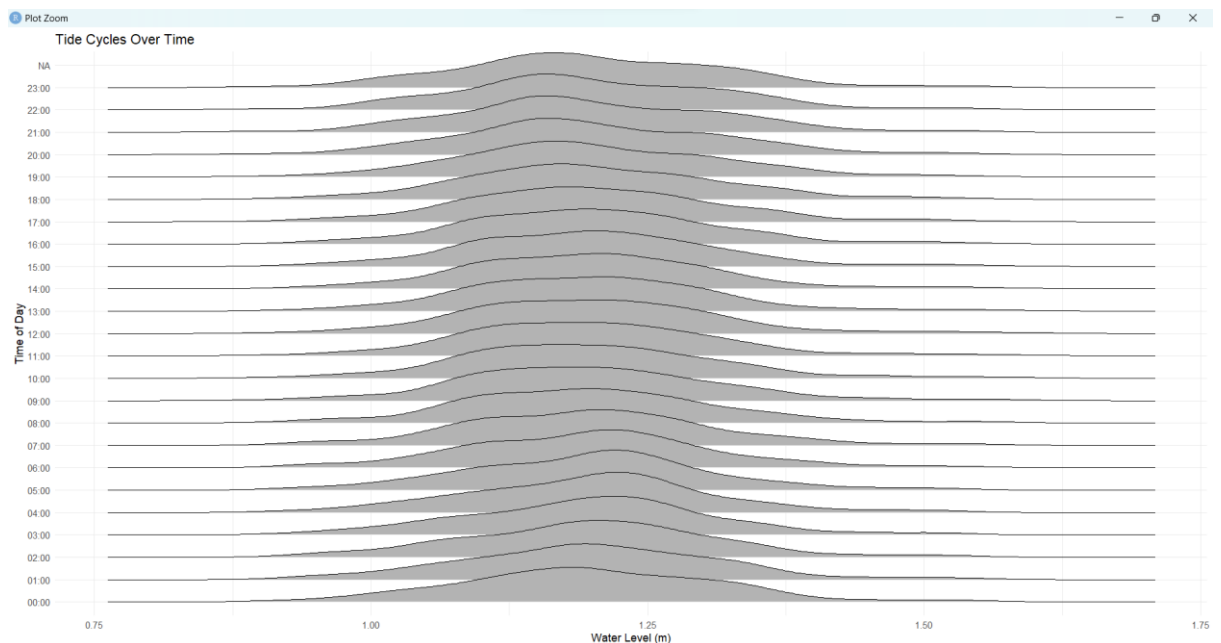
b) R CODE

```
library(dplyr)
library(ggplot2)
library(ggribes)

# Load your data
portlandwl <- read.csv("C:/Users/dhoyd/Downloads/PortlandWaterLevel2003.csv")

# Assuming 'WL' is your data frame or tibble
portland_ma <- portlandwl %>%
  mutate(Date_Time = as.POSIXct(paste(Date, Time), format = "%m/%d/%Y %H:%M")) %>%
  arrange(Date_Time) %>%
  mutate(WL_MA = zoo::rollmean(WL, k = 24, align = "center", fill = NA))

# Create a ridge plot
ggplot(portland_ma, aes(x = WL_MA, y = format(Date_Time, "%H:%M"))) +
  geom_density_ridges() +
  labs(x = "Water Level (m)", y = "Time of Day", title = "Tide Cycles Over Time") +
  theme_minimal()
```



- c) The water level goes up and down a bit. The graph that shows everything at once is better than the window method. Also, the highlighted graph helps us see big changes and the highest and lowest points, but it's harder to compare with other graphs. So, the combined graph shows visible changes, gives more information than the window way, and helps us find important shifts and the highest and lowest points. But it's a bit tricky to compare it with other graphs.

Q4)

I have used 3(a) for a divergent colour scale and have used two distinct color to indicate water level high and low.

