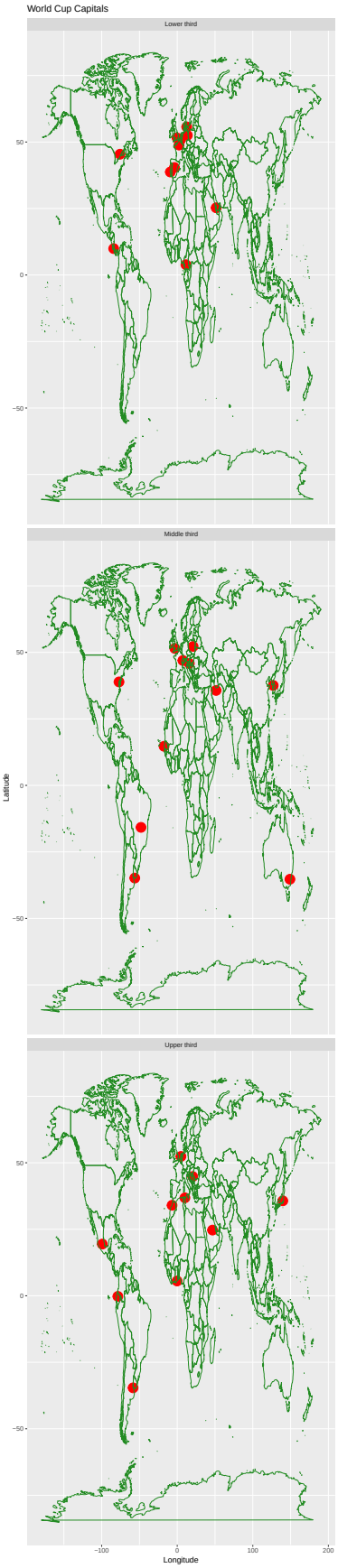
foul_map

2024-12-07

Does the number of fouls comitted differ by geography?

```
library(ggplot2)
library(maps)

coords_df <- read.csv(
  "avg_team_data.csv",
  header=TRUE
)

#Does the number of fouls committed per game differ by geographic region?

#Add fouls category by splitting into three quantiles
coords_df$fouls_category <-
  cut(coords_df$fouls.committed,
      breaks = c(0,
                 quantile(coords_df$fouls.committed, 0.33),
                 quantile(coords_df$fouls.committed, 0.66),
                 quantile(coords_df$fouls.committed, 1)),
                               labels = c("Lower third",
                                          "Middle third",
                                          "Upper third"))




#Put capital city of each team on map
#Facet by number of fouls

map_outline <- map_data("world")

foul_map <- ggplot(coords_df, aes(x = Longitude, y = Latitude)) +
    geom_point(color = "red", size = 6) +
    labs(x = "Longitude", y = "Latitude", title = "World Cup Capitals")

# Add the map layer and facet by 'fouls_category'
foul_map <- foul_map +
    geom_path(data = map_outline, aes(x = long, y = lat, group = group), color = "forestgreen") +
    facet_wrap(~ fouls_category, ncol=1)


foul_map
```


World Cup Capitals
Lower third
Middle third
Upper third
Latitude
50
0
−50
−100
0
100
200
Longitude

```
ggsave("foul_map.png")
```

```
## Saving 6.5 x 30 in image
```

It does not look like there are any geographical patterns with regard to number of fouls comitted.