Final Project Proposal

Plastic Pollution in the US

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.0 --
## v tibble  3.0.6     v purrr   0.3.4
## v tidyr   1.1.2     v dplyr   1.0.4
## v readr   1.4.0     v forcats 0.5.1
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x lubridate::as.difftime() masks base::as.difftime()
## x lubridate::date()        masks base::date()
## x dplyr::filter()          masks stats::filter()
## x readr::guess_encoding()  masks rvest::guess_encoding()
## x lubridate::intersect()   masks base::intersect()
## x dplyr::lag()             masks stats::lag()
## x purrr::pluck()           masks rvest::pluck()
## x lubridate::setdiff()     masks base::setdiff()
## x lubridate::union()       masks base::union()
```

```
plastics <- readr::read_csv('https://raw.githubusercontent.com/rfordatascience/tidytuesday/master/data/
```

```
##
## -- Column specification --------------------------------------------------------
## cols(
##   country = col_character(),
##   year = col_double(),
##   parent_company = col_character(),
##   empty = col_double(),
##   hdpe = col_double(),
##   ldpe = col_double(),
##   o = col_double(),
##   pet = col_double(),
##   pp = col_double(),
##   ps = col_double(),
##   pvc = col_double(),
##   grand_total = col_double(),
##   num_events = col_double(),
##   volunteers = col_double()
## )
```

Data

```
glimpse(plastics)
```

```
## Rows: 13,380
## Columns: 14
```

```
## $ country        <chr> "Argentina", "Argentina", "Argentina", "Argentina", ...
## $ year           <dbl> 2019, 2019, 2019, 2019, 2019, 2019, 2019, 2019, 2019...
## $ parent_company <chr> "Grand Total", "Unbranded", "The Coca-Cola Company",...
## $ empty          <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
## $ hdpe           <dbl> 215, 155, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
## $ ldpe           <dbl> 55, 50, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,...
## $ o              <dbl> 607, 532, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 13, 0, 0,...
## $ pet            <dbl> 1376, 848, 222, 39, 38, 22, 21, 26, 19, 14, 14, 14, ...
## $ pp             <dbl> 281, 122, 35, 4, 0, 7, 6, 0, 1, 4, 3, 1, 0, 0, 3, 0,...
## $ ps             <dbl> 116, 114, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
## $ pvc            <dbl> 18, 17, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,...
## $ grand_total    <dbl> 2668, 1838, 257, 43, 38, 29, 27, 26, 20, 18, 17, 15,...
## $ num_events     <dbl> 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4...
## $ volunteers     <dbl> 243, 243, 243, 243, 243, 243, 243, 243, 243, 243, 24...
```

Research Question

As a result of climate change and the increasing human impact on our environment, it is important to look at the trends of pollution from corporations as they do have a large impact on the environment relative to individual human beings. I hope to answer two research questions. I hope to explore which category of plastic contributes most to pollution around the world. I also hope to see whether there was a change in plastic pollution from 2019 and 2020. It would also be interesting to see which company contributes the most to plastic pollution.

The null hypothesis is that there is no change in plastic pollution between 2019 and 2020. The alternate hypothesis is that there is a change in plastic pollution between 2019 and 2020. For my other research question, on which category of plastic contributes the most to pollution, more analysis would need to be done to have an idea of it. However, I believe that the polystyrene (ps) count would contribute most to pollution because its substituents such as toys, cups, and styrofoam is very popular among human use.

Note: Since I used a link to load the data, I am unable to use the data folder. Rather, the data folder has a part of my larger dataset.