NewStatiscalAnalysis

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2023-04-06

Settingup Enviroment for Analysis

```
install.packages("tidyverse")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.1     v readr     2.1.4
## v forcats   1.0.0     v stringr   1.5.0
## v ggplot2   3.4.2     v tibble    3.2.1
## v lubridate 1.9.2     v tidyr     1.3.0
## v purrr     1.0.1
```

```
## -- 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
```

```
install.packages("ggplot2")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```
library(ggplot2)
install.packages("Tmisc")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```
library(Tmisc)
data("quartet")
```

Actual Analysis

When we view this data, we notice that there's four sets of x and y axis in the data frame. That's the quartet. Data can be summarized by different statistical measures. We'll get a summary of each set with the mean, standard deviation, and correlation for each of these datasets. We'll start by indicating that we want to group our data by set. ## Code

```
  quartet %>% group_by(set) %>%
  summarise(mean(x),sd(x),mean(y),sd(y),cor(x,y))
```

A tibble: 4 x 6 Type your text

```
##   set   `mean(x)` `sd(x)` `mean(y)` `sd(y)` `cor(x, y)`
##   <fct>     <dbl>   <dbl>     <dbl>   <dbl>       <dbl>
## 1 I             9    3.32      7.50    2.03       0.816
## 2 II            9    3.32      7.50    2.03       0.816
## 3 III           9    3.32      7.5     2.03       0.816
## 4 IV            9    3.32      7.50    2.03       0.817
```

Visualization Code

```
ggplot(quartet,mapping=aes(x,y))+
  geom_point()+
  geom_smooth(method =lm,se=FALSE)+   ##lm=linearsmooth & se=standarderror
  facet_wrap(~set)
```

```
## `geom_smooth()` using formula = 'y ~ x'
```