# MMC Handout

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*12/17/2019*

## Contents

# 1 Descriptive Statistics via State Demographics

## 1.1 Categorical Count (Raw)

```
school_type <- rc17 %>%
  count(SCHOOL_TYPE_NAME, sort = TRUE) %>%
  mutate(rel_freq = n/sum(n))
school_type
```

```
## # A tibble: 4 x 3
##   SCHOOL_TYPE_NAME     n rel_freq
##   <chr>            <int>    <dbl>
## 1 ELEMENTARY        2406    0.634
## 2 HIGH SCHOOL        644    0.170
## 3 MIDDLE SCHL        604    0.159
## 4 CHARTER SCH        142   0.0374
```
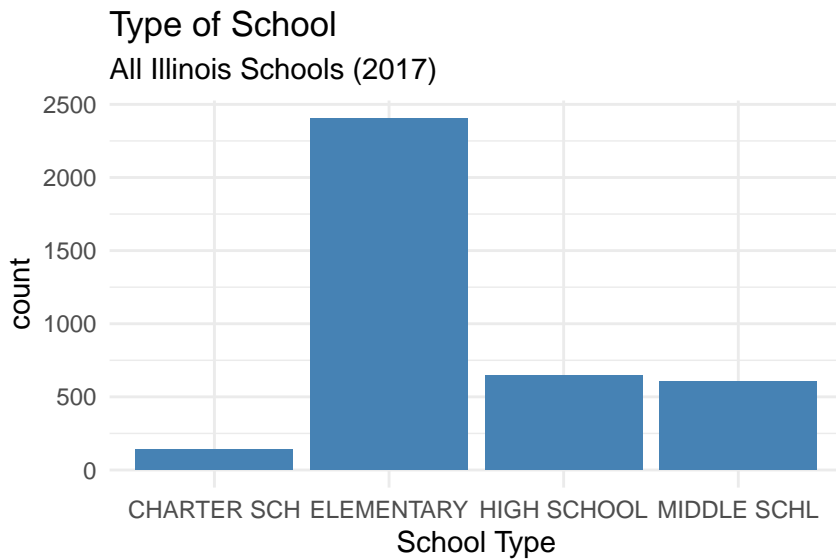
## 1.2 Categorical Count (Formatted)

```
kable(school_type) %>%
  kable_styling(bootstrap_options = "striped", full_width = F)
```

| SCHOOL_TYPE_NAME | n | rel_freq |
|------------------|------:|-----------|
| ELEMENTARY | 2406 | 0.6338251 |
| HIGH SCHOOL | 644 | 0.1696523 |
| MIDDLE SCHL | 604 | 0.1591149 |
| CHARTER SCH | 142 | 0.0374078 |

## 1.3 Categorical Plot

```
ggplot(rc17, aes(x=factor(SCHOOL_TYPE_NAME)))+
  geom_bar(fill="steelblue")+
  labs(title = "Type of School", x = "School Type", subtitle = "All Illinois Schools (2017)") +
  theme_minimal()
```

## Type of School
### All Illinois Schools (2017)



## 1.4 Categorical Analysis I

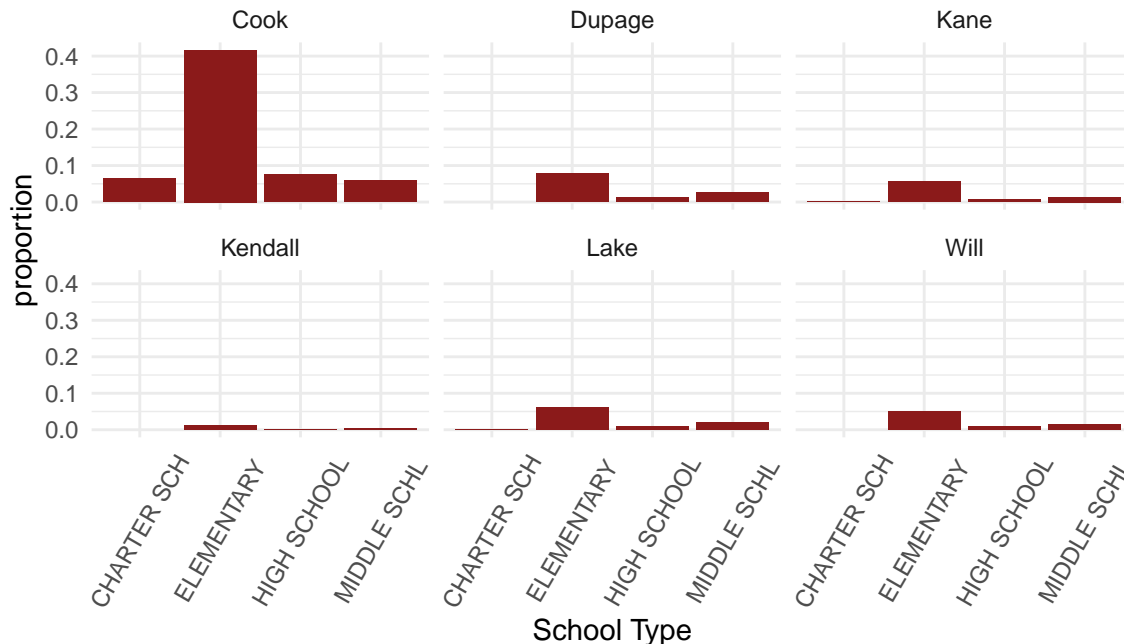Write a short analysis for the types of schools in the state of Illinois.

## 1.5 Categorical Analysis II

Write a short analysis for the types of schools in the six county region.

```
rc17 %>%
filter(COUNTY == "Dupage" | COUNTY == "Will" | COUNTY == "Kane" | COUNTY == "Lake" | COUNTY == "Will"| COUNTY =
ggplot(aes(x=factor(SCHOOL_TYPE_NAME), y = (..count..)/sum(..count..))) +
  geom_bar(fill="firebrick4")+
  facet_wrap(~COUNTY, nrow = 2) +
  labs(title = "Type of School by County",
       x = "School Type",
       y = "proportion",
       subtitle = "Six Counties in the Chicago Metropolitan Region (2017)") +
  theme_minimal()  +
  theme(axis.text.x = element_text(angle = 60, vjust = 0.5))
```

## Type of School by County
### Six Counties in the Chicago Metropolitan Region (2017)



# 2 Data Import

## 2.1 Data Files

- ISBE Report Card Data Library [https://www.isbe.net/Pages/Illinois-State-Report-Card-Data.aspx]
    - rc17.txt
    - six_county
- Import script
    - define variables
    - fix issues i.e. "$" and ","
    - load libraries
    - avaialble here

# 3 Original Material

## 3.1 R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.
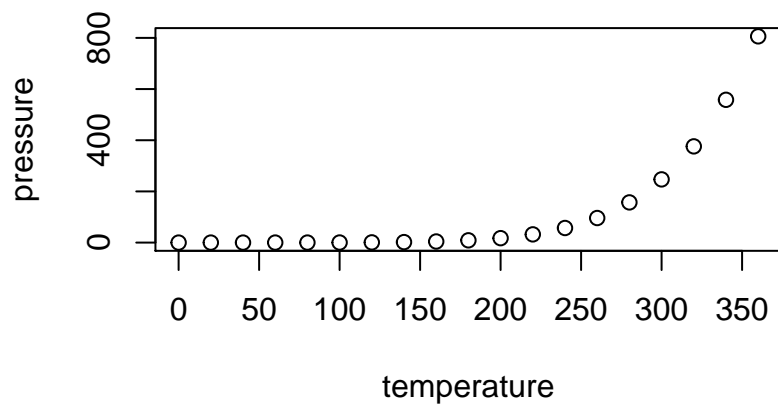
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed           dist
##  Min.   : 4.0   Min.   :  2.00
##  1st Qu.:12.0   1st Qu.: 26.00
##  Median :15.0   Median : 36.00
##  Mean   :15.4   Mean   : 42.98
##  3rd Qu.:19.0   3rd Qu.: 56.00
##  Max.   :25.0   Max.   :120.00
```

## 3.2 Including Plots

You can also embed plots, for example:

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.