

Lab 1 - Data visualization

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Load Packages

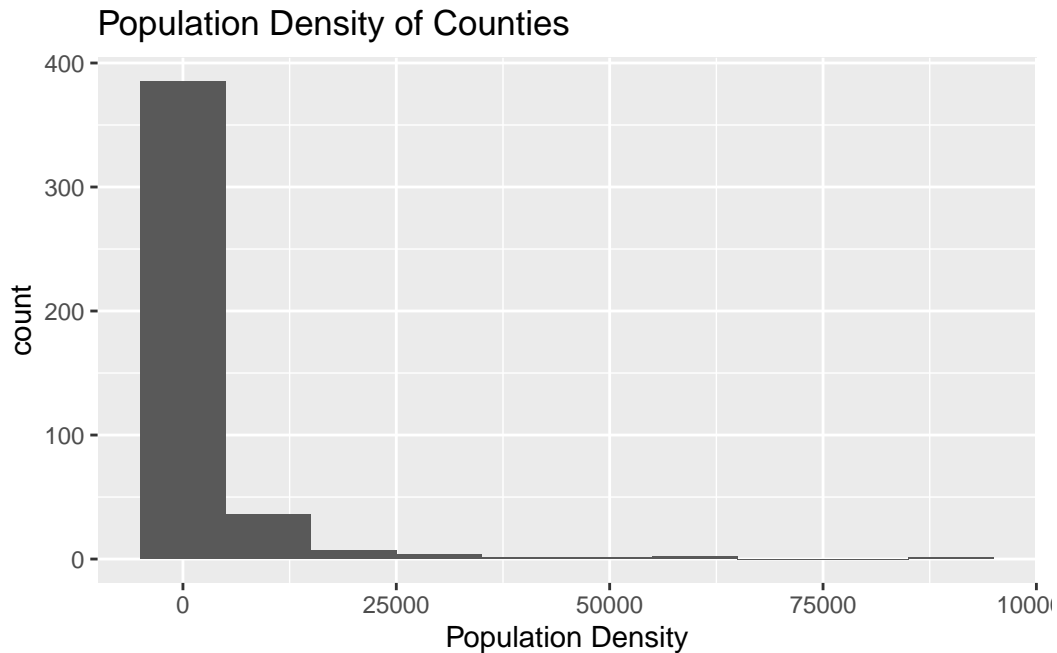
```
library(tidyverse)
```

```
Warning in system("timedatectl", intern = TRUE): running command 'timedatectl'  
had status 1
```

```
library(viridis)
```

Exercise 1

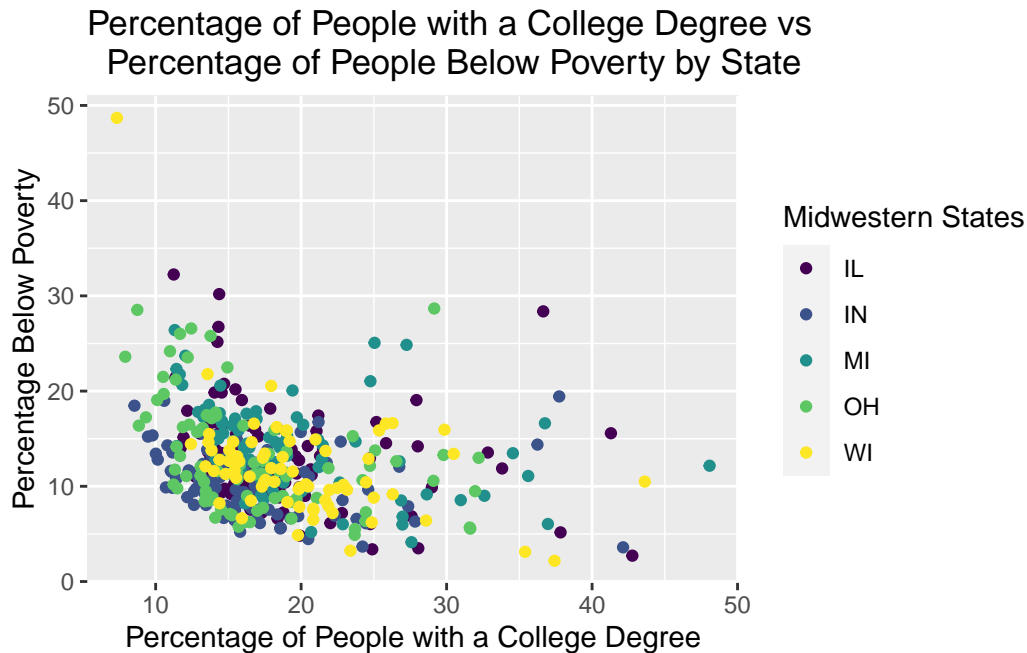
```
ggplot(midwest)+  
  geom_histogram( aes(popdensity), binwidth = 10000)+  
  labs(  
    x = "Population Density",  
    y = "count",  
    title = "Population Density of Counties"  
  )
```



This histogram is right skewed. It looks like there is an outlier in between $x=7500$ and $x = 100000$

Exercise 2

```
ggplot(data = midwest,
       mapping = aes(x = percollege, y = percbelowpoverty, color = state)) +
  geom_point() +
  labs(
    x = "Percentage of People with a College Degree",
    y = "Percentage Below Poverty",
    title = "Percentage of People with a College Degree vs
Percentage of People Below Poverty by State",
    color = "Midwestern States"
  ) +
  scale_color_viridis_d()
```



Exercise 3

This is a general trend among the states included in the dataset that those below the poverty line are less likely to obtain a college degree.

Exercise 4

```
ggplot(data = midwest,
       mapping = aes(x = percollege, y = percbelowpoverty, color = state)) +
  geom_smooth(se = FALSE)+
  geom_point(alpha = 0.5)+
  labs(
    x = "Percentage of People with a College Degree",
    y = "Percentage Below Poverty",
    title = "Percentage of People with a College Degree vs
Percentage of People Below Poverty by State",
    color = "Midwestern States"
  )+
  facet_wrap("state")
```

`geom_smooth()` using method = 'loess' and formula 'y ~ x'

Percentage of People with a College Degree vs
Percentage of People Below Poverty by State



Exercise 5

Exercise 6

Exercise 7