Lab 1 - Data visualization

Abigail Eun

Load Packages

```
library(tidyverse)
```

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

```
library(viridis)
```

Exercise 1

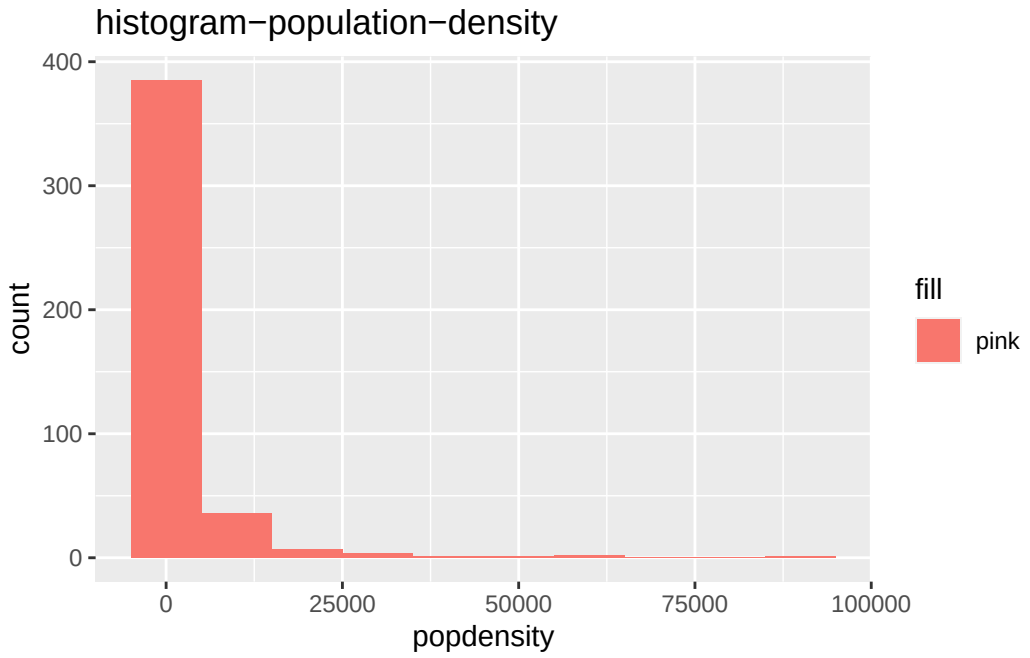
```
glimpse(midwest)
```

```
Rows: 437
Columns: 28
$ PID                 <int> 561, 562, 563, 564, 565, 566, 567, 568, 569, 570,~
$ county              <chr> "ADAMS", "ALEXANDER", "BOND", "BOONE", "BROWN", "~
$ state               <chr> "IL", "IL", "IL", "IL", "IL", "IL", "IL", "IL", "~
$ area                <dbl> 0.052, 0.014, 0.022, 0.017, 0.018, 0.050, 0.017, ~
$ poptotal            <int> 66090, 10626, 14991, 30806, 5836, 35688, 5322, 16~
$ popdensity          <dbl> 1270.9615, 759.0000, 681.4091, 1812.1176, 324.222~
$ popwhite            <int> 63917, 7054, 14477, 29344, 5264, 35157, 5298, 165~
$ popblack            <int> 1702, 3496, 429, 127, 547, 50, 1, 111, 16, 16559,~
$ popamerindian       <int> 98, 19, 35, 46, 14, 65, 8, 30, 8, 331, 51, 26, 17~
$ popasian            <int> 249, 48, 16, 150, 5, 195, 15, 61, 23, 8033, 89, 3~
$ popother            <int> 124, 9, 34, 1139, 6, 221, 0, 84, 6, 1596, 20, 7, ~
$ percwhite           <dbl> 96.71206, 66.38434, 96.57128, 95.25417, 90.19877,~
$ percblack           <dbl> 2.57527614, 32.90043290, 2.86171703, 0.41225735, ~
```

```
$ percamerindan        <dbl> 0.14828264, 0.17880670, 0.23347342, 0.14932156, 0~
$ percasian            <dbl> 0.37675897, 0.45172219, 0.10673071, 0.48691813, 0~
$ percother            <dbl> 0.18762294, 0.08469791, 0.22680275, 3.69733169, 0~
$ popadults            <int> 43298, 6724, 9669, 19272, 3979, 23444, 3583, 1132~
$ perchsd              <dbl> 75.10740, 59.72635, 69.33499, 75.47219, 68.86152,~
$ percollege           <dbl> 19.63139, 11.24331, 17.03382, 17.27895, 14.47600,~
$ percprof             <dbl> 4.355859, 2.870315, 4.488572, 4.197800, 3.367680,~
$ poppovertyknown      <int> 63628, 10529, 14235, 30337, 4815, 35107, 5241, 16~
$ percpovertyknown     <dbl> 96.27478, 99.08714, 94.95697, 98.47757, 82.50514,~
$ percbelowpoverty     <dbl> 13.151443, 32.244278, 12.068844, 7.209019, 13.520~
$ percchildbelowpovert <dbl> 18.011717, 45.826514, 14.036061, 11.179536, 13.02~
$ percadultpoverty     <dbl> 11.009776, 27.385647, 10.852090, 5.536013, 11.143~
$ percelderlypoverty   <dbl> 12.443812, 25.228976, 12.697410, 6.217047, 19.200~
$ inmetro              <int> 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 0~
$ category             <chr> "AAR", "LHR", "AAR", "ALU", "AAR", "AAR", "LAR", ~
```

```
view(midwest)
```

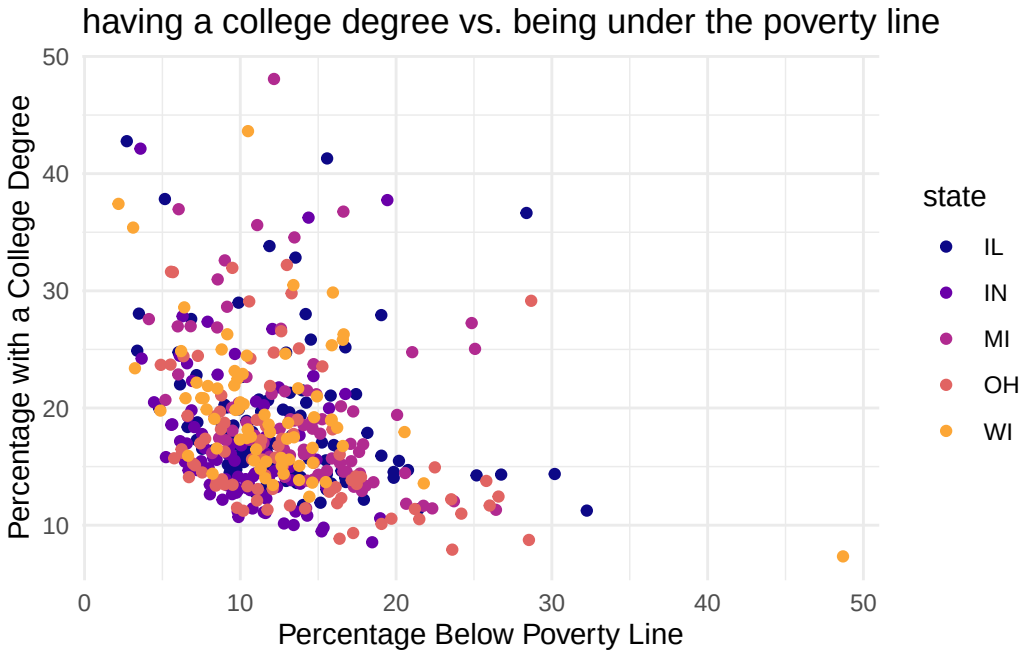
```
#this creates a histogram for population density
ggplot(data = midwest, aes(x = popdensity, fill = "pink")) +
  geom_histogram(binwidth = 10000) +
 labs(title = "histogram-population-density")
```



The graph is right-skewed. There are a few outliers: one between 50,000 and 75,000, and another one between 75,000 and 100,000.

Exercise 2

```
ggplot(data = midwest, aes(y = percollege, x = percbelowpoverty, color = state))+
  geom_point()+
  labs(title = "having a college degree vs. being under the poverty line", x = "Percentage
  scale_color_viridis_d(option = "C", end = 0.8) +
  theme_minimal()
```



Exercise 3

Exercise 4

Exercise 5

Exercise 6

Exercise 7