Day Seven-Eight: Grammar of Graphics

SDS 192: Introduction to Data Science

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```
#Load the ggplot library here.
library(ggplot2)
```

```
pioneer_valley_2013 <- read.csv("https://raw.githubusercontent.com/SDS-192-Intro/sds-192-labs/main/Day7-
pioneer_valley_2013_dictionary <- read.csv("https://raw.githubusercontent.com/SDS-192-Intro/sds-192-labs
```

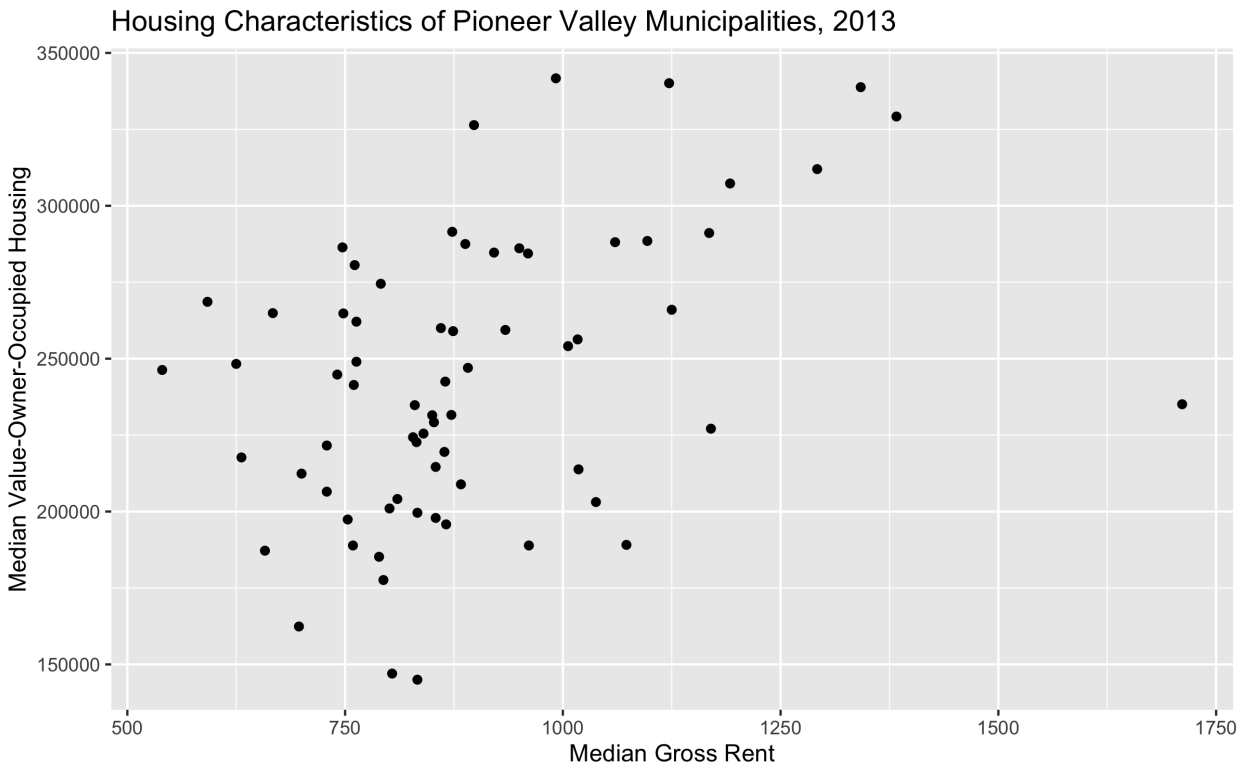
1. Check column names and values.

```
#Check the column names for pioneer_valley_2013. View what column names refer to via pioneer_valley_201
names(pioneer_valley_2013)
```

```
##  [1] "LEVELCD_NAME"       "STATE"              "COUNTY"
##  [4] "COMMUNITY"          "YEAR"               "TIME_TYPE"
##  [7] "CEN_MEDRENT"        "CEN_MEDOWNVAL"      "CEN_HUYEARBLT"
## [10] "RENT_COSTS30"       "MEDAGE_WF"          "PER_COMMNOTSNGLCAR"
## [13] "PER_COMMALONECAR"   "PER_COMMBIKE"       "PER_COMMCARPOOL"
## [16] "PER_COMMOTHER"      "PER_COMMPUBTRANS"   "PER_COMMWALK"
## [19] "PER_COMMWORKHOME"   "AVG_COMMUTETIME"    "WORK_OUTCOMM"
## [22] "WORK_INCOMM"
```

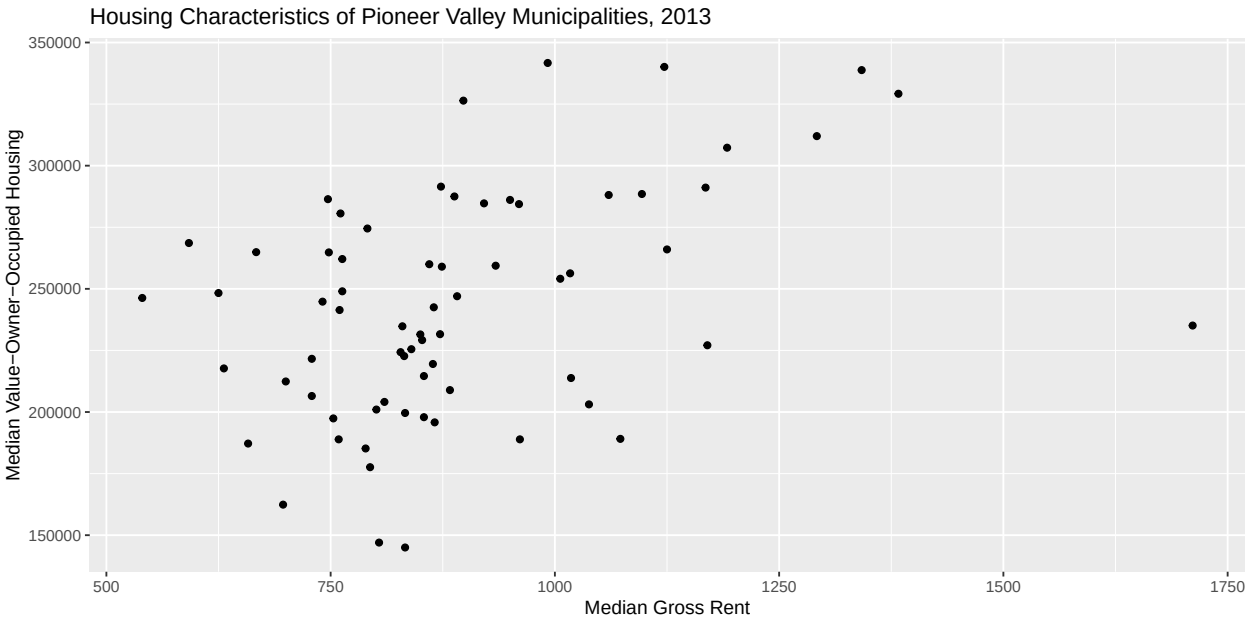
```
#View(pioneer_valley_2013_dictionary)
```

2. Recreate this image using the `ggplot()` function. (Full size image in your images folder)

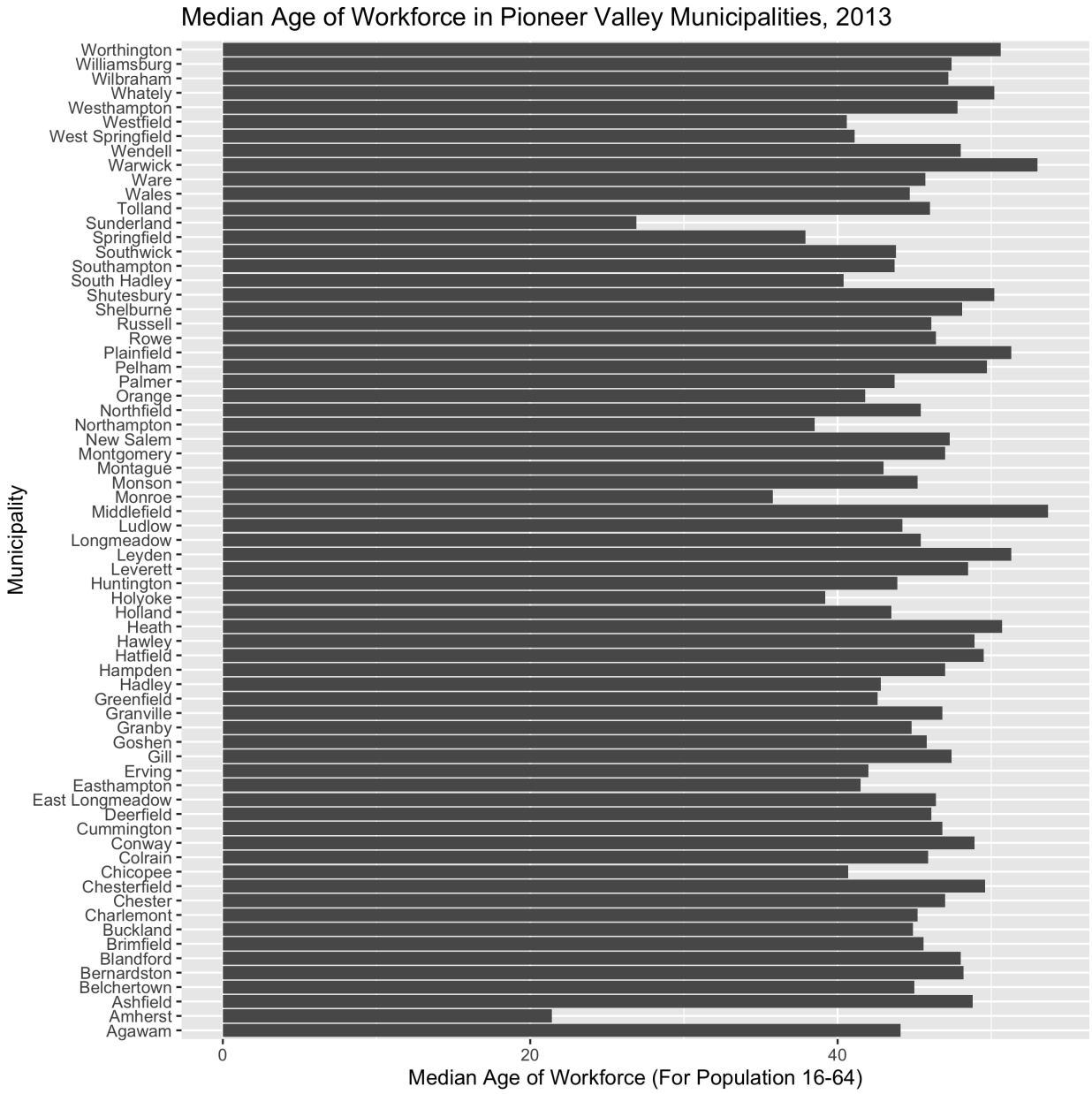



```
ggplot(pioneer_valley_2013,
       aes(x = CEN_MEDRENT,
           y = CEN_MEDOWNVAL)) +
  geom_point() +
  labs(title = "Housing Characteristics of Pioneer Valley Municipalities, 2013",
       x = "Median Gross Rent",
       y = "Median Value-Owner-Occupied Housing")
```

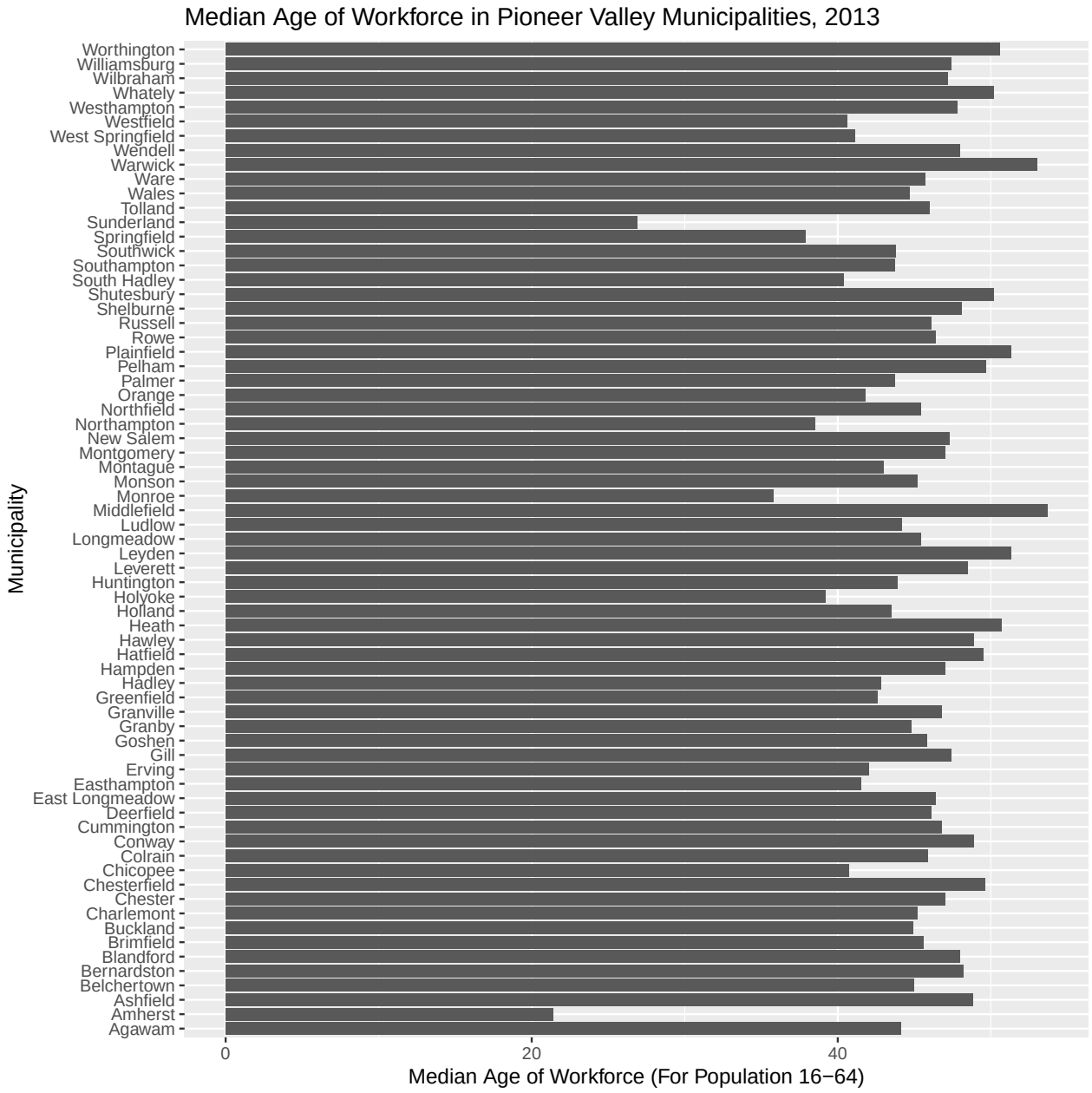
```
## Warning: Removed 1 rows containing missing values (geom_point).
```



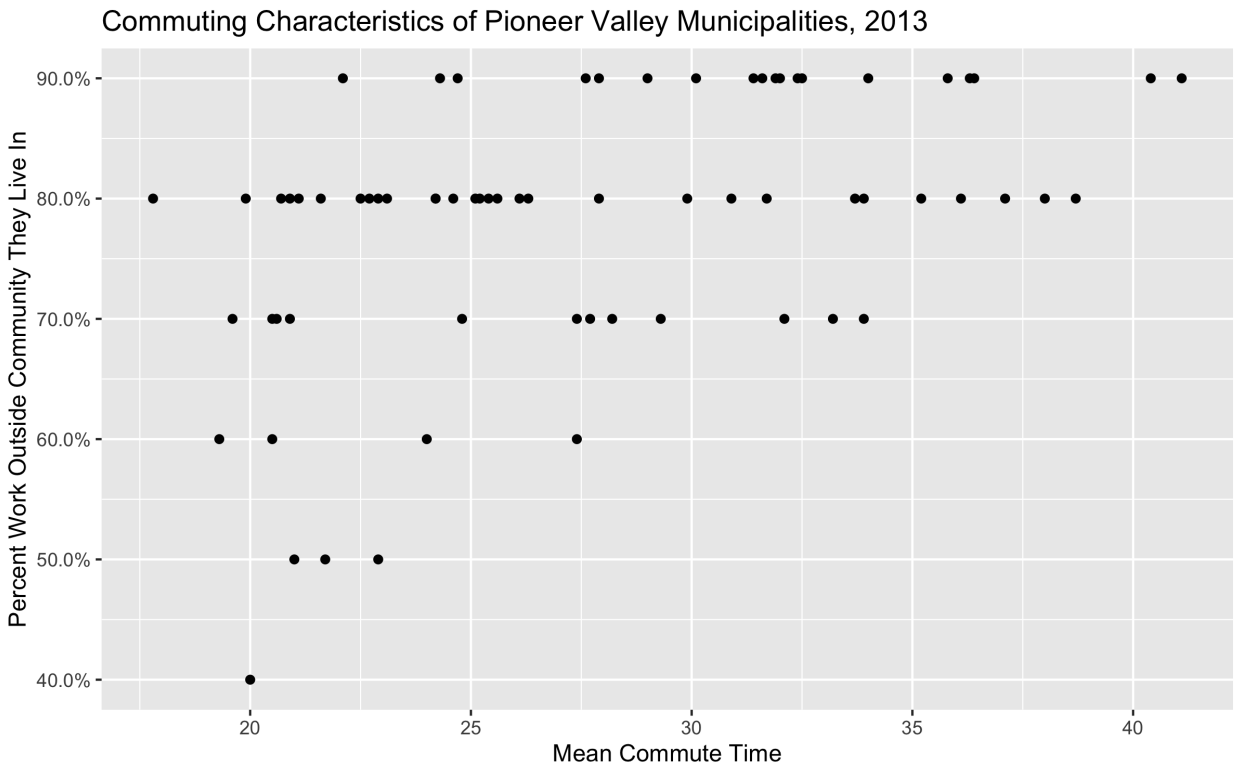
3. Recreate this image using the `ggplot()` function. (Full size image in your images folder)




```
ggplot(pioneer_valley_2013,
       aes(x = COMMUNITY,
           y = MEDAGE_WF)) +
  geom_col() +
  coord_flip() +
  labs(title = "Median Age of Workforce in Pioneer Valley Municipalities, 2013",
       x = "Municipality",
       y = "Median Age of Workforce (For Population 16-64)")
```

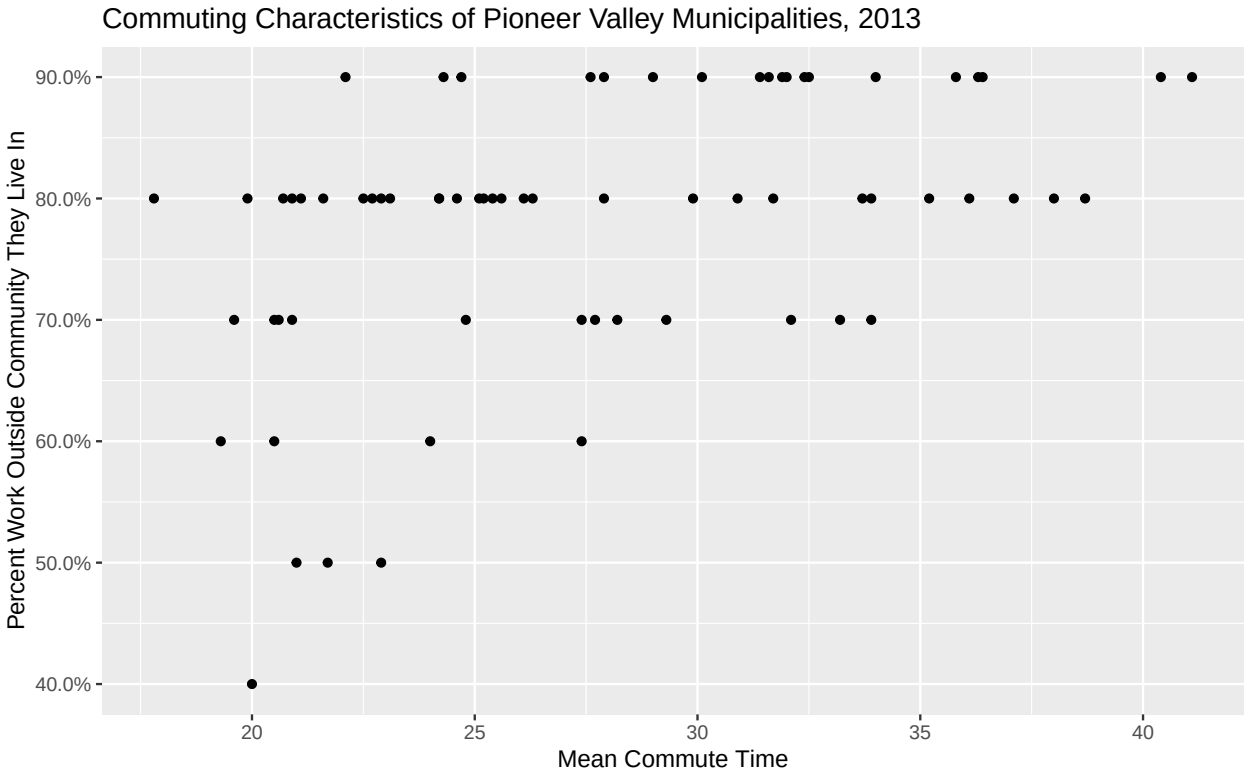


4. Recreate this image using the `ggplot()` function. (Full size image in your images folder)



Hint: We need the function scale_y_continuous(), and the labels argument needs to be set to `scales::percent`. Check the help pages for this function to see how to format this!

```
ggplot(pioneer_valley_2013,
       aes(x = AVG_COMMUTETIME,
           y = WORK_OUTCOMM)) +
  geom_point() +
  scale_y_continuous(labels = scales::percent) +
  labs(title = "Commuting Characteristics of Pioneer Valley Municipalities, 2013",
       x = "Mean Commute Time",
       y = "Percent Work Outside Community They Live In")
```



5. Which of the following does each point on this plot indicate?

- A municipality