COMPSCIX 415.2 Homework 2

Santosh Kanutala

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****My Github repository for my assignments can be found below URL: (https://github.com/santumagic/compscix-415-2assignments.git)****

```
library(tidyverse)
library(mdsr)
```

Section 3.2.4: all excercises

Question 1:

```
ggplot(data = mpg)
```


Answer:

From the above function, I see a blank graph, which is a coordinate system.

Question 2:

```
glimpse(mpg)
```

```
## Observations: 234
## Variables: 11
## $ manufacturer <chr> "audi", "audi", "audi", "audi", "audi", "audi", "...
## $ model        <chr> "a4", "a4", "a4", "a4", "a4", "a4", "a4", "a4 qua...
## $ displ        <dbl> 1.8, 1.8, 2.0, 2.0, 2.8, 2.8, 3.1, 1.8, 1.8, 2.0,...
## $ year         <int> 1999, 1999, 2008, 2008, 1999, 1999, 2008, 1999, 1...
## $ cyl          <int> 4, 4, 4, 4, 6, 6, 6, 4, 4, 4, 4, 6, 6, 6, 6, 6, 6...
## $ trans        <chr> "auto(l5)", "manual(m5)", "manual(m6)", "auto(av)...
## $ drv          <chr> "f", "f", "f", "f", "f", "f", "f", "4", "4", "4",...
## $ cty          <int> 18, 21, 20, 21, 16, 18, 18, 18, 16, 20, 19, 15, 1...
## $ hwy          <int> 29, 29, 31, 30, 26, 26, 27, 26, 25, 28, 27, 25, 2...
## $ fl           <chr> "p", "p", "p", "p", "p", "p", "p", "p", "p", "p",...
## $ class        <chr> "compact", "compact", "compact", "compact", "comp...
```

Answer:

There are 234 rows (observations) and 11 columns (varibles).

Question 3:

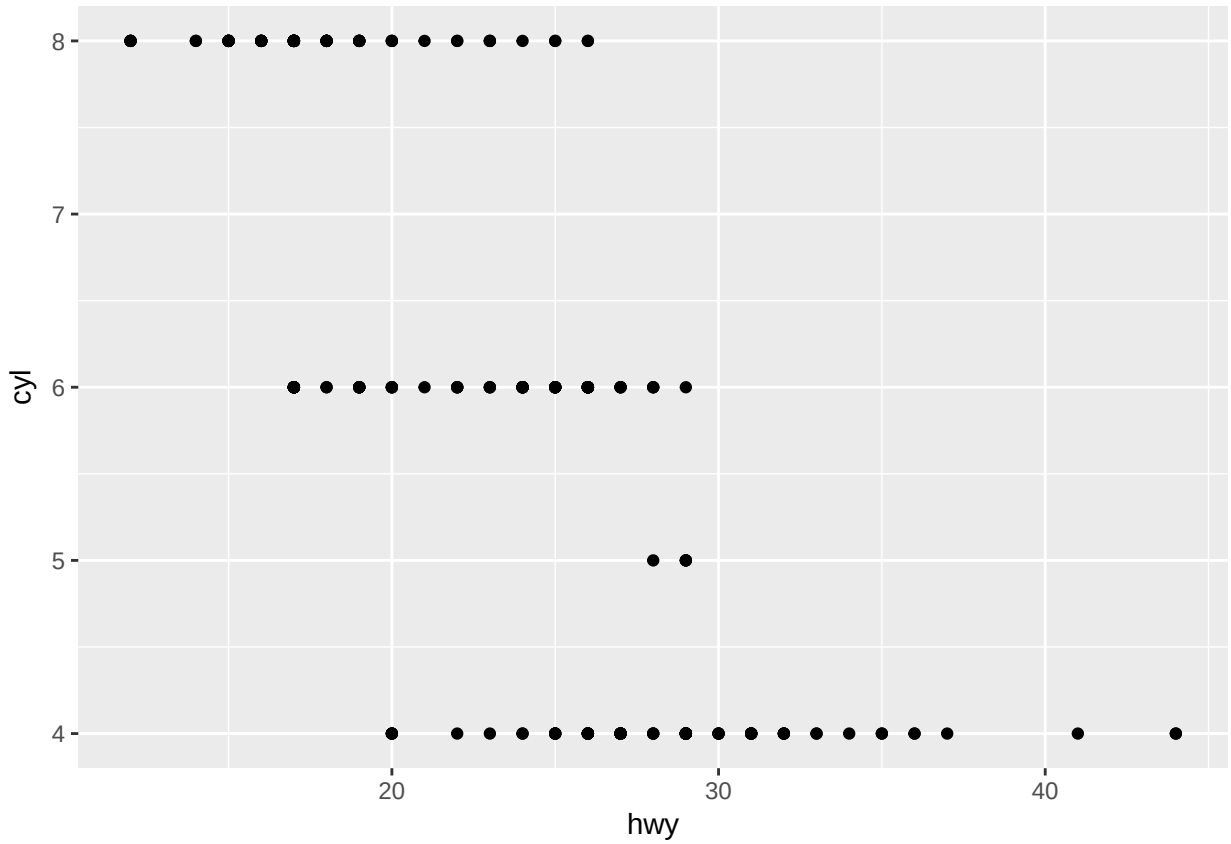
```
?mpg
```

Answer:

drv variable describes the drive type of the vehicle like f = front wheel drive, r = rear wheel drive etc.

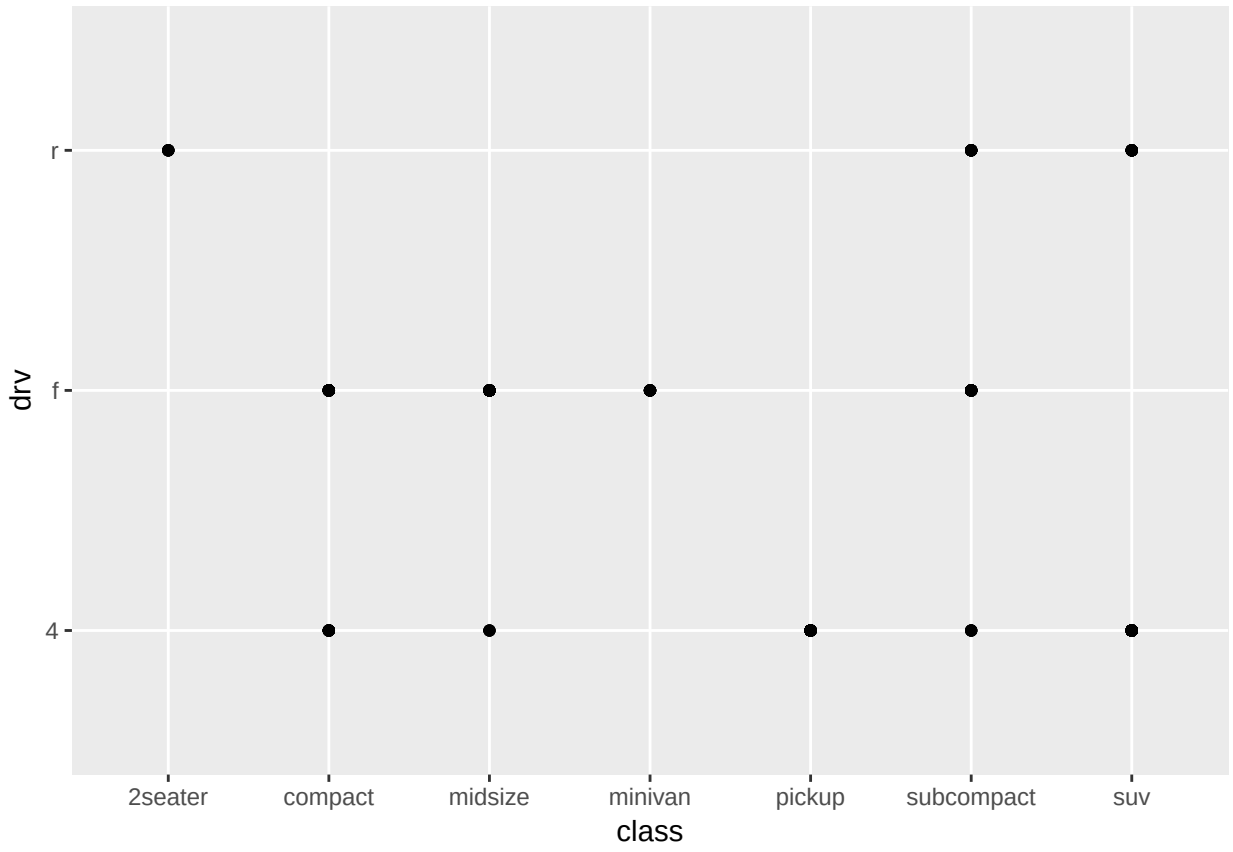
Question 4:

```
ggplot(data = mpg) + geom_point(mapping = aes(x = hwy, y = cyl))
```



Question 5:

```
ggplot(data = mpg) + geom_point(mapping = aes(x = class, y = drv))
```



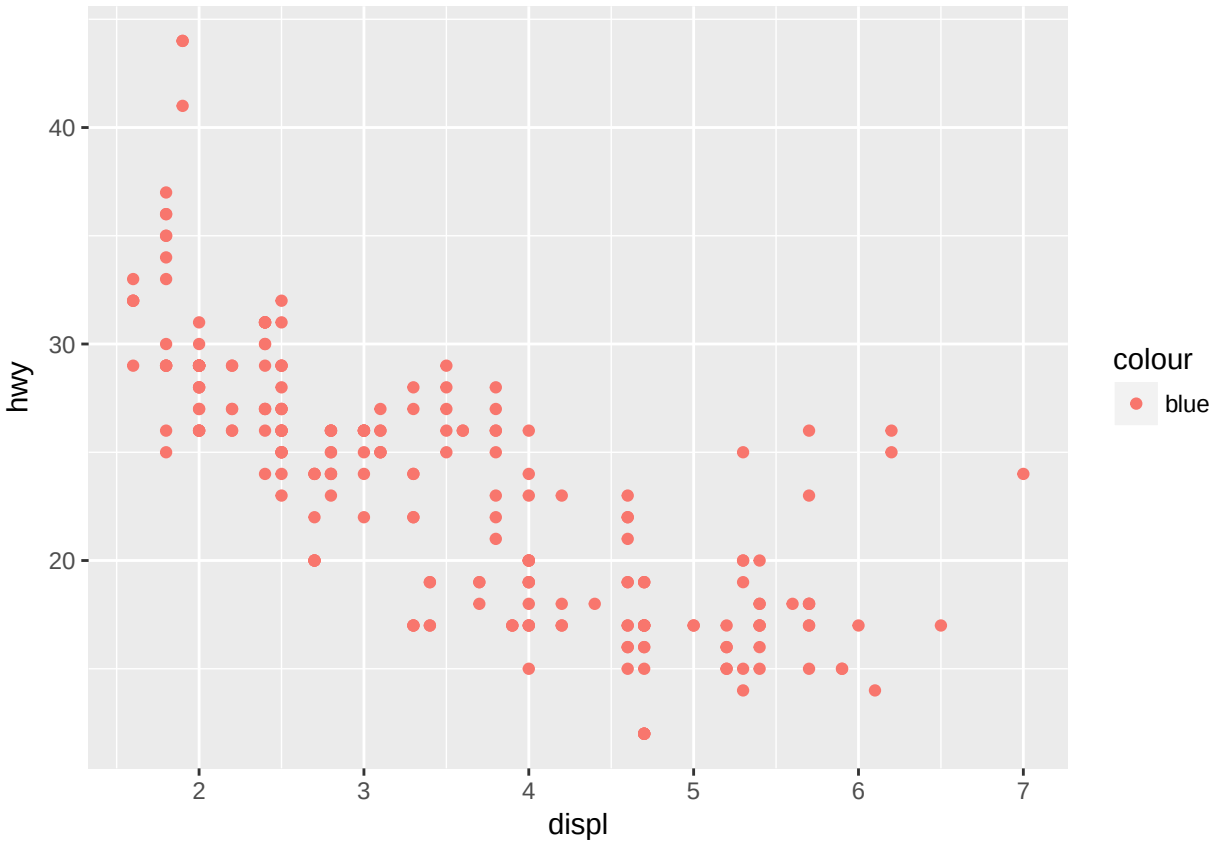
Answer:

The graph is not useful because there is no clear relation between drv and class of a vehicle. For example, there are no front wheel and rear wheel drive types are 2 seater vehicles.

Section 3.3.1: all excercises

Question 1:

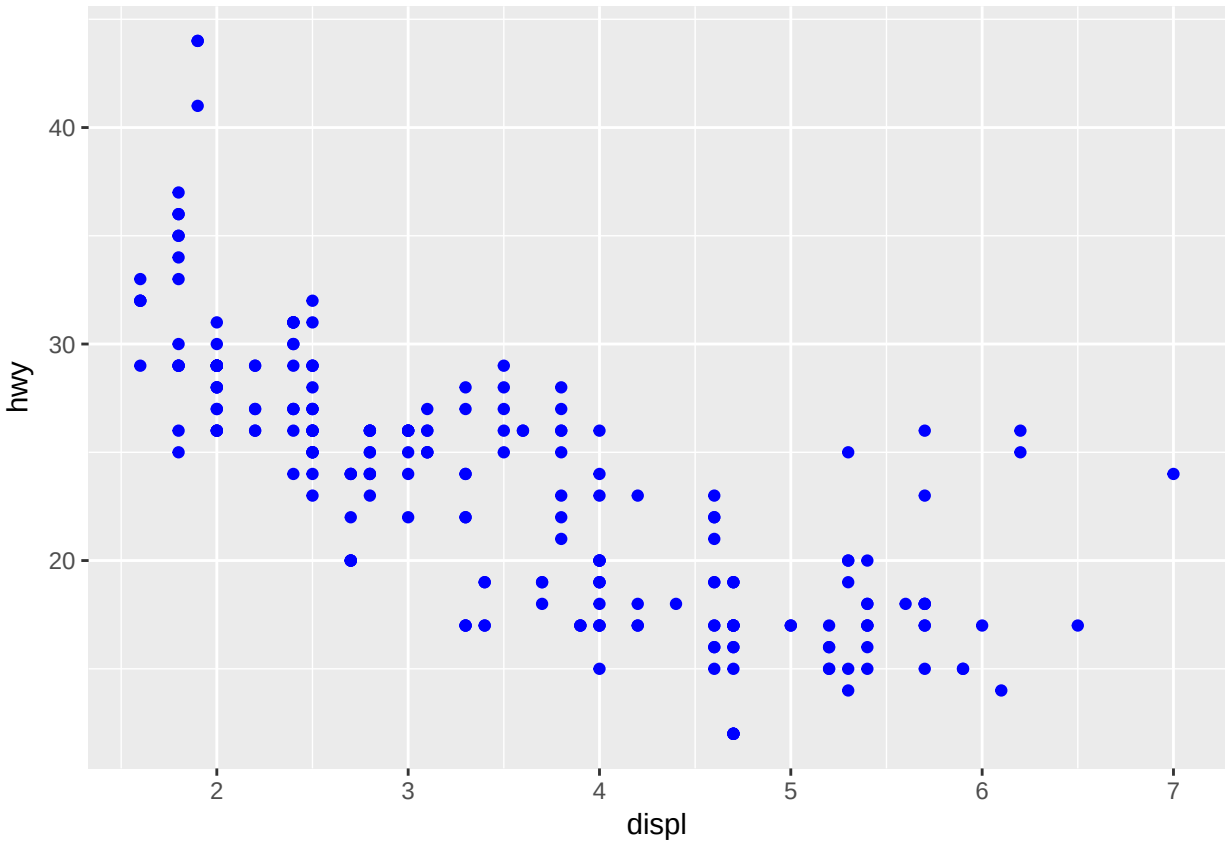
```
ggplot(data = mpg) +
  geom_point(mapping = aes(x = displ, y = hwy, color = "blue"))
```



##**Answer:**

In the above code we are trying to map the three aesthetics x, y, color to three variables of the dataset. But for the third aesthtic is assigned as a text "blue" same as displ and hwy. But we can manually override the color by placing the level outside of aes as shown below.

```
ggplot(data = mpg) + geom_point(mapping = aes(x = displ, y = hwy), color = "blue")
```



Question 2:

```
?mpg
```

Answer:

By looking at the above sample data, I can devide the variables as below.

Categorical

manufacturer
model
cyl
trans
drv
fl
class

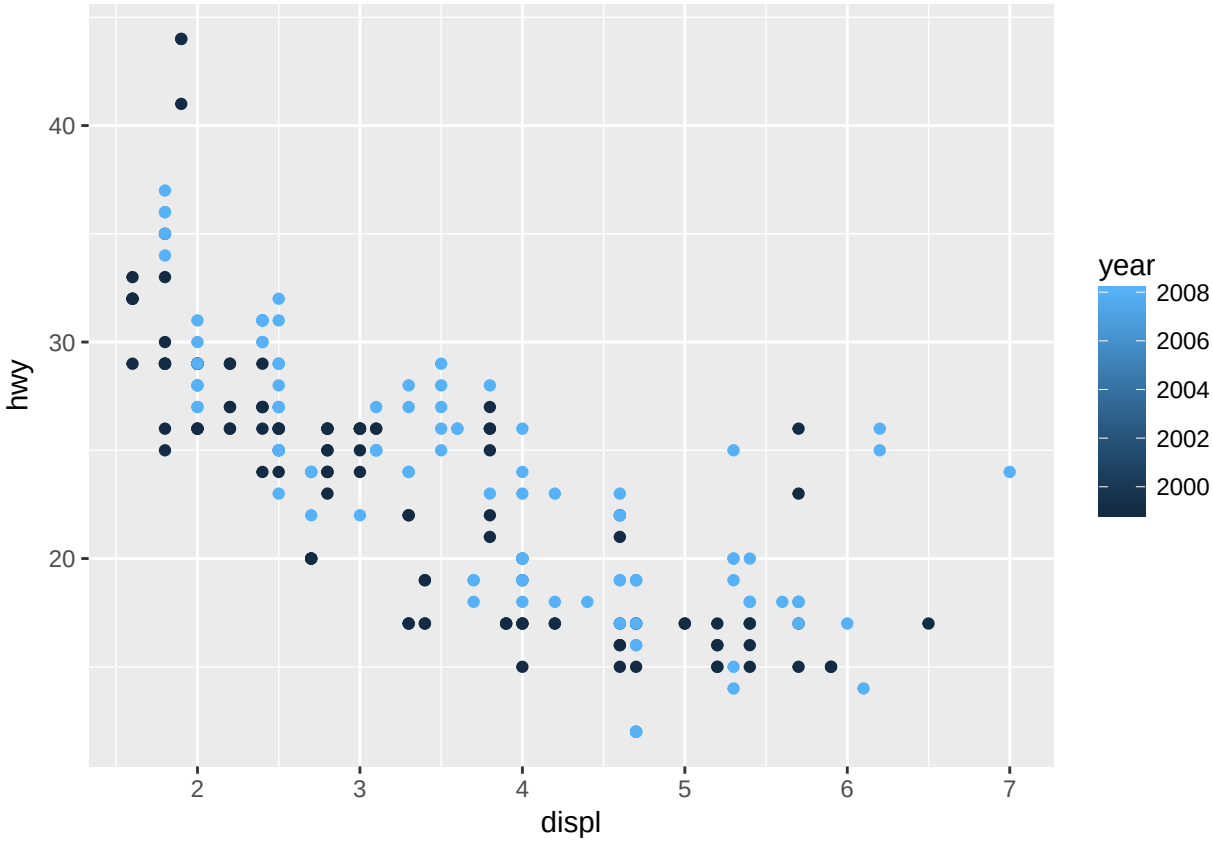
Continuous

displ
year

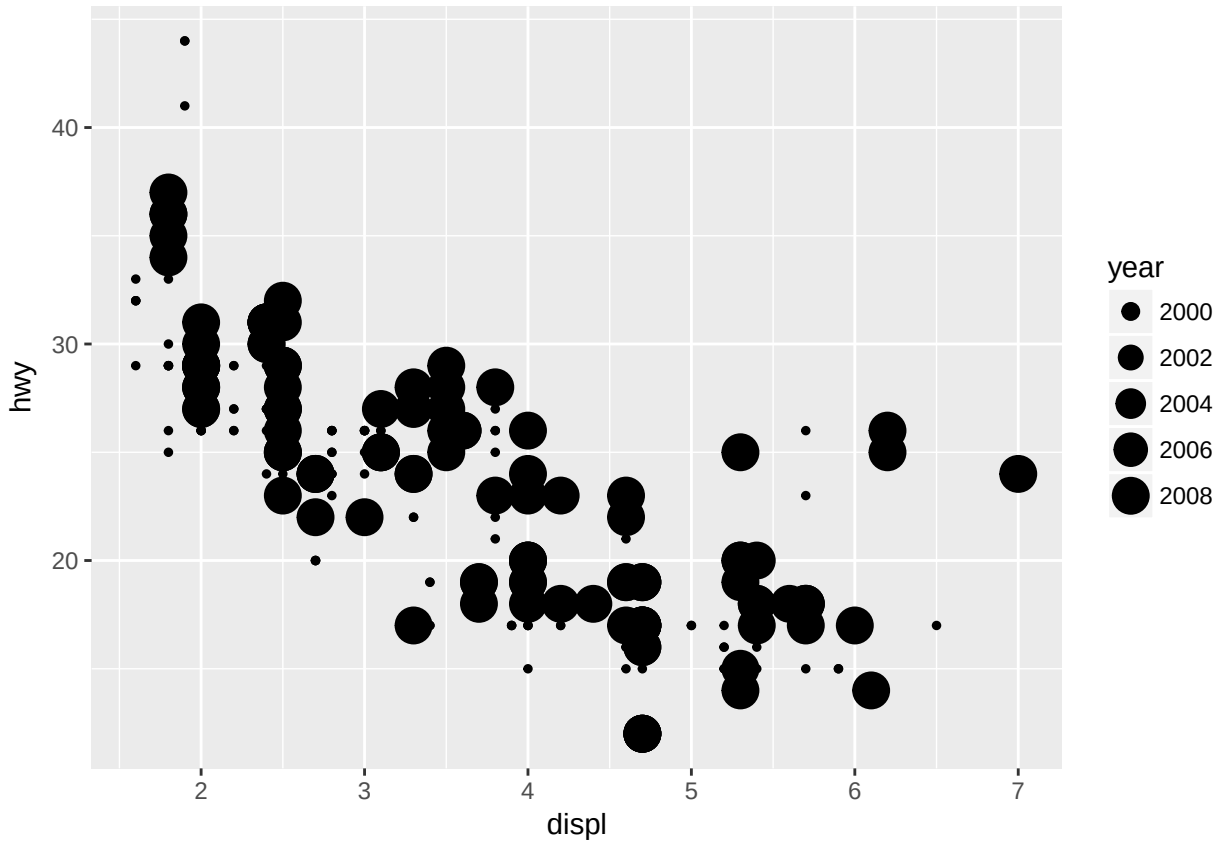
cty
hwy

Question 3:

```
# Left
ggplot(data = mpg) + geom_point(mapping = aes(x = displ, y = hwy, color = year))
```




```
# Right
ggplot(data = mpg) + geom_point(mapping = aes(x = displ, y = hwy, size = year))
```




```
##ggplot(data = mpg) + geom_point(mapping = aes(x = displ, y = hwy, shape = year))
```

Answer: