Lab 1 – Introduction to R and R Markdown

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```
library(ggplot2)
library(gridExtra)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

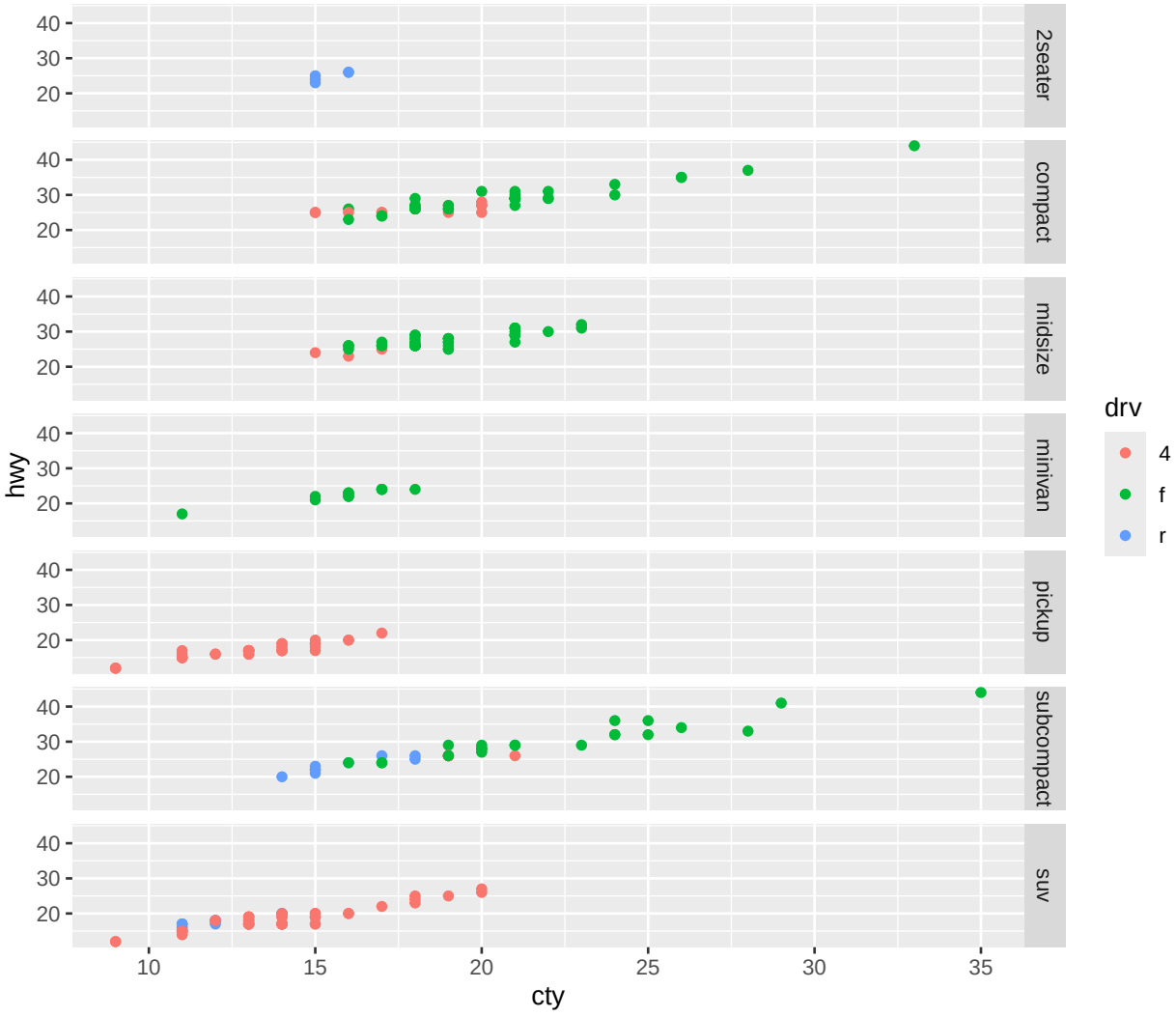
```
## The following object is masked from 'package:gridExtra':
##
##     combine
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

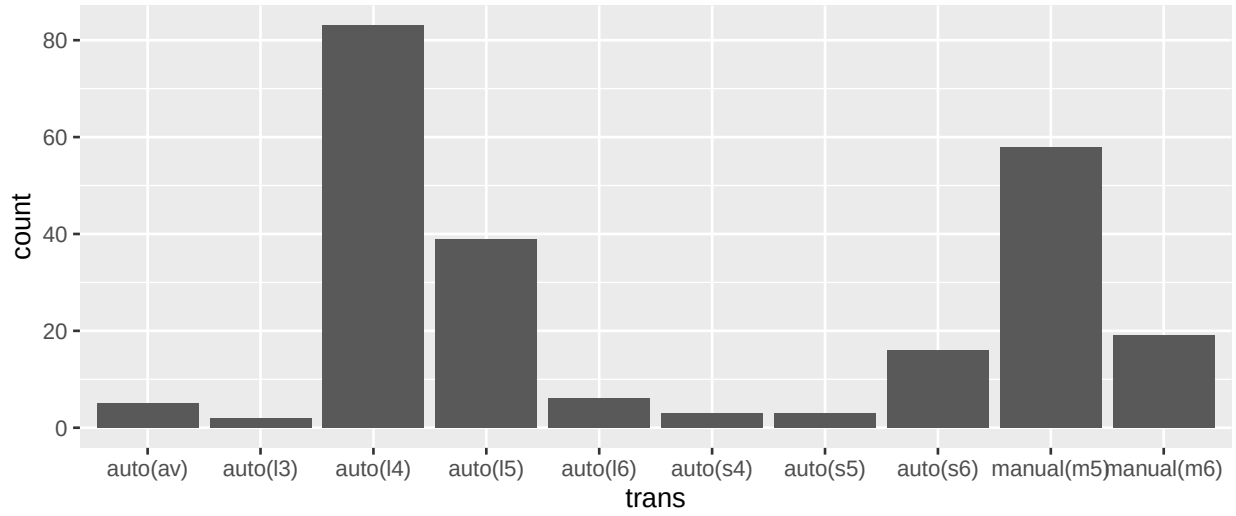
```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

Question 1

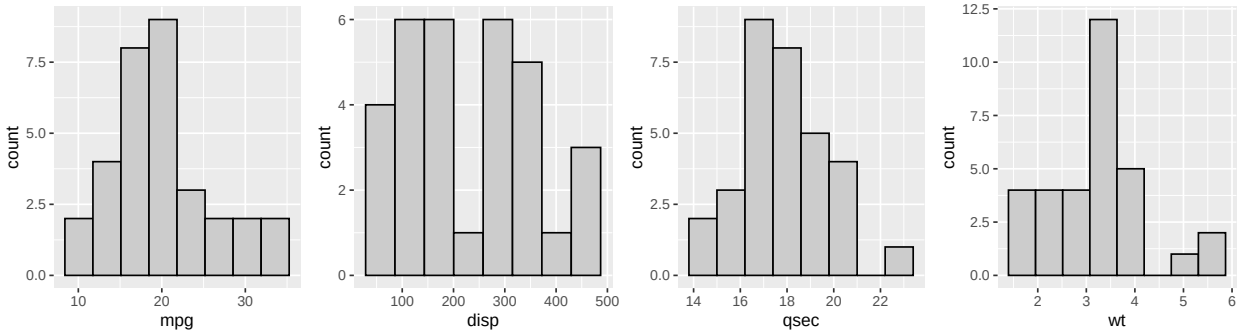
```
## Plot 1
ggplot(mpg, aes(cty, hwy, color = drv)) +
  geom_point() +
  facet_grid(rows = vars(class))
```




```
## Plot 2
ggplot(mpg, aes(trans)) +
  geom_bar()
```




```
## Plot 3
p1 <- ggplot(mtcars, aes(mpg)) +
  geom_histogram(color = "black", fill = "gray80", bins = 8)
p2 <- ggplot(mtcars, aes(disp)) +
  geom_histogram(color = "black", fill = "gray80", bins = 8)
p3 <- ggplot(mtcars, aes(qsec)) +
  geom_histogram(color = "black", fill = "gray80", bins = 8)
p4 <- ggplot(mtcars, aes(wt)) +
  geom_histogram(color = "black", fill = "gray80", bins = 8)
grid.arrange(p1, p2, p3, p4, nrow = 1)
```



Question 2

1. **Joyce Gill**

- *one*
- *two*

2. **Classmate**

- *one*
- *two*

Question 3

```
x <- c(1.42, 4.7, 3.9, 8.14, 4.19, 2.55, 5.85, 2.96, 3.56, 4.06)
mean(x, trim = 0.1)
```

```
## [1] 3.9712
```

It creates a vector x with 10 numbers.

trim = 0.1 means: sort the values, then remove 10% from each tail. With 10 values, that trims 1 smallest and 1 largest value.

Then it computes the mean of the remaining 8 numbers, which reduces the influence of outliers (like 8.14).

Question 4

```
x <- c(3, 6, 4, 9, 2, NA, 7)
median(x)
```

```
## [1] NA
```

It returns NA because the vector contains an NA, and by default median() does not ignore missing values.To fix, remove NA.

Question 5

```
## Read dataset from URL
planet <- read.csv("https://collinn.github.io/data/HappyPlanet.csv")
head(planet)
```

```
##     Country Region Happiness LifeExpectancy Footprint  HLY   HPI HPIRank
## 1   Albania      7       5.5           76.2       2.2 41.7 47.91      54
## 2   Algeria      3       5.6           71.7       1.7 40.1 51.23      40
## 3    Angola      4       4.3           41.7       0.9 17.8 26.78     130
## 4 Argentina      1       7.1           74.8       2.5 53.4 58.95      15
## 5   Armenia      7       5.0           71.7       1.4 36.1 48.28      48
## 6 Australia      2       7.9           80.9       7.8 63.7 36.64     102
##   GDPperCapita   HDI Population
## 1         5316 0.801       3.15
## 2         7062 0.733      32.85
## 3         2335 0.446      16.10
## 4        14280 0.869      38.75
## 5         4945 0.775       3.02
## 6        31794 0.962      20.40
```

1. An observation is one country's row. There are 143 total observations (countries).
2. There are 11 variables. (e.g. country, happiness. For the observation Albania, Happiness = 5.5 (and LifeExpectancy = 76.2, etc.