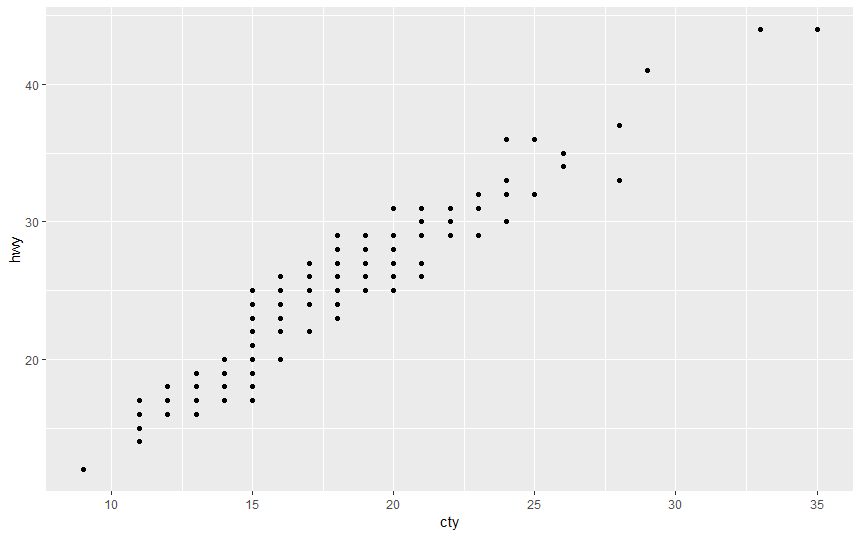
**3.8.1 Exercises**

1. What is the problem with this plot? How could you improve it?

**ggplot**(data = mpg, mapping = **aes**(x = cty, y = hwy)) +

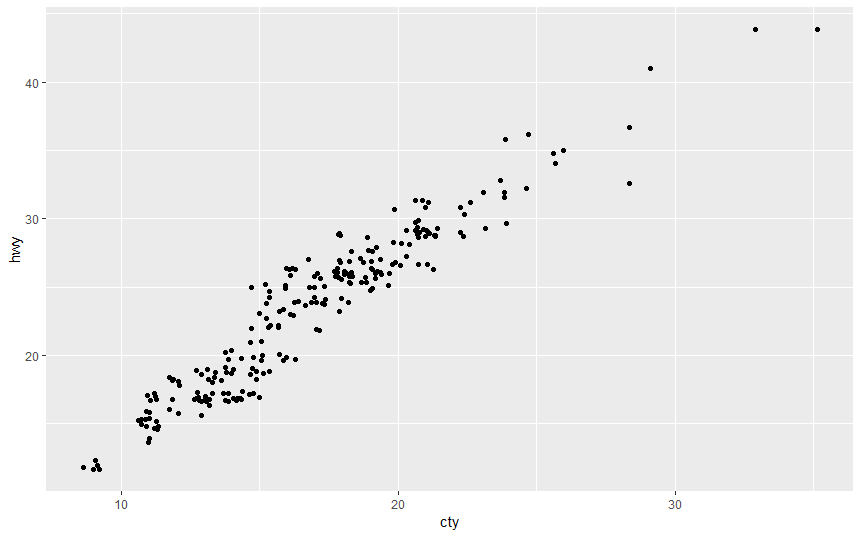
**geom\_point**()



There is a problem of over plotting because there are multiple combinations for each hwy and cty which can be solved by using “positon=jitters”

ggplot(data = mpg, mapping = aes(x = cty, y = hwy)) +

geom\_point(position="jitter")



1. What parameters to geom\_jitter() control the amount of jittering?

`width’ controls for vertical displacement.

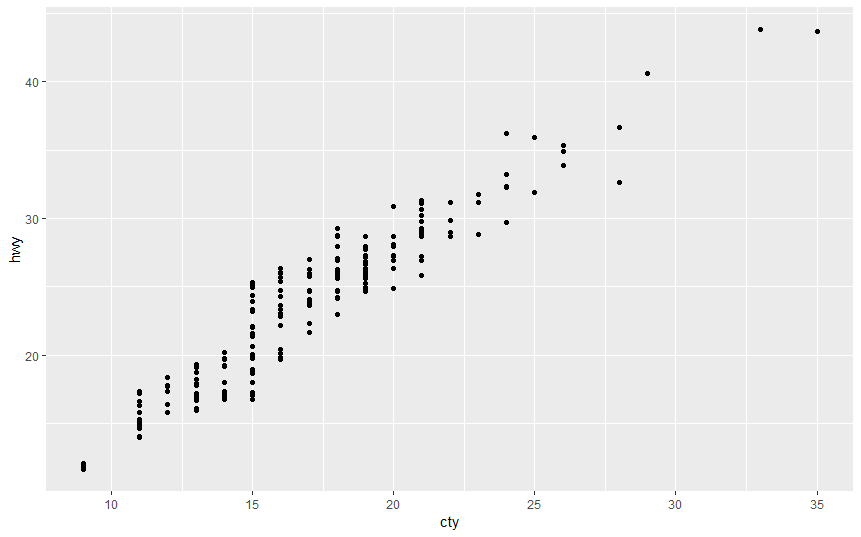
`height’ controls for horizontal displacement.

Examples

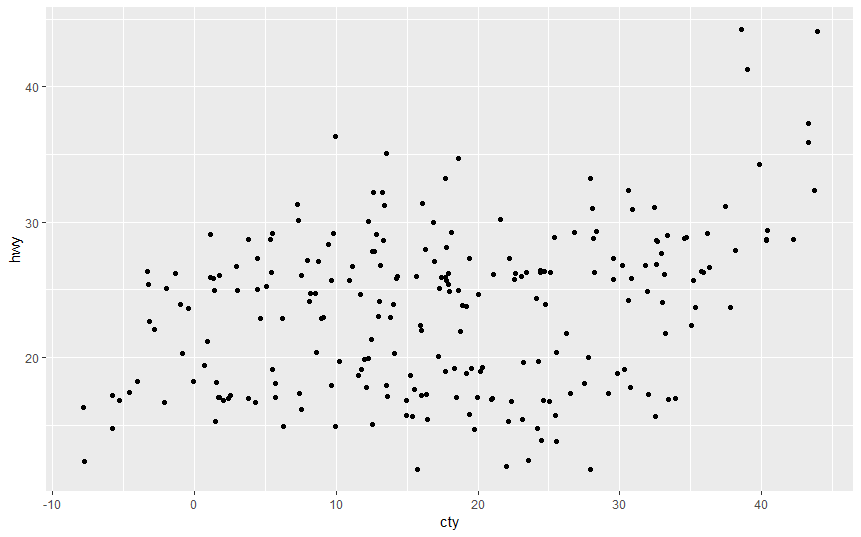
No horizontal jitter

ggplot(data = mpg, mapping = aes(x = cty, y = hwy)) +

geom\_jitter(width = 0)



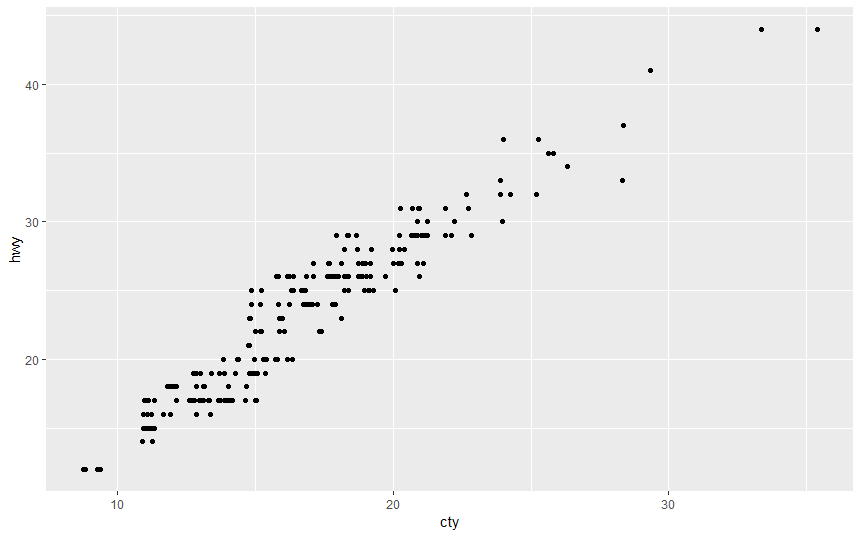
Too much horizontal jitter



No horizontal Jitter

ggplot(data = mpg, mapping = aes(x = cty, y = hwy)) +

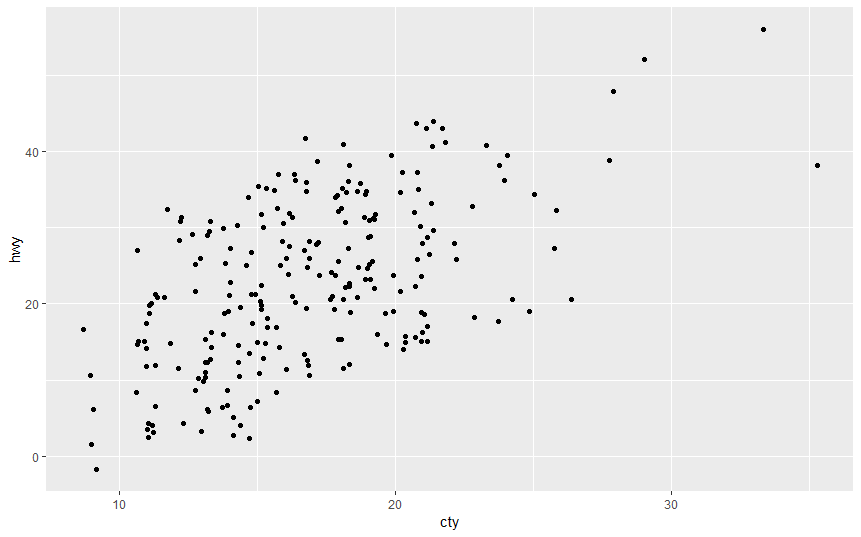
geom\_jitter(height = 0)



Too much horizontal jiiter

ggplot(data = mpg, mapping = aes(x = cty, y = hwy)) +

geom\_jitter(height = 15)



For normal plot as in geom\_point in qn. 1

ggplot(data = mpg, mapping = aes(x = cty, y = hwy)) +

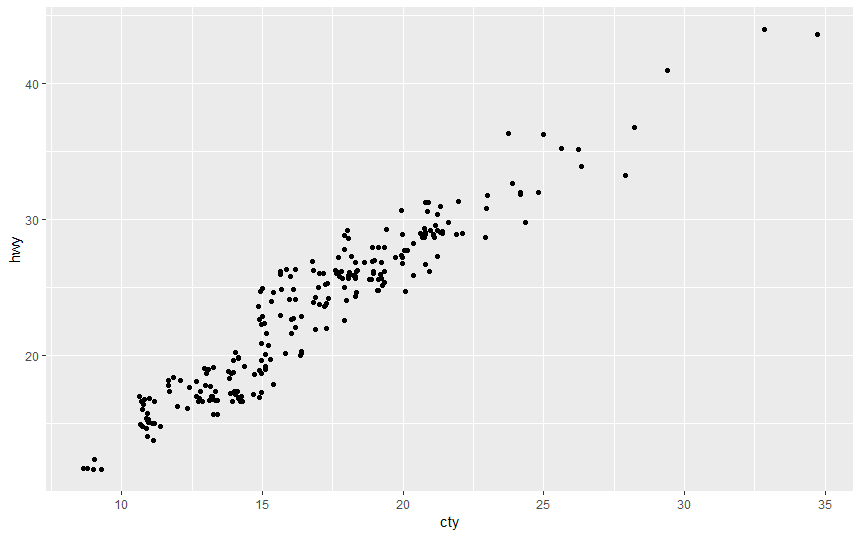
geom\_jitter(height = 15)

1. Compare and contrast geom\_jitter() with geom\_count().

The geom\_jitter() adds random variations to the location of points on the plot (jittering) ,this reduces over plotting.

ggplot(data = mpg, mapping = aes(x = cty, y = hwy)) +

geom\_jitter()



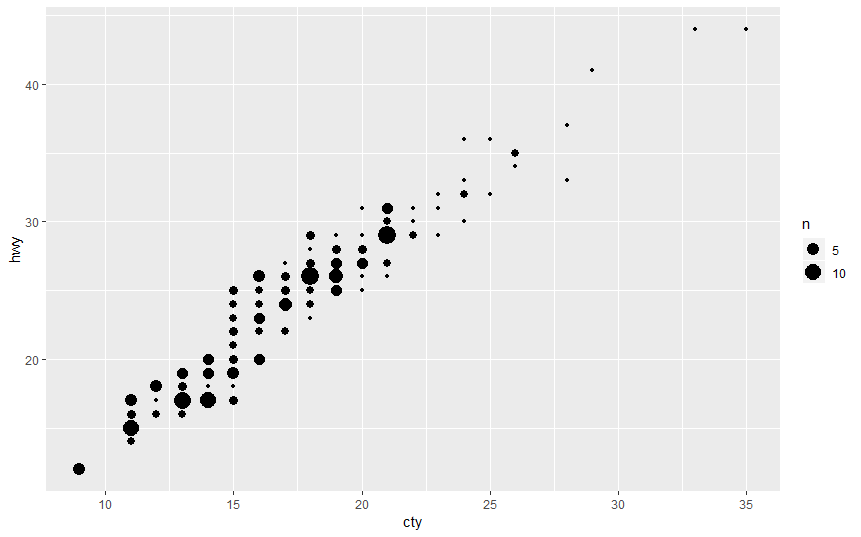
The geom\_count sizes the points the points relative to the number of observations.

Combinations of (`x`, `y`) values with more observations will be larger than those with fewer observations.

#geom\_count

ggplot(data = mpg, mapping = aes(x = cty, y = hwy)) +

geom\_count()

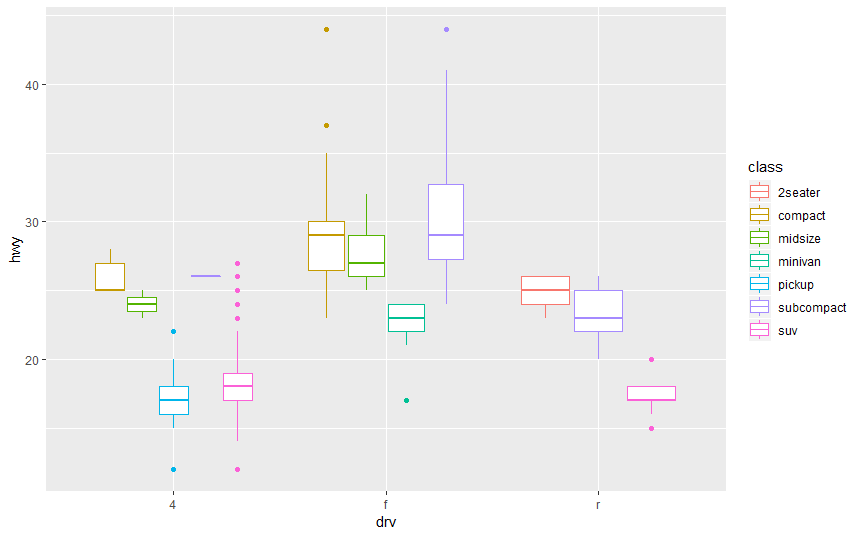


1. What’s the default position adjustment for geom\_boxplot()? Create a visualisation of the mpgdataset that demonstrates it.

The default position for geom\_boxplot() is dodge2, which is a shortcut for position\_dodge2.

ggplot(data = mpg, aes(x = drv, y = hwy, colour = class)) +

geom\_boxplot()



#Boxplots & position identity

ggplot(data = mpg, aes(x = drv, y = hwy, colour = class)) +

geom\_boxplot(position = "identity")

