Introduction to R

Session 5 – Advanced Graphics

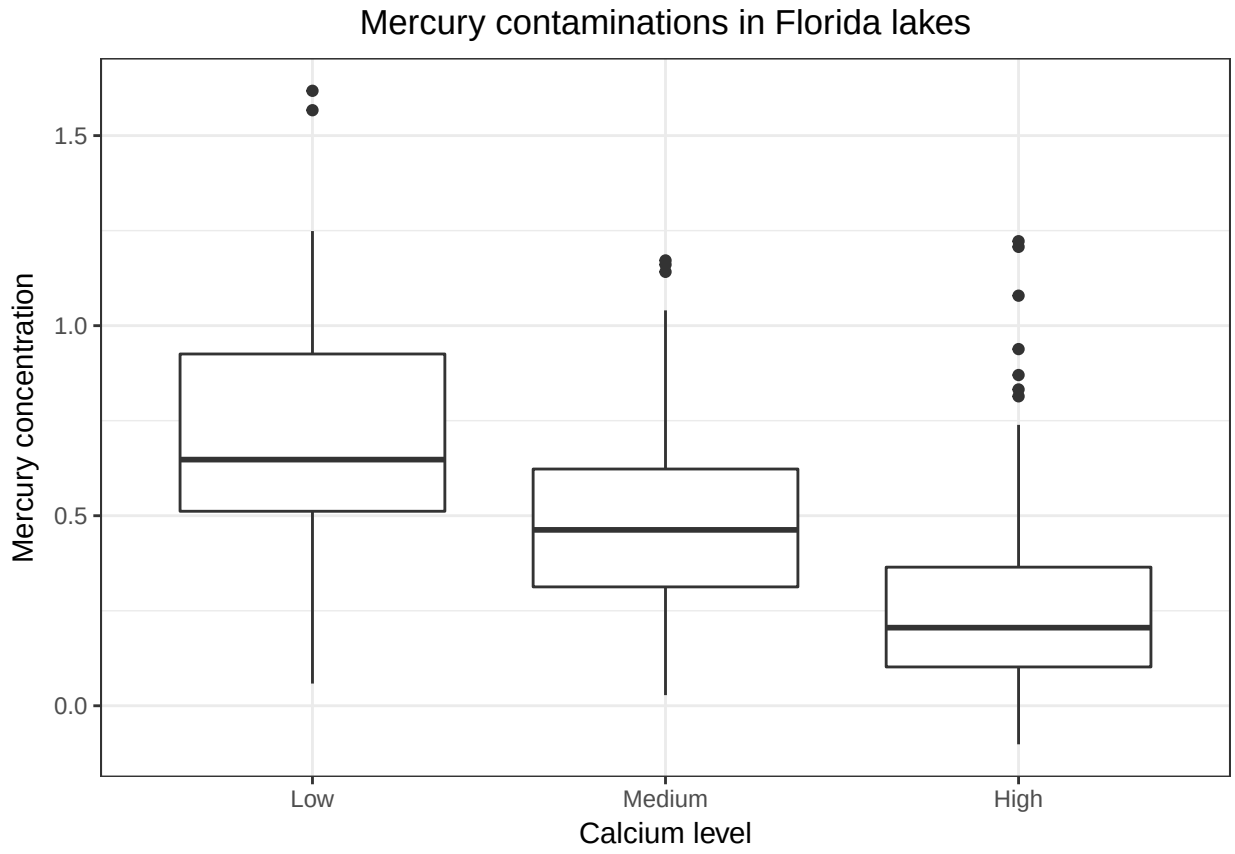
Statistical Consulting Centre

20 July, 2017

1. Boxplot

1. Draw boxplots showing the distribution of `Mercury` for each of the levels of `Calcium`. The boxplot should look exactly like

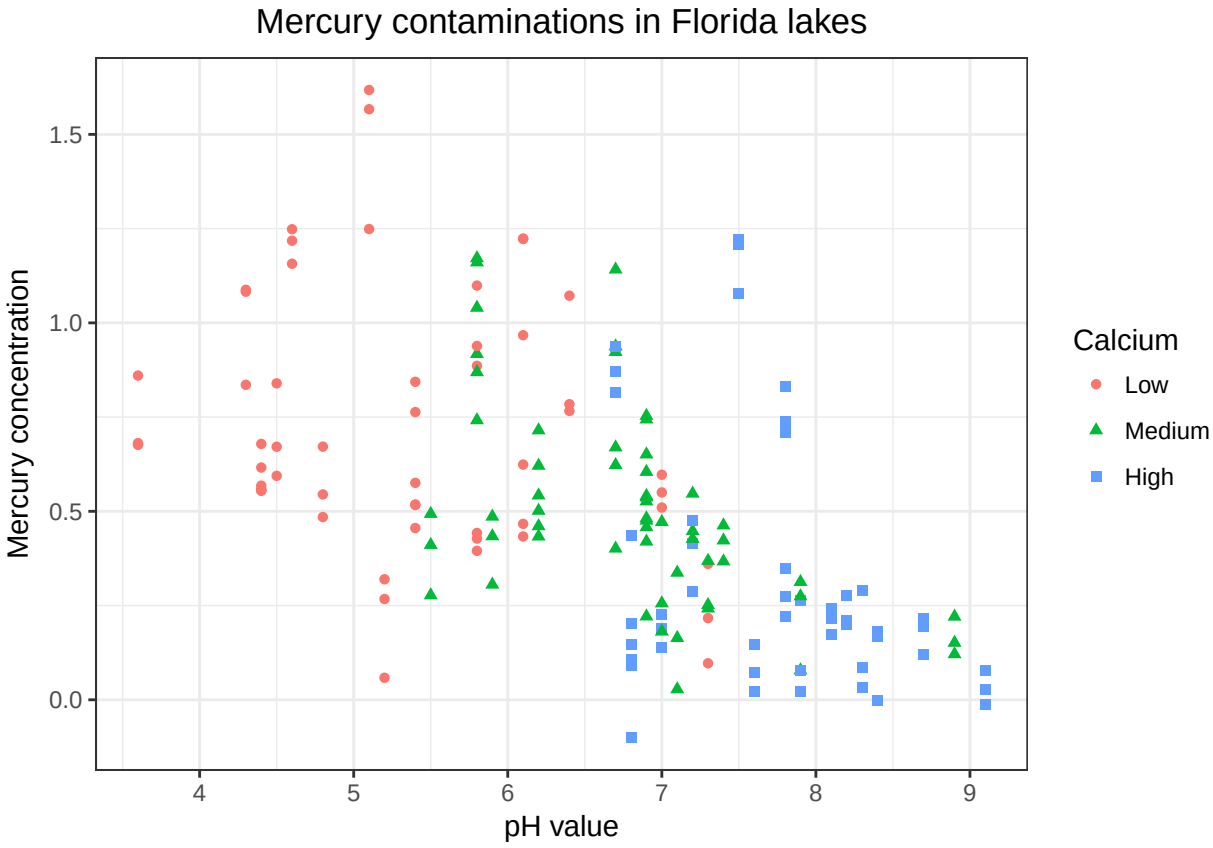
```
ggplot(joined.long.df, aes(Calcium, Mercury)) +
  geom_boxplot()+
  labs(title ="Mercury contaminations in Florida lakes",
       x = "Calcium level", y = "Mercury concentration") +
  theme_bw()  +
  theme(plot.title = element_text(hjust = 0.5))
```



2. Scatterplot

Draw a scatter plot which shows the relationship between `pH` and `Mercury` for each of the `Calcium` levels. The scatter plot should look exactly the same as

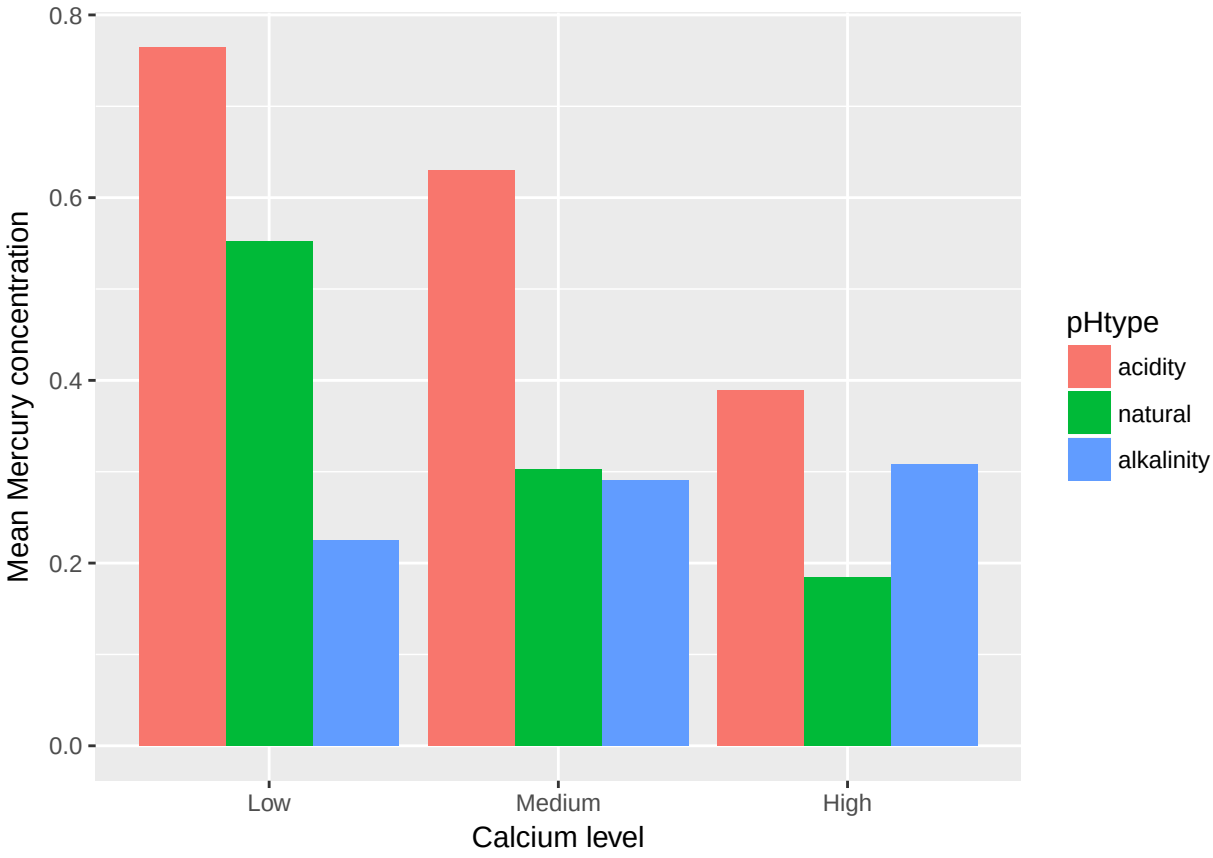
```
ggplot(joined.long.df, aes(x = pH, y = Mercury,
                           col = Calcium, shape = Calcium)) +
  geom_point() +
  labs(title ="Mercury contaminations in Florida lakes",
       x = "pH value", y = "Mercury concentration") +
  theme_bw()  +
  theme(plot.title = element_text(hjust = 0.5))
```



3. Barplot

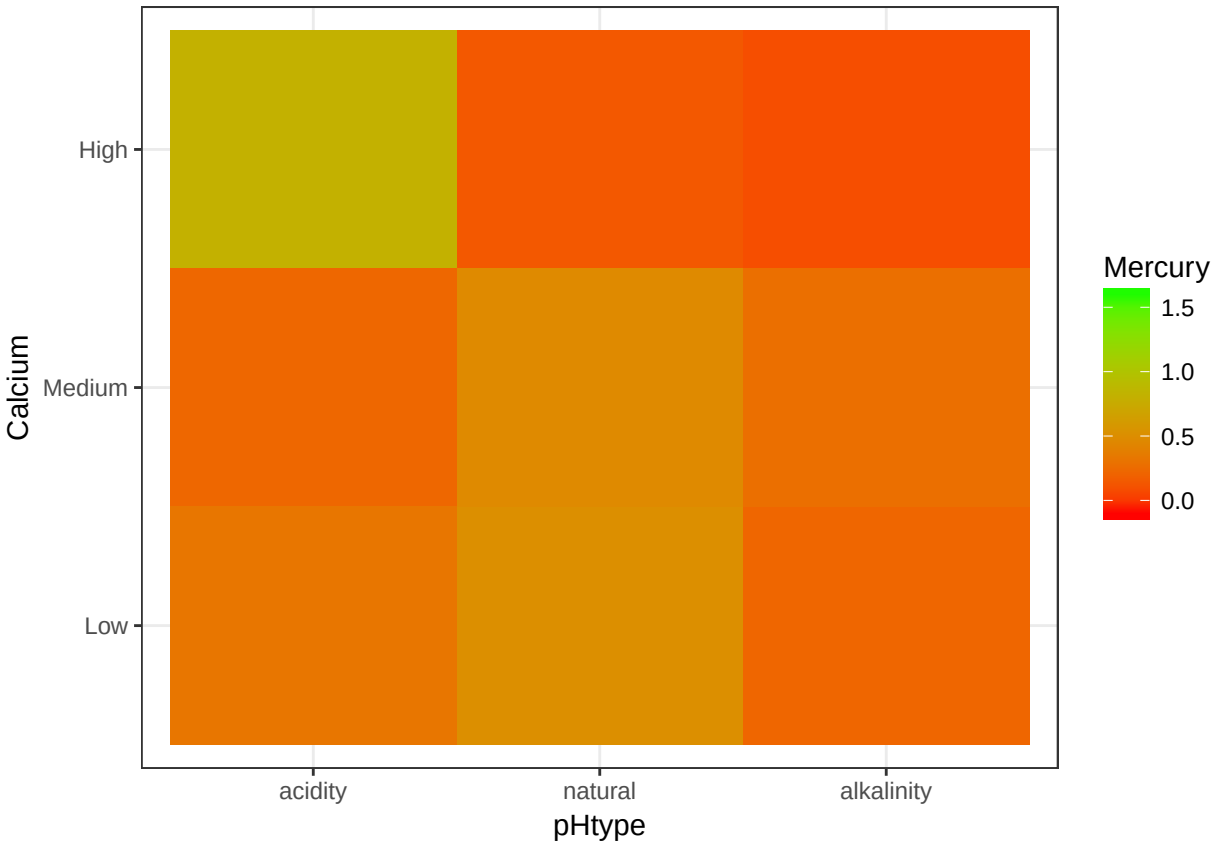
Draw a juxtaposed barplot that shows the average `Mercury` concentration for the six combinations of `Calcium` and `pHtype`. The graph should look exactly the same as

```
joined.long.df %>%
  group_by(Calcium, pHtype) %>%
  summarise(Mean = mean(Mercury)) %>%
  ggplot(aes(x = Calcium, y = Mean,
                           fill = pHtype)) +
  geom_col(position = "dodge")  +
  labs(x = "Calcium level", y = "Mean Mercury concentration")
```



4. Heatmap

```
ggplot(joined.long.df, aes(x = pHtype, y = Calcium)) +
  geom_tile(aes(fill = Mercury))  +
  scale_fill_gradient(low = "red", high = "green") +
  theme_bw()
```


Calcium
High
Medium
Low
acidity
natural
alkalinity
pHtype
Mercury
1.5
1.0
0.5
0.0