

Homework 4 Part 1

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Part 1

In this part of the code, we are going to tidy up our dataset.

```
## Gather the pups data to long format

pups_data <- read_csv("./FAS_pups.csv") %>% # Load the data
  clean_names() %>% # Clean Names
  mutate(id = 1:313) %>% # Create Pup ID
  gather(key = outcome,
         value = post_natal_days, pd_ears:pd_walk) %>%
  # Gather to long format
  separate(outcome, into = c("remove", "outcome"), sep = "_") %>%
  # Clean names by separate
  select(-remove) # Remove dummy variable

## Parsed with column specification:
## cols(
##   `Litter Number` = col_character(),
##   Sex = col_integer(),
##   `PD ears` = col_integer(),
##   `PD eyes` = col_integer(),
##   `PD pivot` = col_integer(),
##   `PD walk` = col_integer()
## )
```

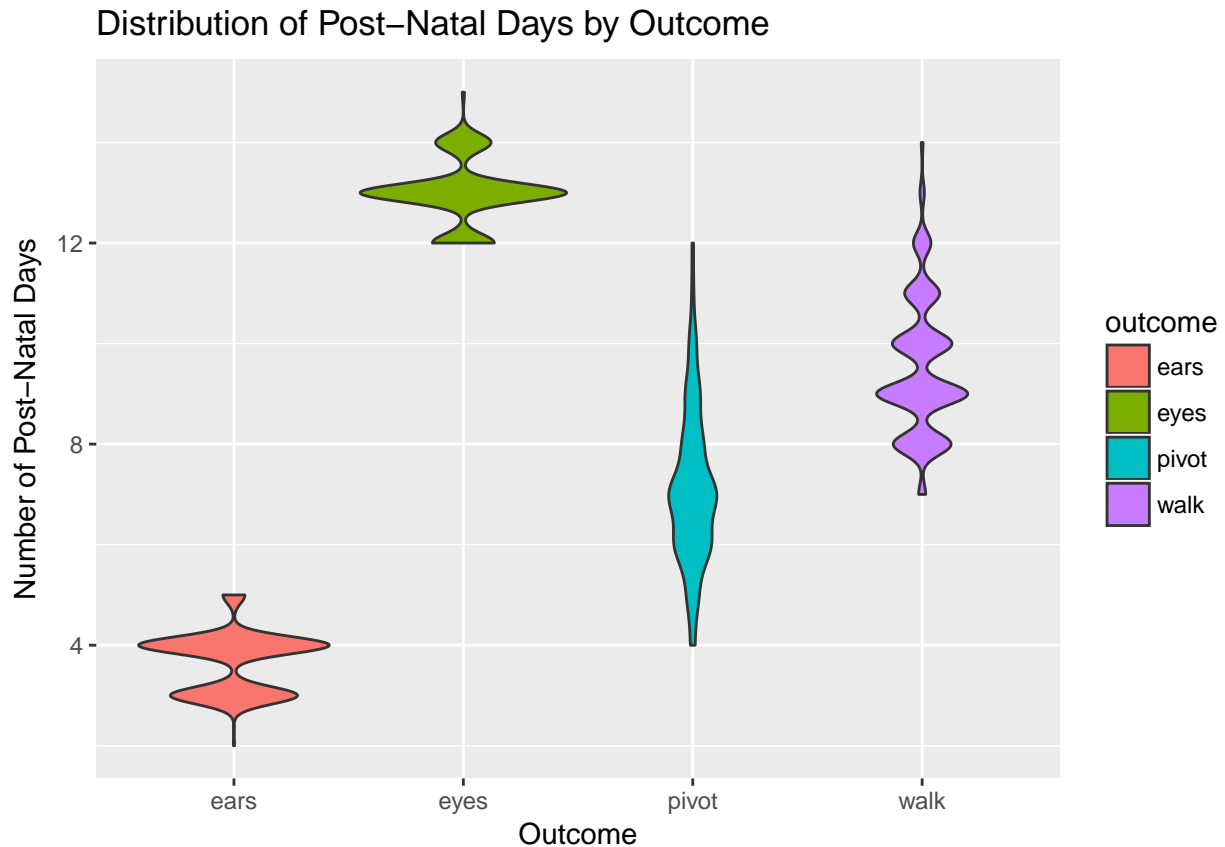
Part 2

In this part, we are going to generate plots.

```
## Distribution of post-natal days for each developmental landmark

ggplot(pups_data, aes(x = outcome, y = post_natal_days)) + # Start ggplot object
  geom_violin(aes(fill = outcome)) + # Generate violin plot
  labs(title = "Distribution of Post-Natal Days by Outcome",
       x = "Outcome",
       y = "Number of Post-Natal Days") # Edit Labels

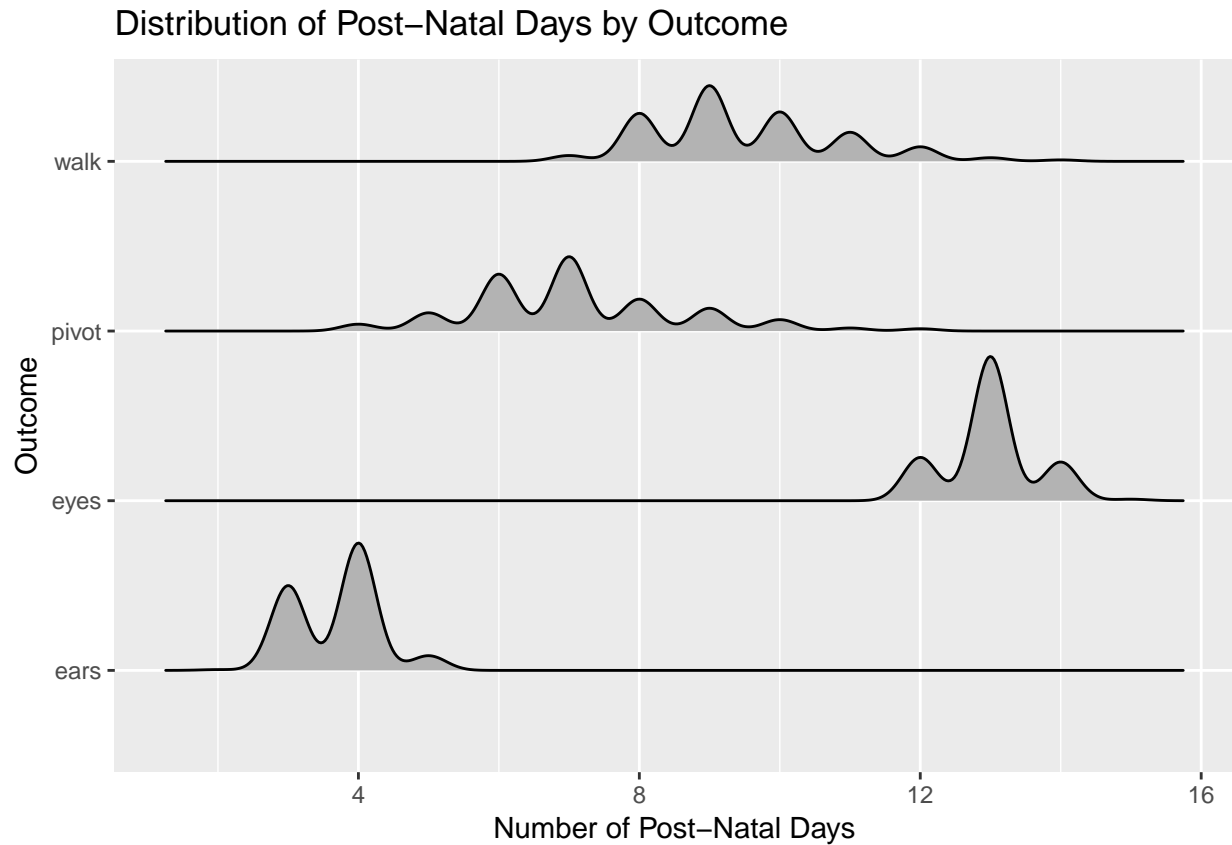
## Warning: Removed 44 rows containing non-finite values (stat_ydensity).
```



```
library(ggribes)

ggplot(pups_data, aes(x = post_natal_days, y = outcome)) + # Start ggplot object
  geom_density_ridges(scale = 0.85) + # Generate ridge plot
  labs(title = "Distribution of Post-Natal Days by Outcome",
        x = "Number of Post-Natal Days",
        y = "Outcome") # Edit labels

## Picking joint bandwidth of 0.248
## Warning: Removed 44 rows containing non-finite values
## (stat_density_ridges).
```



First, we observe that the distribution of post-natal days for each outcome looks very bumpy. Outcome, “ears” ranges from about 2 to 5 post-natal days, “eyes” from about 11 to 15, “pivot” from about 4 to 11 and “walk” from about 7 to 13. It is clear from the plots that the number of post-natal days differs by outcome.