Shooting Occurences in Toronto Have Increased Greatly*

My subtitle if needed

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Abstract

First sentence. Second sentence. Third sentence. Fourth sentence.

1 Introduction

You can and should cross-reference sections and sub-sections. For instance, Section 2. R Markdown automatically makes the sections lower case and adds a dash to spaces to generate labels, for instance, Section 5.1.

2 Data

(Table ??)

```
shooting_occurences <- read_csv(here::here("inputs/data/shooting_occurences.csv"))
```

```
## Rows: 96 Columns: 4
```

```
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (1): geo_division
## dbl (3): id, occurred_year, num_shootings
```

```
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
shooting_occurences %>%
  slice(1,2,18,19,36,37,54,55,72,73,90,91) %>%
  select(occurred_year, geo_division, num_shootings) %>%
  kable(
    caption= "12 Observations from dataset of shooting occurences in Toronto",
    col.names = c("Year", "Geographic Division", "Number of Shootings"),
    booktabs = TRUE,
    linesep = "",
    align = c('c', 'c', 'c')
  )
```

```
shooting_occurences %>%
  select(occurred_year,num_shootings)%>%
  group_by(occurred_year)%>%
```

*Code and data are available at: https://github.com/TDonofrio62/Paper-1.

Table 1: 12 Observations from dataset of shooting occurences in Toronto

Year	Geographic Division	Number of Shootings
2014	D11	2
2014	D12	20
2015	D12	36
2015	D13	4
2016	D14	23
2016	D22	15
2017	D23	44
2017	D31	68
2018	D32	23
2018	D33	12
2019	D41	23
2019	D42	35

Table 2: Number of Shootings in Toronto each year from 2014-2019

Year	Number of Shootings
2014	177
2015	288
2016	407
2017	392
2018	427
2019	492

```
  summarize(number_of_shootings = sum(num_shootings)) %>%
  kable(
    caption= "Number of Shootings in Toronto each year from 2014-2019",
    col.names = c("Year", "Number of Shootings"),
    booktabs = TRUE,
    linesep = "",
    align = c('c', 'c')
  )
```

```
shooting_occurences %>%
  ggplot(aes(x = occurred_year, y = num_shootings, color = geo_division)) +
  geom_point()+
  theme_bw() +
  labs(x = "Year",
       y = "Number of Shootings",
       color = "Geographic Division"
       )
```

```
shooting_occurences %>%
  ggplot(aes(x = occurred_year, y = num_shootings, fill = geo_division)) +
  geom_bar(stat='identity') +
  theme_bw() +
  labs(x = "Year",
       y = "Number of Shootings",
       fill = "Geographic Division"
```

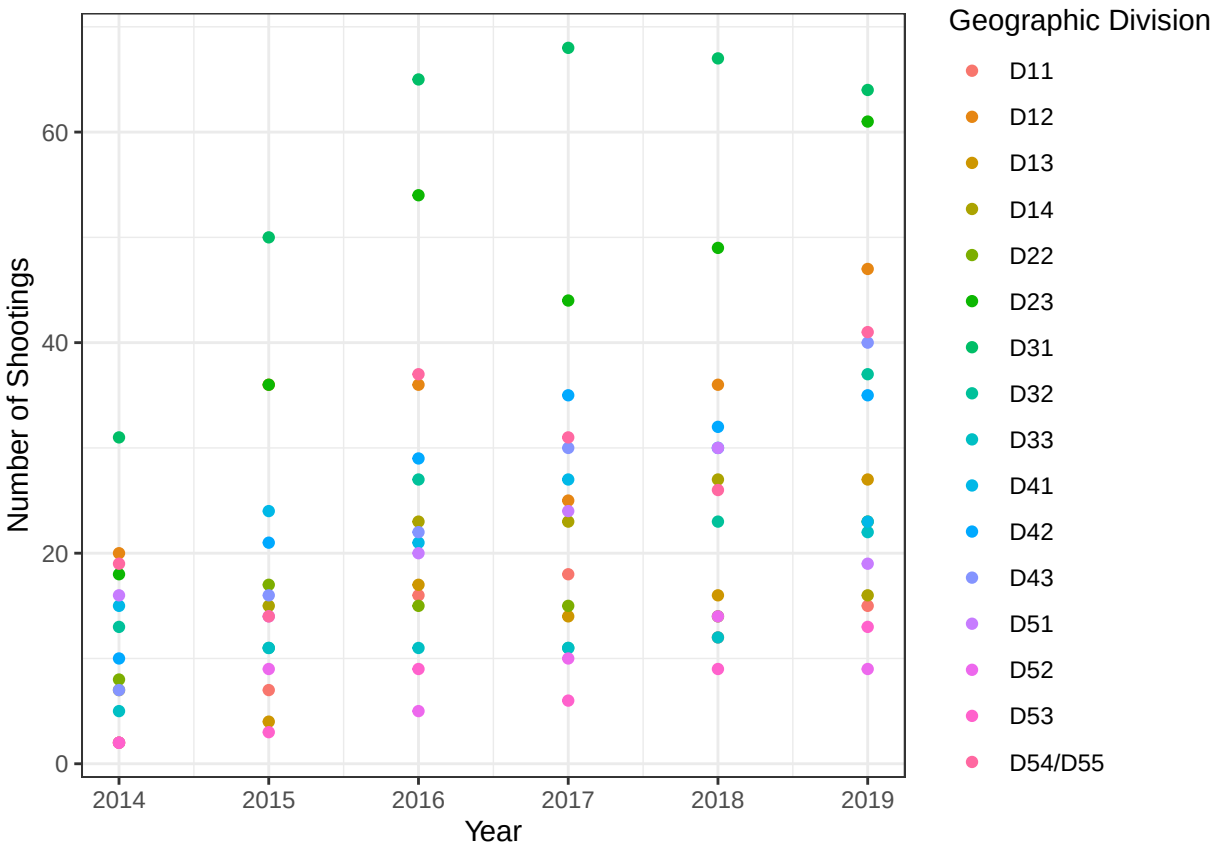
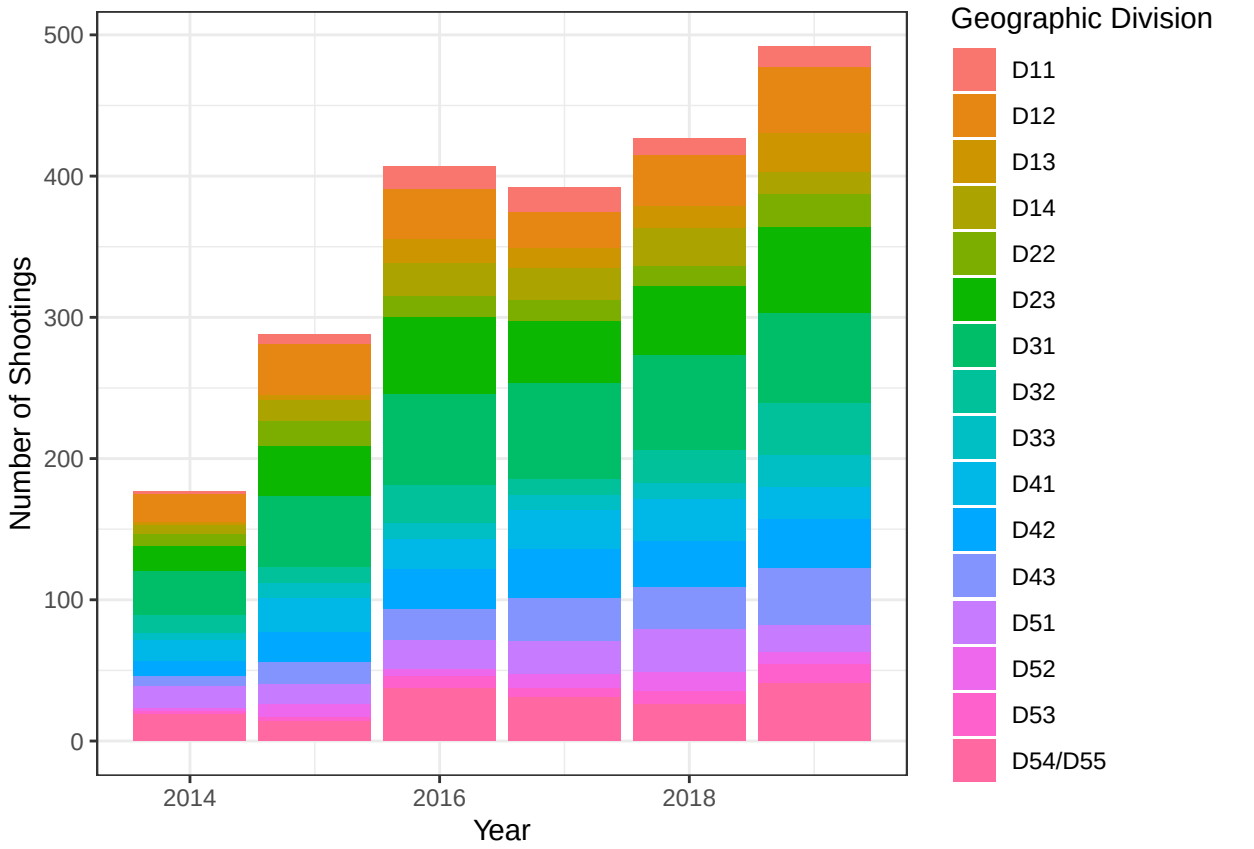
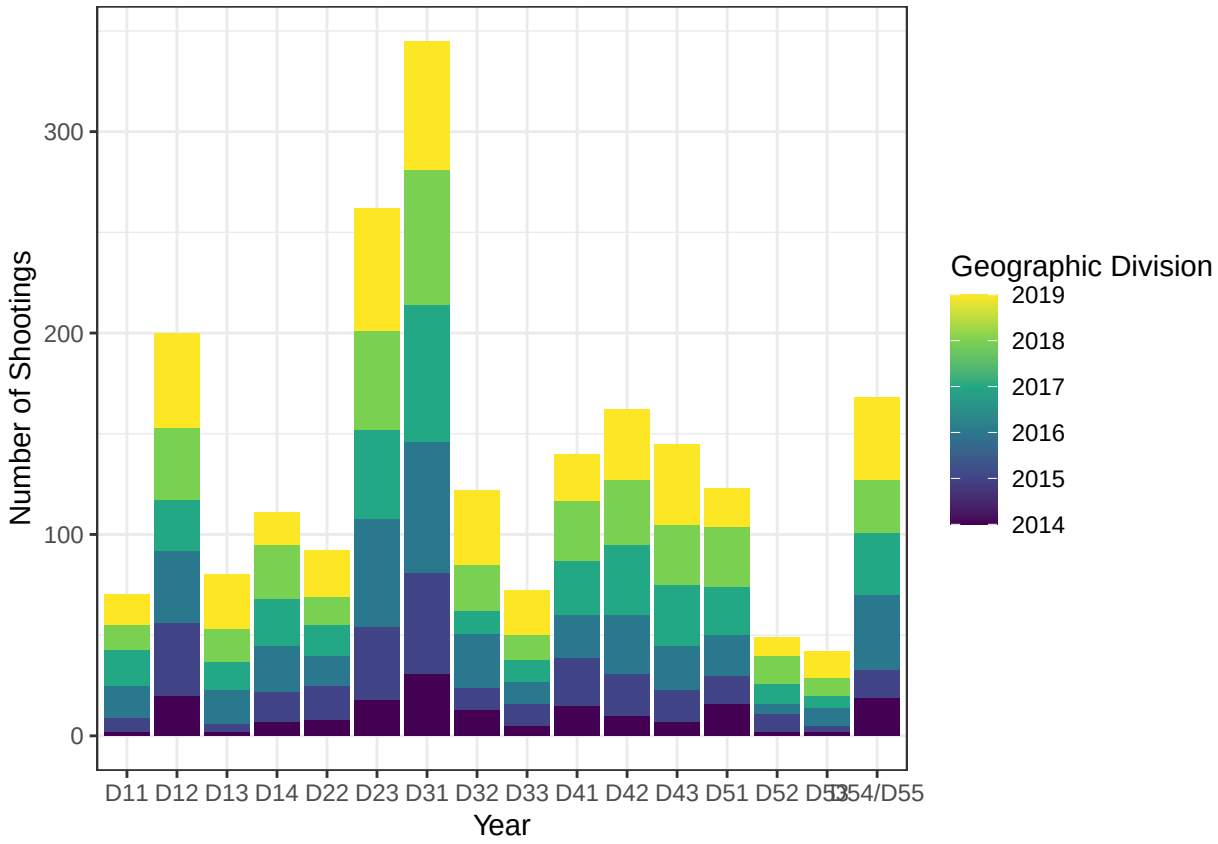


Figure 1: Relationship between number of shootings in each police division and year

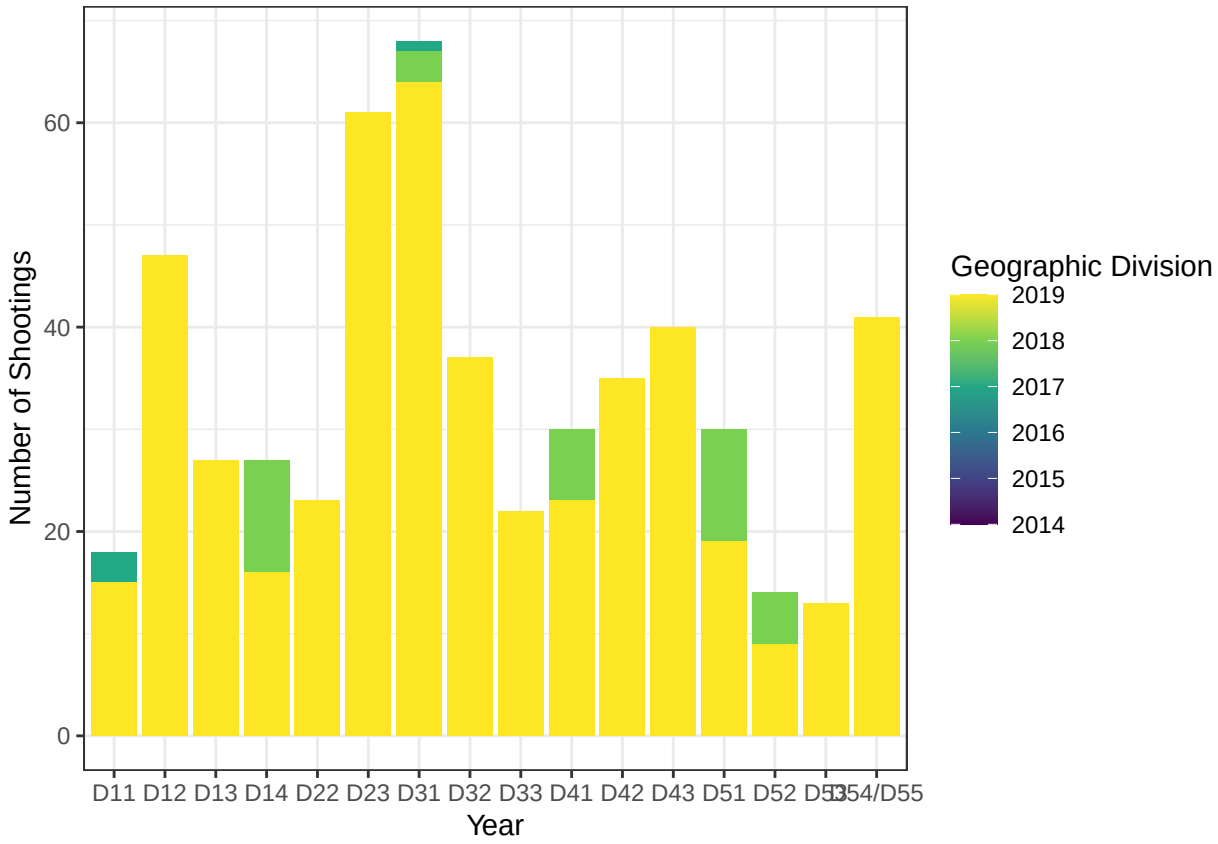
```
      )
```




```
shooting_occurences %>%
  ggplot(aes(x = geo_division, y = num_shootings, fill = occurred_year)) +
  geom_bar(stat='identity') +
  theme_bw() +
  labs(x = "Year",
       y = "Number of Shootings",
       fill = "Geographic Division"
       )+
  scale_fill_viridis_c()
```




```
shooting_occurences %>%
  ggplot(aes(x = geo_division, y = num_shootings, fill = occurred_year)) +
  geom_bar(stat='identity', position = "dodge") +
  theme_bw() +
  labs(x = "Year",
       y = "Number of Shootings",
       fill = "Geographic Division"
       )+
  scale_fill_viridis_c()
```



Our data is of penguins (Figure 2).

```
## Warning: It is deprecated to specify `guide = FALSE` to remove a guide. Please
## use `guide = "none"` instead.
```

Talk more about it.

Also bills and their average (Figure 3). (Notice how you can change the height and width so they don't take the whole page?)

```
## Warning: It is deprecated to specify `guide = FALSE` to remove a guide. Please
## use `guide = "none"` instead.
```

Talk way more about it.

3 Model

$$Pr(\theta|y) = \frac{Pr(y|\theta)Pr(\theta)}{Pr(y)} \tag{1}$$

Equation (1) seems useful, eh?

Here's a dumb example of how to use some references: In paper we run our analysis in `R` (R Core Team 2020). We also use the `tidyverse` which was written by Wickham et al. (2019) If we were interested in baseball data then Friendly et al. (2020) could be useful.

We can use maths by including latex between dollar signs, for instance θ.

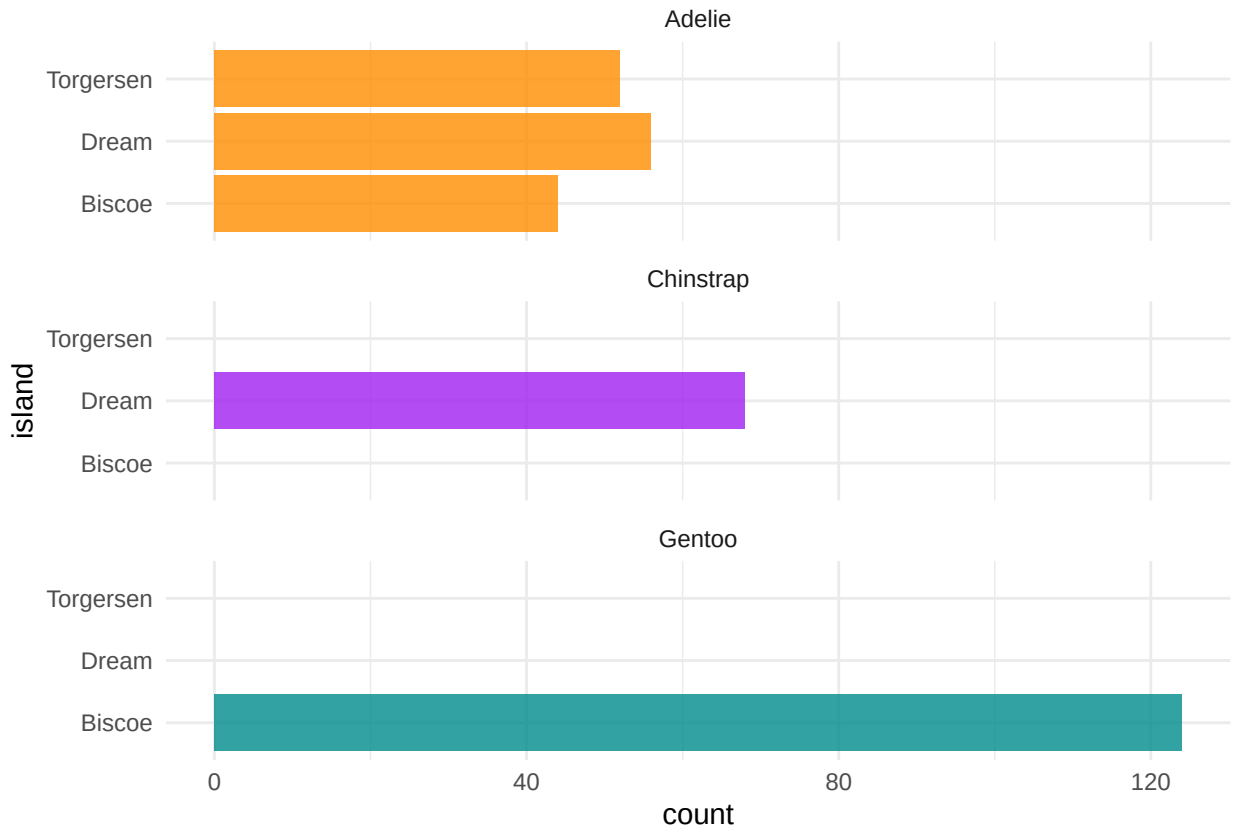


Figure 2: Bills of penguins

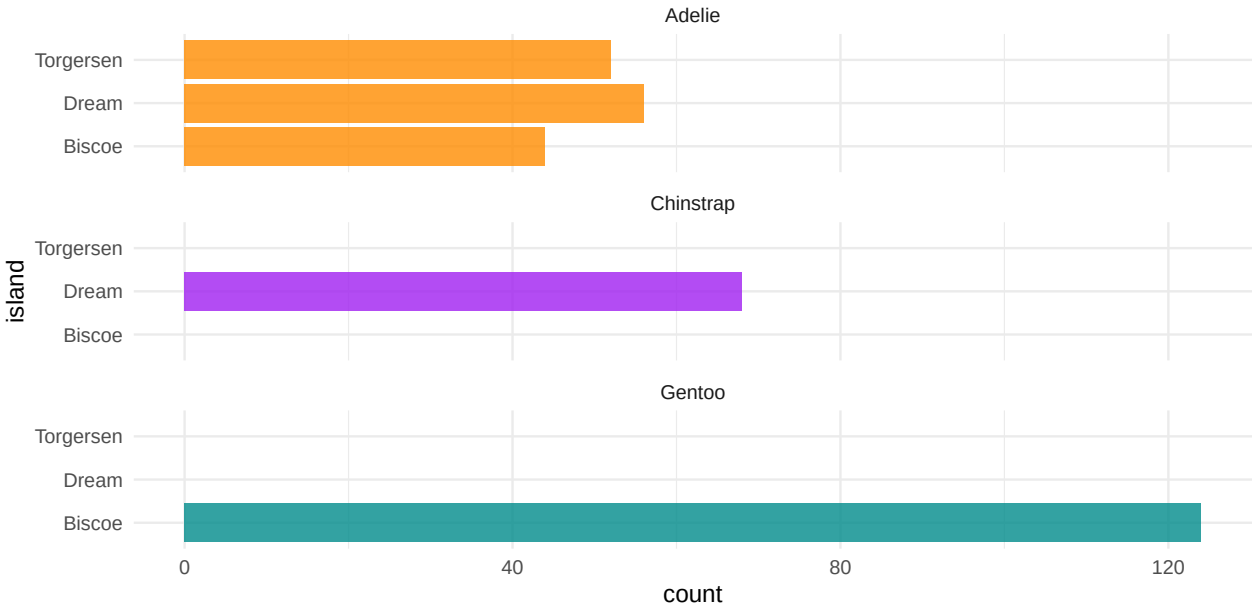


Figure 3: More bills of penguins

4 Results

5 Discussion

5.1 First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

5.2 Second discussion point

5.3 Third discussion point

5.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

Appendix

A Additional details

References

Friendly, Michael, Chris Dalzell, Martin Monkman, and Dennis Murphy. 2020. *Lahman: Sean 'Lahman' Baseball Database*. https://CRAN.R-project.org/package=Lahman.

R Core Team. 2020. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. https://doi.org/10.21105/joss.01686.