Working example for generating multiple plots inside a map2 call

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1 Introduction

Consider the problem of running a data analysis requiring a separate analysis for each of `n` strata. For example consider an effort to model the relationship between `Bill length` and `Flipper length` across three different species of penguins.

We can work with the dataset `penguins` included in the package `palmerpenguins`

```
library(palmerpenguins)
```

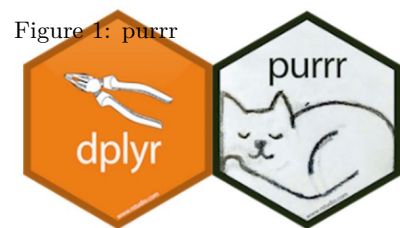One naive approach is to split the dataset and do three separate analyses:

Figure 1: purrr

```
df1 = split(penguins, penguins$species)
```

The R package `purrr` provides a straightforward method to conduct the analyses with a single command. Assume the set of data tables are contained in a list of dataframes. Also assume the analysis is a simple visualization of a potential linear association between two features,
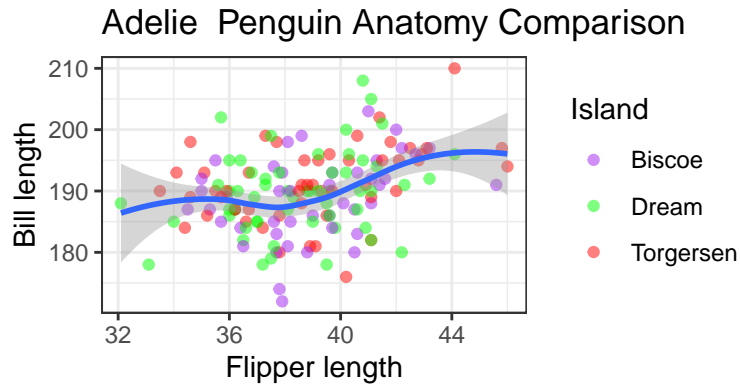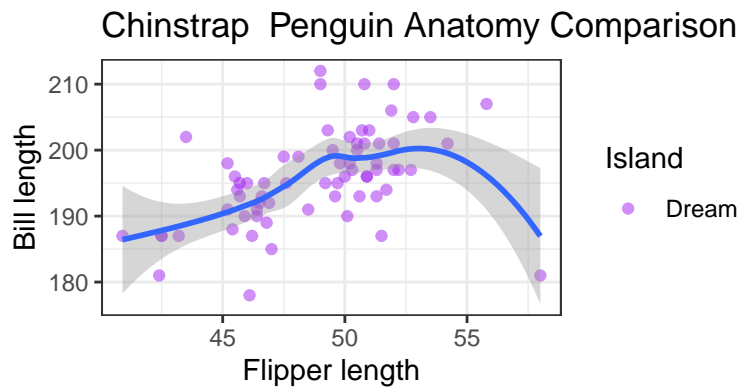

Figure 2: Scatterplot for species: Adelie

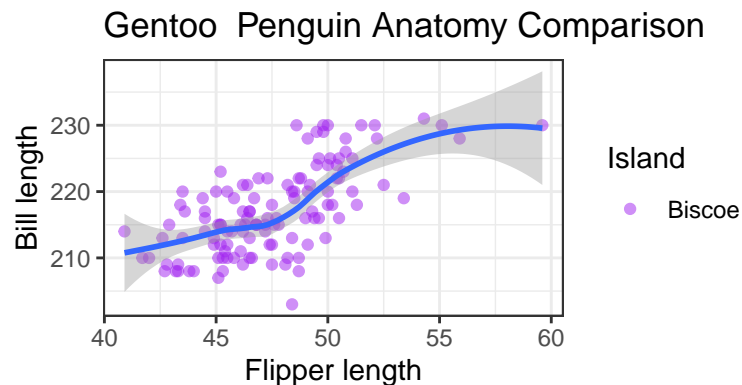Figure 3: Scatterplot for species: Chinstrap

Figure 4: Scatterplot for species: Gentoo

2 Code

```
1  library(pacman)
2  p_load(palmerpenguins, tidyverse, knitr)
3
4  opts_chunk$set(
5    warning = FALSE, message = FALSE, echo = FALSE, fig.width = 4,
6    fig.height = 2.1, results = "asis", dev = "pdf")
7
8  df1 = split(penguins, penguins$species)
9
10 foo <- function (df, z) {
11 df |> ggplot(aes(x = bill_length_mm, y = flipper_length_mm))+
12   geom_point(aes(color = island), alpha = .5) +
13   geom_smooth() +
14   scale_color_manual(values = c("purple","green","red")) +
15   theme_bw() +
16   labs(title = paste(z, " Penguin Anatomy Comparison"), x = "Flipper length",
17        y = "Bill length", color = "Island")
18 plotfile_name = paste0(z,".pdf")
19 ggsave(plotfile_name)
20 cat(paste0("\\includegraphics[]{",plotfile_name,"}"), "\n")
21 cat(paste0("\\captionof{figure}{Scatterplot for species: ",z,"}"), "\n")
22 cat("\\vspace{1cm}", "\n")
```

```
23  }
24
25  bar = df1 |>  map2(names(df1), foo)
```

3 References

principal components analysis