

## PA 3 Task Card - Using Data Visualization to Find the Penguins

Today you will be exploring different types of visualizations to uncover which species of penguins reside on different islands.

*This task is complex. It requires many different types of abilities. Everyone will be good at some of these abilities but nobody will be good at all of them. In order to solve this puzzle, you will need to use the skills of each member of your group.*

### Group Roles

When you are the **Developer**, you will type into the Quarto document in RStudio. However, you **do not** type your own ideas. Instead, you type what the Coder tells you to type. You are permitted to ask the Coder clarifying questions, and, if both of you have a question, you are permitted to ask the professor. You are expected to run the code provided by the Coder and, if necessary, to work with the Coder to debug the code. Once the code runs, you are expected to collaborate with the Coder to write code comments that describe the actions taken by your code.

When you are the **Coder**, you are responsible for reading the instructions / prompts and directing the Developer what to type in the Quarto document. You are responsible for managing the resources your group has available to you (e.g., cheatsheet, textbook). If necessary, you should work with the Developer to debug the code you specified. Once the code runs, you are expected to collaborate with the Developer to write code comments that describe the actions taken by your code.

### Group Norms

Remember, your group is expected to adhere to the following norms:

1. Think and work together. Do not divide the work.
2. You are smarter together.
3. Be open minded.
4. No cross-talk with other groups.
5. Communicate with each other!

## Writing Code

Writing “tidy” and “well documented” code are two of the learning targets for this course. As such, I would strongly encourage you to use every opportunity to practice these skills.

## Tidy Code

As you are writing code for this assignment, make sure your code follows the tidyverse style guide for ggplot code. Specifically, your code should:

- use whitespace liberally
  - before & after every = sign
  - after every ,
  - before every +
- use new lines liberally
  - after every +
  - after , when needed (if code is more than 80 characters in length)

## Well Documented Code

Include a comment at the beginning of the code chunk that briefly states the purpose of the chunk (comments come after # signs). In addition, if your code involves many steps or steps you needed to look up / get help on, I would encourage you to write a code comment on what is happening in these lines.

```
ggplot(data = penguins,  
       mapping = aes(x = species,  
                     fill = species)) +  
# use fill instead of color to get the bars filled entirely with color (instead  
# of just on the outside)  
  
  geom_bar() +  
  labs(x = "",  
       y = "",  
       title = "Number of Penguins Captured in the Palmer Archipelago") +  
# remove axis titles and put that information in the title where it is easier  
# to read  
  
  theme(legend.position = "none")  
# to remove the legend position, since the fill information is already included  
# on the x-axis
```