GY7702 Assignment 1

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Loading libraries

Throughout this assignment, I will be using the libraries tidyverse and knitr. Therefore it is a good idea to load them straight away.

```
library(tidyverse)
library(knitr)
```

Question 1

Q1.1

```
#Create the vector of 25 numbers listed on the question paper
nums <- c(NA, 3, 4, 4, 5, 2, 4, NA, 6, 3, 5, 4, 0, 5, 7, 5, NA, 5, 2, 4, NA,
          3, 3, 5, NA)
#Create a new vector of the same numbers, this time with missing values (NA
#values omitted)
nums_new <- nums[!is.na(nums)]
#Check if all responses are strongly agree or strongly disagree
all(nums_new %>% is.element(c(1,7)))
```

```
## [1] FALSE
```

A return of FALSE indicates that there were participants in the survey that did not either completely agree or completely disagree.

Q1.2

```
#Return the positions in the vector of elements that are participants responding
#somehow agree or stronger (5 or greater).
which(nums_new >= 5)
```

```
## [1]  4  7  9 12 13 14 15 20
```

Question 2

Q2.1

```
# Install and load the library "palmerpenguins"
library(palmerpenguins)
```

Q2.2

```
#Create a table to show species, island, bill length and body mass of the 10
#Gentoo penguins with the highest body mass
gentoo_penguins <- penguins %>%
  #Only want the table to show species, island, bill length and body mass
  select(species, island, bill_length_mm, body_mass_g) %>%
  #Only display rows of Gentoo penguins
  filter(species == "Gentoo") %>%
  #Arrange the rows by body mass largest to smallest
  arrange(-body_mass_g) %>%
  #Take the first 10 values, i.e. the 10 Gentoo penguins with the largest body
  #mass
  slice_head(n = 10)

# Display the table
knitr::kable(gentoo_penguins)
```

species	island	bill_length_mm	body_mass_g
Gentoo	Biscoe	49.2	6300
Gentoo	Biscoe	59.6	6050
Gentoo	Biscoe	51.1	6000
Gentoo	Biscoe	48.8	6000
Gentoo	Biscoe	45.2	5950
Gentoo	Biscoe	49.8	5950
Gentoo	Biscoe	48.4	5850
Gentoo	Biscoe	49.3	5850
Gentoo	Biscoe	55.1	5850
Gentoo	Biscoe	49.5	5800

Q2.3

```
#Create a table of the average bill length per island ordered by average bill
#length
island_bill_length <- penguins %>%
  #Only considering island and bill length
  select(island, bill_length_mm) %>%
  #Remove NA values to correctly summarise
  filter(!is.na(bill_length_mm)) %>%
  #Group rows by island
```

```
  group_by(island) %>%
  #Summarise the islands by the average bill length
  summarise(
    avg_bill_length_mm = mean(bill_length_mm)
  ) %>%
  #Arrange the table by highest to lowest average bill length
  arrange(-avg_bill_length_mm)

knitr::kable(island_bill_length)
```

island	avg_bill_length_mm
Biscoe	45.25749
Dream	44.16774
Torgersen	38.95098