Stat 123 Summer 2023 Midterm 1b

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All answers are to be done with R commands.

Question 1

Download the data file artists.csv from Brightspace and save it in a directory of your choice.

Read the data file as a data frame and name it artist.

```
artists <- read.csv("artists.csv")
#a. Find the sum of the artists' height and display the result below.
sum_height <- sum(artists$Height)
sum_height
```

```
## [1] 8.36
```

```
#b. Find the average of the artists' weight and display the result below.
avg_weight <- mean(artists$Weight)
avg_weight
```

```
## [1] 68.12
```

Question 2

You will use the built-in data chickwts and the dplyr package for this question.

```
#a. Load the dplyr package using a R command.

library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
#b. Display the first 8 observations in the dataset.
head(chickwts, 8)
```

```
##   weight      feed
## 1    179 horsebean
## 2    160 horsebean
## 3    136 horsebean
## 4    227 horsebean
## 5    217 horsebean
## 6    168 horsebean
## 7    108 horsebean
## 8    124 horsebean
```

```
#. For the following questions, you MUST use dplyr piping commands to complete the tasks.

#c. Find out how many chickens receive the meatmeal feed.
chickens_receved_bonemeal <- chickwts %>% filter(feed == "meatmeal") %>% nrow()
chickens_receved_bonemeal
```

```
## [1] 11
```

```
#d. Create a new data frame from chickwts named chickwt2 that contains chickens with
#   weight more than 150. Do not show the results.

chickwt2 <- chickwts %>% filter(weight > 150)

#e. Display the chickwt2 data frame in ascending order by weight.

sorted_weight <- chickwt2 %>% arrange(weight)
sorted_weight
```

```
##    weight      feed
## 1     153  meatmeal
## 2     158   soybean
## 3     160 horsebean
## 4     168 horsebean
## 5     169   linseed
## 6     171   soybean
## 7     179 horsebean
## 8     181   linseed
## 9     193   soybean
## 10    199   soybean
## 11    203   linseed
## 12    206  meatmeal
## 13    213   linseed
## 14    216    casein
## 15    217 horsebean
## 16    222    casein
## 17    226 sunflower
## 18    227 horsebean
## 19    229   linseed
## 20    230   soybean
## 21    242  meatmeal
## 22    243   soybean
## 23    244   linseed
## 24    248   soybean
## 25    248   soybean
## 26    250   soybean
## 27    257   linseed
## 28    257  meatmeal
## 29    258  meatmeal
## 30    260   linseed
## 31    260    casein
## 32    263  meatmeal
## 33    267   soybean
## 34    271   linseed
## 35    271   soybean
## 36    283    casein
## 37    295 sunflower
## 38    297 sunflower
## 39    303  meatmeal
## 40    309   linseed
## 41    315  meatmeal
## 42    316   soybean
## 43    318 sunflower
## 44    318    casein
## 45    320 sunflower
## 46    322 sunflower
## 47    325  meatmeal
## 48    327   soybean
## 49    329   soybean
## 50    332    casein
## 51    334 sunflower
```

```
## 52    339 sunflower
## 53    340 sunflower
## 54    341 sunflower
## 55    344  meatmeal
## 56    352    casein
## 57    359    casein
## 58    368    casein
## 59    379    casein
## 60    380  meatmeal
## 61    390    casein
## 62    392 sunflower
## 63    404    casein
## 64    423 sunflower
```

```
#f. Display the mean weight of chickens grouped by their feed type.

mean_weight <- chickwts %>% group_by(feed) %>% summarise(mean_weight = mean(weight))
mean_weight
```

```
## # A tibble: 6 × 2
##   feed      mean_weight
##   <fct>           <dbl>
## 1 casein           324.
## 2 horsebean        160.
## 3 linseed          219.
## 4 meatmeal         277.
## 5 soybean          246.
## 6 sunflower        329.
```

Once you are satisfied with your results, knit this file as a html and submit it to Brightspace. If you are running out of time and the file does not knit, add the character # at the beginning of the commands that did not run. Then knit it as a html file and submit.