Stat 123 Summer 2023 Midterm 1b

2023-05-31

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.

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

```
##       Name Height Weight Eye_Colour Martial_Arts
## 1      Tom   1.83   75.3          1            0
## 2     Josh   1.72   70.8          3            1
## 3 Michelle   1.55   62.5          2            1
## 4    Peter   1.76   71.2          4            0
## 5    Emily   1.50   60.8          3            1
```

```
#b. Find the average of the artists' weight and display the result below.
artists_weight <- artists[, "Weight"]
avg_artsits_weigth <- mean(artists_weight)
avg_artsits_weigth
```

```
## [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 (rows) in the dataset.
chick <- chickwts
chickwts[1:8, ]
```

```
##   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.
meal <- chickwts['feed'] %>%
  filter(feed == 'meatmeal')

length(meal[, 'feed'])
```

```
## [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['weight']  %>% filter(weight > 150)
length(chickwt2[,'weight'])
```

```
## [1] 64
```

```
#e. Display the chickwt2 data frame in ascending order by weight.
chickwt2_sorted <- chickwt2 %>%
  arrange(weight)

chickwt2_sorted
```

```
##    weight
## 1     153
## 2     158
## 3     160
## 4     168
## 5     169
## 6     171
## 7     179
## 8     181
## 9     193
## 10    199
## 11    203
## 12    206
## 13    213
## 14    216
## 15    217
## 16    222
## 17    226
## 18    227
## 19    229
## 20    230
## 21    242
## 22    243
## 23    244
## 24    248
## 25    248
## 26    250
## 27    257
## 28    257
## 29    258
## 30    260
## 31    260
## 32    263
## 33    267
## 34    271
## 35    271
## 36    283
## 37    295
## 38    297
## 39    303
## 40    309
## 41    315
## 42    316
## 43    318
## 44    318
## 45    320
## 46    322
## 47    325
## 48    327
## 49    329
## 50    332
## 51    334
## 52    339
## 53    340
## 54    341
## 55    344
## 56    352
## 57    359
## 58    368
## 59    379
## 60    380
## 61    390
## 62    392
## 63    404
## 64    423
```

```
#f. Display the mean weight of chickens grouped by their feed type.
group <- chickwts %>%
  group_by(feed) %>%
  summarize(mean_weight = mean(weight))

group
```

```
## # 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.