ASSSIGNMENT2

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Loading in libraries:

```
library(tidyverse)
```

```
## ── Attaching packages ─────────────────────────────────────── tidyverse 1.3.2 ──✔
ggplot2 3.3.6      ✔ purrr   0.3.4
## ✔ tibble  3.1.8      ✔ dplyr   1.0.10
## ✔ tidyr   1.2.1      ✔ stringr 1.4.0
## ✔ readr   2.1.2      ✔ forcats 0.5.2
```

```
## Warning: package 'readr' was built under R version 4.0.5
```

```
## ── Conflicts ────────────────────────────────────────── tidyverse_conflicts() ──
## ✖ dplyr::filter() masks stats::filter()
## ✖ dplyr::lag()    masks stats::lag()
```

1) Use R to figure out how many elements in the vector below are greater than 2 and then tell me what their sum (of the larger than 2 elements) is.

```
rooms <- c(1, 2, 4, 5, 1, 3, 1, NA, 3, 1, 3, 2, 1, NA, 1, 8, 3, 1, 4, NA, 1, 3, 1, 2,
1, 7, 1, 9, 3, NA)
```

The amount of elements that greater than 2:

```
length(which(rooms>2))
```

```
## [1] 12
```

The sum of all elements greater than 2:

```
sum(which(rooms>2))
```

```
## [1] 190
```

2) What type of data is in the ‘rooms’ vector?*

Lets investigate by looking at the class:

```
class(rooms)
```

```
## [1] "numeric"
```

They appear to be numeric

3) Submit the following image to Github: Inside your R Project (.Rproj)*

The answers can be seen in the attached pdf.

4) Challenge:

If you managed to create your own Danish king dataset, use it. If not, you the one attached to this assignment (it might need to be cleaned up a bit). Load the dataset into R as a tibble. Calculate the mean() and median() duration of rule over time and find the three mondarchs ruling the longest. How many days did they rule (accounting for transition year?)

This is done with the selfcreated danish king dataset, thus the answers may vary from the ones found if the king.csv data was used.

```
#loading in the data:
king_data <- read_csv("/Users/laura/Desktop/GITHUB_YES/CultDat_LauraWPaaby/Homework/D
anishMonarchs.csv")
```

```
## New names:Rows: 55 Columns: 7── Column specification ────────────────────────
──────────────────────────
## Delimiter: ","
## chr (3): Monarch, date_of_birth, year_of_death
## dbl (4): year_of_birth...2, year_of_birth...4, year_of_start_reign, year_of_...
## ℹ Use `spec()` to retrieve the full column specification for this data.
## ℹ Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
king_data <- as_tibble(king_data)
```

Lets first find the duration:

```
king_data <- king_data %>%
 mutate(duration = year_of_end_reign - year_of_start_reign) %>%
  filter(duration != "NA")

### making sure its numeric
class(king_data$duration)
```

```
## [1] "numeric"
```

```
## finding the mean and median:
mean_dur <- mean(king_data$duration)
median_dur <- median(king_data$duration)

mean_dur
```

```
## [1] 19.33333
```

```
median_dur
```

```
## [1] 16.5
```

So the mean duration of each monarchs ruling time is *19.33* and the median is *16.5*.

Lets then find the monarchs ruling the longest:

```
pacman::p_load(Rfast)
library('Rfast')

# The King sitting for the longest
max(king_data$duration)
```

```
## [1] 60
```

```
king_one <- king_data$Monarch[(which.max(king_data$duration))]


#The King sitting for the second longest
nth(king_data$duration, 2, descending = T) #gives length  of duration
```

```
## [1] 43
```

```
nth(king_data$duration, 3, descending = T) #gives length of duration
```

```
## [1] 43
```

```
#### apparently both the second and third most ruling were sitting for 43 years

# The index for those kings are:
which(king_data$duration == (nth(king_data$duration, 2, descending = T)))
```

```
## [1] 33 51
```

```
#The King sitting for the second longest
king_two <- king_data$Monarch[33]
king_three <- king_data$Monarch[51]
```

```
## so the three kings are:
king_one
```

```
## [1] "Christian 4."
```

```
king_two
```

```
## [1] "Erik 7. af Pommern"
```

```
king_three
```

```
## [1] "Christian 9."
```

Lets now figure out for how many days they been there:

Christian 4. - 60 years

```
# how many of these are transition years:
C4_year <- 60
numb_trans_year <- 60/4

# total number of days
((C4_year - numb_trans_year)*365) + (numb_trans_year*366)
```

```
## [1] 21915
```

So Chr 4. have ruled for *21915* days.

Christian 9. - 43 years

```
# how many of these are transition years:
C9_year <- 43
numb_trans_year9 <- 43/4

# total number of days
((C9_year - numb_trans_year9)*365) + (numb_trans_year9*366)
```

```
## [1] 15705.75
```

So Chr 9. have ruled for *15705.75* days.

Erik 7. af Pommern. - 43 years Since Erik 7. af Pommern and Christian 9. have both ruled for 43 years, Erik must likewise have ruled *15705.75* days.