Homework 3

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Instructions

Answer the following questions and/or complete the exercises in RMarkdown. Please embed all of your code and push the final work to your repository. Your report should be organized, clean, and run free from errors. Remember, you must remove the # for any included code chunks to run.

Load the tidyverse

```
library("tidyverse")
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.6
## v forcats   1.0.1     v stringr   1.6.0
## v ggplot2   4.0.1     v tibble    3.3.0
## v lubridate 1.9.4     v tidyr     1.3.2
## v purrr     1.2.0
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

In order to answer the questions below, you will need to do a little online research.

1. Make three new vectors that show the name, height in feet, and height in meters of the five tallest mountains in the world.

```
names <- c("Mount Everest", "K2", "Kangchenjunga","Lhotse","Makalu")
height_feet <- c(29032, 28251, 28169, 27940, 27838)
height_meter <- c(8849, 8611, 8586, 8516, 8485)
```

2. Combine these vectors into a data frame called `mountains`.

```
mountains <- tibble(names, height_feet, height_meter)
```

3. What is the mean height of the mountains in feet?

```
mean(mountains$height_feet)
```

```
## [1] 28246
```

4. When were each of these mountains first climbed (i.e. in what year)? Make a new vector `first_climbed` and add it to the `mountains` data frame.

```
mountains$first_climbed <- c(1953, 1954, 1955, 1956, 1955)
```

5. How many times have each of these mountains been climbed? Make a new vector `summits` and add it to the `mountains` data frame.

```
summits <- c(12884, 800, 532, 1000, 400)
mountains$summits <- summits
```

6. Which mountain has the highest number of fatalities? Make a new vector `fatalities` and add it to the `mountains` data frame.

```
fatalities <- c(340, 96, 52, 96, 22)
mountains$fatalities <- fatalities
```

7. What is the fatality rate (i.e., fatalities divided by summits) for each mountain? Create a new vector `fatality_rate` and add it to the `mountains` data frame.

```
fatality_rate <- c(fatalities/summits)
mountains$fatality_rate <- fatality_rate
```

8. Write your data frame to a .csv file called `mountains_data`.

```
write.csv(mountains, "mountains_data.csv", row.names = FALSE)
```

9. Clear your environment panel by clicking on the broom icon. Then read in your `mountains_data.csv` file to a new object called `mountains`.

```
mountains <- read.csv("mountains_data.csv")
```

10. Use a summary function of your choice to show the structure of your `mountains` data frame.

```
summary(mountains)
```

```
##     names            height_feet     height_meter  first_climbed
##  Length:5           Min.   :27838   Min.   :8485   Min.   :1953
##  Class :character   1st Qu.:27940   1st Qu.:8516   1st Qu.:1954
##  Mode  :character   Median :28169   Median :8586   Median :1955
##                     Mean   :28246   Mean   :8609   Mean   :1955
##                     3rd Qu.:28251   3rd Qu.:8611   3rd Qu.:1955
##                     Max.   :29032   Max.   :8849   Max.   :1956
##     summits        fatalities    fatality_rate
##  Min.   :  400   Min.   : 22.0   Min.   :0.02639
##  1st Qu.:  532   1st Qu.: 52.0   1st Qu.:0.05500
##  Median :  800   Median : 96.0   Median :0.09600
##  Mean   : 3123   Mean   :121.2   Mean   :0.07903
##  3rd Qu.: 1000   3rd Qu.: 96.0   3rd Qu.:0.09774
##  Max.   :12884   Max.   :340.0   Max.   :0.12000
```

Knit and Upload

Please knit your work as an .html file and upload to Canvas. Homework is due before the start of the next lab. No late work is accepted. Make sure to use the formatting conventions of RMarkdown to make your report neat and clean!