Assignment 1.Rmd

Irfan Kanat

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This is an assignment to evaluate your learning during the week. For each module there is a section in this document. Answer each question below the question and create an R Markdown document for submission.

1 - Installation

In order to be able to create and render R Markdown documents you should have successfully installed R. Hence your submission will be counted as proficiency in installation of R.

2 - Reporting

Successfully rendering this document (after answering questions) counts as proof that you have learned how to create R Markdown documents. In later assignments you will need to create your own R Markdown documents.

3 - Introduction

Variables, Operators

a - Replace the metadata in the document header to declare you as the author, and change the date to current date (Pst, it is at the very top of this file).

b - Create a variable named **id** with the last 4 digits of your student number.

```
id<-1234
```

c - Multiply the id variable by 5 and save it in a variable called **idX5**.

```
idX5<-id*26
```

Dataframes

For the following questions, get R to execute the following command.

```
admitData <- read.csv("https://stats.idre.ucla.edu/stat/data/binary.csv")
```

```
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```

d - display the first 3 rows of the **admitData**.

```
admitData[1:3,]
```

```
##   admit gre  gpa rank
## 1     0 380 3.61    3
## 2     1 660 3.67    3
## 3     1 800 4.00    1
```

e - Display rows where rank is equal to 1.

```
admitData[admitData$rank==1,]
```

```
##     admit gre  gpa rank
## 3       1 800 4.00    1
## 7       1 560 2.98    1
## 12      0 440 3.22    1
## 13      1 760 4.00    1
## 15      1 700 4.00    1
## 20      1 540 3.81    1
## 26      1 800 3.66    1
## 27      1 620 3.61    1
## 30      0 520 3.29    1
## 35      0 360 3.14    1
## 37      0 580 3.25    1
## 68      0 620 3.30    1
## 69      0 580 3.69    1
## 70      0 800 3.73    1
## 79      0 540 3.12    1
## 80      1 620 4.00    1
## 89      0 700 3.28    1
## 92      1 720 3.64    1
## 107     1 700 3.56    1
## 114     0 600 3.22    1
## 119     1 800 3.70    1
## 127     1 600 3.54    1
## 140     1 600 3.58    1
## 149     1 480 2.91    1
## 150     0 740 3.31    1
## 151     1 800 3.74    1
## 158     1 480 3.58    1
## 166     0 700 4.00    1
## 203     1 700 4.00    1
## 205     1 600 3.89    1
## 207     0 740 3.54    1
## 208     1 640 3.63    1
## 217     0 340 2.90    1
## 218     1 460 3.64    1
## 219     0 460 2.98    1
## 223     1 480 3.02    1
## 235     1 800 3.53    1
## 242     1 520 3.81    1
## 245     0 540 3.04    1
## 274     0 660 3.32    1
## 278     1 580 3.58    1
## 287     1 800 3.22    1
## 294     0 800 3.97    1
## 295     0 480 2.55    1
## 297     0 560 3.16    1
## 307     1 540 3.17    1
## 320     0 540 3.28    1
## 326     0 680 3.90    1
## 333     0 420 2.96    1
## 336     1 620 3.71    1
## 339     0 540 3.20    1
```

```
## 356     1 760 2.81    1
## 358     0 720 3.31    1
## 361     1 520 4.00    1
## 362     1 540 3.49    1
## 365     1 560 3.36    1
## 369     0 580 4.00    1
## 373     1 680 2.42    1
## 374     1 620 3.37    1
## 384     0 660 4.00    1
## 386     0 420 3.02    1
```

Functions

f - get R to calculate the square root of idX5 variable (sqrt is your friend).

```
sqrt(idX5)
```

```
## [1] 179.1201
```

g - get R to calculate the mean of GRE scores in **admitData**.

```
mean(admitData$gre)
```

```
## [1] 587.7
```

4 - Packages

h - Install and load the psych package in memory.

```
install.packages("psych", repos = "http://cran.us.r-project.org")
```

```
## Installing package into '/home/db/R/x86_64-pc-linux-gnu-library/3.2'
## (as 'lib' is unspecified)
```

```
##
## The downloaded source packages are in
##  '/tmp/Rtmp3NBIQr/downloaded_packages'
```

```
library(psych)
```

i - Use the describe() function (should be loaded to memory with psych package) with **admitData** to get descriptive statistics.

```
describe(admitData)
```

```
##       vars   n   mean     sd median trimmed    mad    min max  range  skew
## admit    1 400   0.32   0.47    0.0    0.27   0.00   0.00   1   1.00  0.78
## gre      2 400 587.70 115.52  580.0  589.06 118.61 220.00 800 580.00 -0.14
## gpa      3 400   3.39   0.38    3.4    3.40   0.40   2.26   4   1.74 -0.21
## rank     4 400   2.48   0.94    2.0    2.48   1.48   1.00   4   3.00  0.10
##       kurtosis   se
## admit    -1.39 0.02
## gre      -0.36 5.78
## gpa      -0.60 0.02
## rank     -0.91 0.05
```

5 - Import Data

for the following questions, go to Zillow.com's data site and obtain **ZRI Summary: Multifamily, SFR, Condo/Co-op (Current Month)** dataset by zip code.

j - Save the imported dataset into a **zillow** data.frame.

```
zillow<-read.csv("http://files.zillowstatic.com/research/public/Zip/Zip_Zri_AllHomesPlusMultifamily_Sum
```

k - Calculate the mean Zillow Rent Index (ZRI)

```
mean(zillow$Zri)
```

```
## [1] 1509.323
```

BONUS

This is a bit harder, if you feel adventurous combine insights from question e and question g to calculate the mean ZRI for the state of Ohio.

```
mean(zillow[zillow$State=="OH", "Zri"])
```

```
## [1] 1089.942
```