

# Does a change in scenery cause a change in lifestyle?

Stat231: Google Calendar Report

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Due Friday, September 25 by 2:00 PM PDT

## How do I spend my time?

```
#Setting up table and altering column titles
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

library(readr)
Log <- read_csv("Log.csv")

## Parsed with column specification:
## cols(
##   START.DATE = col_datetime(format = ""),
##   END.DATE = col_datetime(format = ""),
##   START.TIME.LOCAL = col_character(),
##   END.TIME.LOCAL = col_character(),
##   DURATION = col_double(),
##   MINUTES = col_double(),
##   NAME = col_character(),
##   LOCATION = col_character()
## )

log = Log %>% filter (Log$START.TIME.LOCAL > "2020-08-15")
log$general.location = "Road Trip"
log$time.zone = "CDT"
Eastern = "EDT"
Central = "CDT"
```

```

Mountain = "MDT"
Pacific = "PDT"

#Adding time zone and location to table
logEast = log %>% filter (grepl(Eastern, log$START.TIME.LOCAL))
logEast$time.zone = "EDT"
logCentral = log %>% filter (grepl(Central, log$START.TIME.LOCAL))
logCentral$time.zone = "CDT"
logRT = rbind(logEast, logCentral)
logDEN = log %>% filter (grepl(Mountain, log$START.TIME.LOCAL))
logDEN$time.zone = "MDT"
logLA = log %>% filter (grepl(Pacific, log$START.TIME.LOCAL))
logLA$time.zone = "PDT"

#Adding general location & combining tables
logRT$general.location = "Road Trip"
logDEN$general.location = "Denver"
logLA$general.location = "Los Angeles"
time.log = rbind (logRT, logDEN, logLA)
time.log = time.log %>% rename(activity = "NAME")
time.log = time.log %>% rename(time.seconds = "DURATION")
time.log = time.log %>% rename(time.minutes = "MINUTES")

```

Describe your question(s) here. Briefly describe your data collection process, including how you defined variables of interest.

My questions are all regarding the differences in my behavior and how I have spent my time differently throughout my travels which I have categorized into three different sections of time (Road Trip, Denver, Los Angeles). Using an app that tracks changes in location, I am trying to notice patterns or blatant differences in lifestyle.

Describe what information is conveyed through data visualization #1 (that you'll create below) here.

This visualization showcases my average time spent on activities in each location. While this isn't the best comparison of what I spent my time doing in each location, it shows a change in lifestyle as I spent more time at certain places.

```

#Calculating average time spent per activity for each location.
print("Road trip:")

```

```
## [1] "Road trip:"
```

```

RT.time = tapply(logRT$MINUTES, logRT$NAME, mean)
RT.time

```

```

##   Chillin    Cycle   Flight    Food    Rest    Sleep Transport    Trips
## 104.18333  23.30000 139.38333  45.85556 18.96667 422.94444  56.31053  21.01667
##      Walk      Work
##  15.66818  23.85000

```

```
print("Denver:")
```

```
## [1] "Denver:"
```

```
DEN.time = tapply(logDEN$MINUTES, logDEN$NAME, mean)
DEN.time
```

```
##      Chillin      Flight      Food      Hiking      Shopping      Sleep      Transport
## 1018.35595 126.03333 79.01111 29.30833 77.40000 379.96528 41.39085
##      Trips      Walk
## 26.02500 17.83080
```

```
print("Los Angeles:")
```

```
## [1] "Los Angeles:"
```

```
LA.time = tapply(logLA$MINUTES, logLA$NAME, mean)
LA.time
```

```
##      Beach      Chillin      Flight      Food      Shopping      Sleep      Transport      Trips
## 194.71667 475.61296 172.41667 58.66429 29.90000 634.09226 23.37793 43.98333
##      Walk
## 13.63636
```

```
#Changing from array to data frame, adding location.
```

```
RT.time = as.data.frame.table(RT.time, col.names=pop)
```

```
RT.time$Location = "Road Trip"
```

```
DEN.time = as.data.frame.table(DEN.time, col.names=pop)
```

```
DEN.time$Location = "Denver"
```

```
LA.time = as.data.frame.table(LA.time, col.names=pop)
```

```
LA.time$Location = "Los Angeles"
```

```
#Combining 3 separate data frames into one
```

```
time.table = rbind(RT.time, DEN.time, LA.time)
```

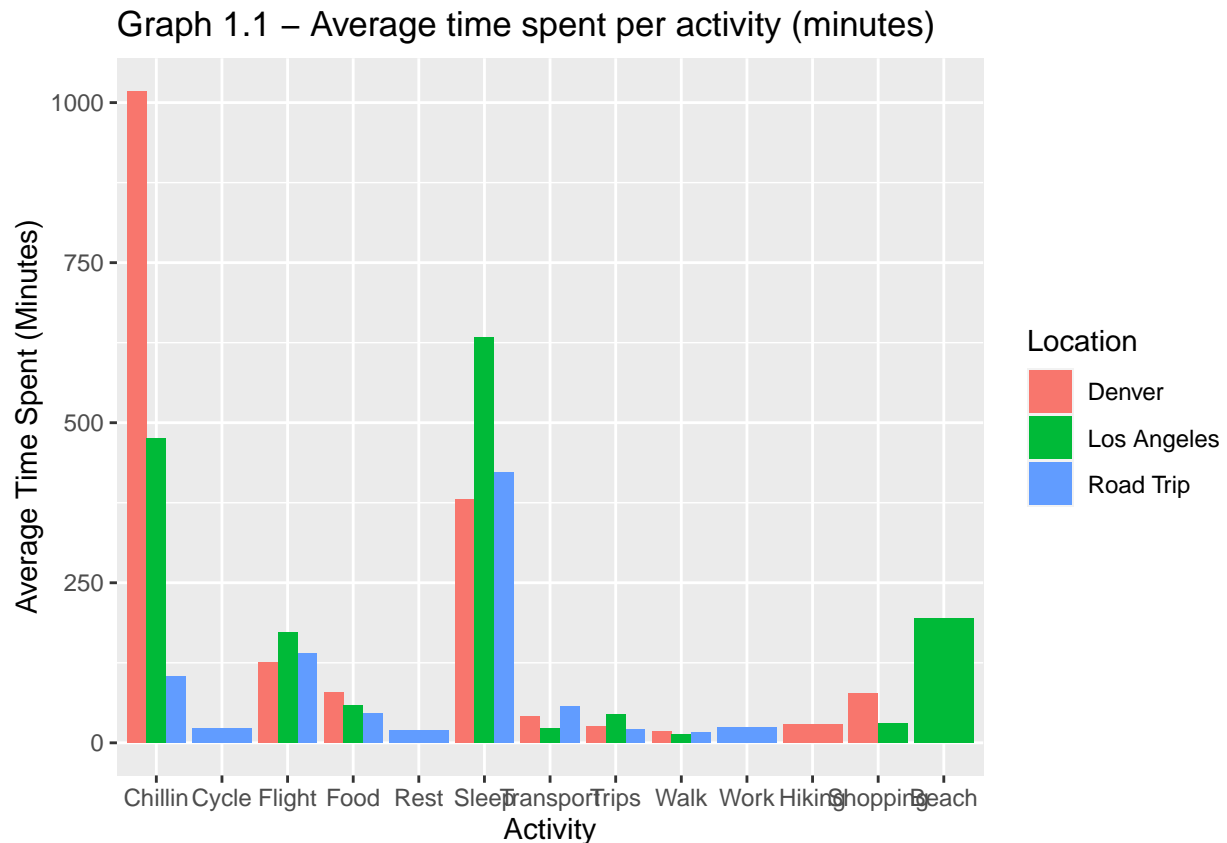
```
names(time.table) = c("Activity", "Average.Time.Spent", "Location")
```

```
time.table
```

```
##      Activity Average.Time.Spent      Location
## 1      Chillin      104.18333      Road Trip
## 2      Cycle      23.30000      Road Trip
## 3      Flight      139.38333      Road Trip
## 4      Food      45.85556      Road Trip
## 5      Rest      18.96667      Road Trip
## 6      Sleep      422.94444      Road Trip
## 7      Transport      56.31053      Road Trip
## 8      Trips      21.01667      Road Trip
## 9      Walk      15.66818      Road Trip
## 10     Work      23.85000      Road Trip
## 11     Chillin      1018.35595      Denver
## 12     Flight      126.03333      Denver
## 13     Food      79.01111      Denver
## 14     Hiking      29.30833      Denver
## 15     Shopping      77.40000      Denver
```

```
## 16      Sleep          379.96528      Denver
## 17 Transport          41.39085      Denver
## 18      Trips          26.02500      Denver
## 19      Walk           17.83080      Denver
## 20      Beach         194.71667 Los Angeles
## 21 Chillin           475.61296 Los Angeles
## 22      Flight        172.41667 Los Angeles
## 23      Food           58.66429 Los Angeles
## 24 Shopping           29.90000 Los Angeles
## 25      Sleep        634.09226 Los Angeles
## 26 Transport          23.37793 Los Angeles
## 27      Trips          43.98333 Los Angeles
## 28      Walk           13.63636 Los Angeles
```

```
#Creating bar graph, average time spent per activity
library(ggplot2)
plot = ggplot(time.table, aes(fill=Location, x=Activity, y=Average.Time.Spent))+
  geom_bar(stat="identity", position="dodge") +
  labs(x="Activity", y="Average Time Spent (Minutes)", title =
    "Graph 1.1 - Average time spent per activity (minutes)")
plot
```



This graph shows how much time I spent, on average, for each activity listed throughout the different areas of my travels.

Describe what information is conveyed through data visualization #2 (that you'll create below) here.

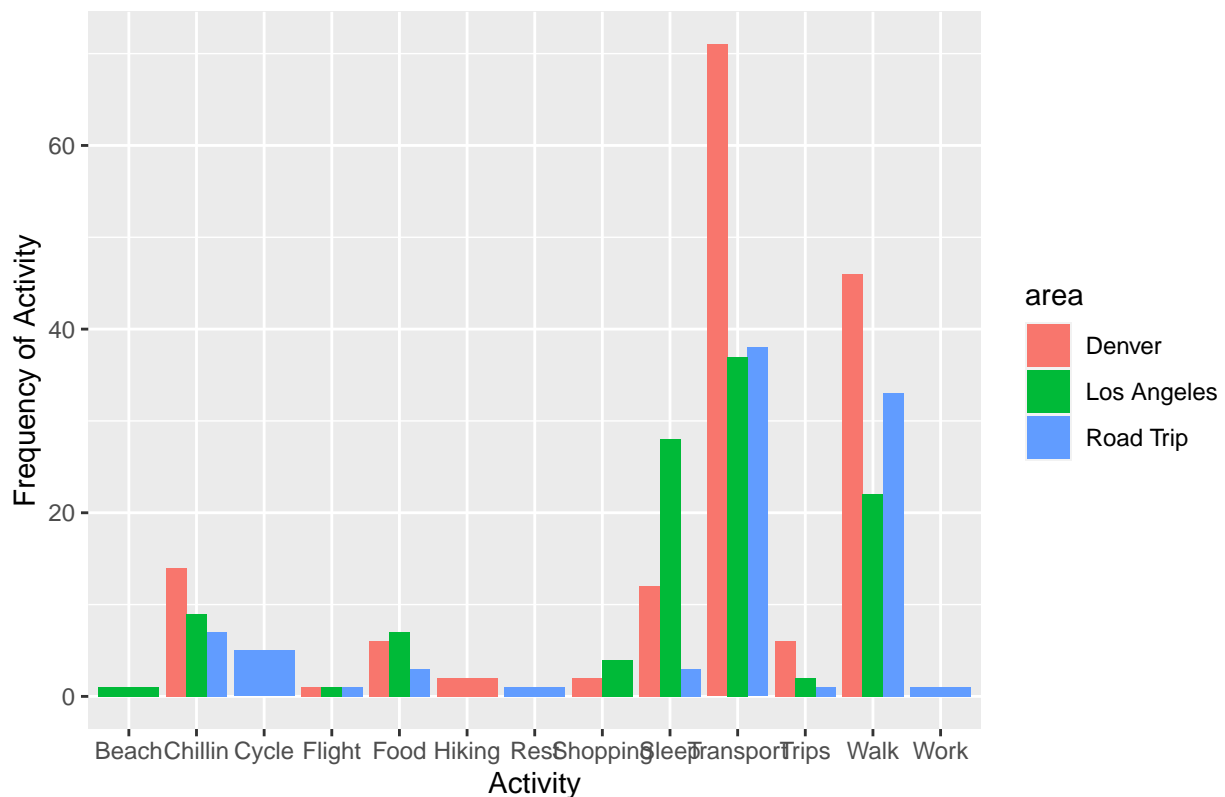
```
library(ggplot2)

#Counting times each activity was documented by location
RT.tally = tally(group_by(logRT, NAME))
RT.tally$area = "Road Trip"
DEN.tally = tally(group_by(logDEN, NAME))
DEN.tally$area = "Denver"
LA.tally = tally(group_by(logLA, NAME))
LA.tally$area = "Los Angeles"

#Combining all 3 tables
tally = rbind(RT.tally, DEN.tally, LA.tally)

#Creating and printing graph
tally = ggplot(tally, aes(fill=area, x=NAME, y=n)) +
  geom_bar(stat="identity", position="dodge") +
  labs(x="Activity", y="Frequency of Activity",
       title = "Graph 2.1 - Times each activity was documented by location")
tally
```

Graph 2.1 – Times each activity was documented by location



This graph shows how many times I did each activity listed throughout the different areas of my travels. Describe what information is conveyed through the table (that you'll create below) here.

```
#Selecting most important columns from larger data table
present = subset(log, select = -c(3:5, 8, 10))
present
```

## A tibble: 364 x 5

```
START.DATE END.DATE MINUTES NAME general.location
1 2020-08-15 10:37:42 2020-08-15 13:28:30 171. Transport Road Trip
2 2020-08-15 13:28:30 2020-08-15 13:57:55 29.4 Chillin Road Trip
3 2020-08-15 13:57:55 2020-08-15 15:34:27 96.5 Transport Road Trip
4 2020-08-15 15:34:27 2020-08-15 15:39:48 5.35 Walk Road Trip
5 2020-08-15 15:47:25 2020-08-15 17:08:09 80.7 Transport Road Trip
6 2020-08-15 17:08:09 2020-08-15 17:27:07 19.0 Rest Road Trip
7 2020-08-15 17:27:07 2020-08-15 18:44:41 77.6 Transport Road Trip
8 2020-08-15 18:58:36 2020-08-15 20:13:30 74.9 Transport Road Trip
9 2020-08-15 20:13:30 2020-08-15 20:36:31 23.0 Food Road Trip
10 2020-08-15 20:36:31 2020-08-15 20:43:21 6.83 Walk Road Trip
# ... with 354 more rows
```

This table shows each instance of my location changing enough that the app noticed it, and documented it as a different activity

To conclude, briefly summarize what you found in response to the questions posed here.

I found that my activities differed by location in ways I didn't expect. For example that I drove more times in Denver than anywhere else. Most of the other distinct differences, however, were expected. Such as that I've slept the most in Los Angeles, where I actually had a bed to sleep in.

## Reflection

Write your one-page reflection here in paragraph form. In particular, address:

- What difficulties in the data collection and analysis process did you encounter? Identify two of your main hurdles in gathering accurate data.

One problem I had to handle during my data collection and analysis process was that the app from which I drew my data only collected data as I changed location, as a result I had to add in data when I didn't change location but changed activity. This created issues as it is more difficult to recall specific times when I changed what I was doing. I also found that this app gave me way too much data, including the exact seconds when I started and stopped activities and had data dating back to the summer of 2017.

- What implications does that have for future data collection and/or analysis projects?

The implications I've drawn from this project are essentially just that I should update my data more frequently and rely less on apps. I also wish I had used a service which was only intended for this project, as using an app which I've used since 2017 resulted in an abundance of data and titles of activities such as "Chillin" which makes sense to me but in academia is a rather inappropriate title.

- How much data do you think you'd need to collect in order to answer your question(s) of interest? Would it be hard to collect that data? Why or why not?

I think the data I collected was sufficient to answer my questions of interest, however it would have been nice and more informative to have been able to include more data. One set of data I had hoped to use at one point was my heart rate as measured by my watch. I discovered, however, that the readings were not consistent enough to look at alongside the day-to-day data I had analyzed.

- As someone who provides data, what expectations do you have when you give your data (e.g. to Facebook, Google, MapMyRun, etc.)?

Well I would expect that these large corporates attempt to keep my data private, but I think we all know that this is not the case. I think at the very least, these large corporations could be more transparent and cooperative about what data they share. There are some facets of my data that I don't mind being public, especially if I get my internet experienced tailored more towards my taste as a result, however I don't enjoy when google maps knows when and where my flights are and where I will be staying and the duration of my stays.

- As someone who analyzes others' data, what ethical responsibilities do you have?

While analyzing the data of others, I would have the ethical responsibilities to analyze the data from an impartial view and, I believe, to use the data in an effort to better somebody's awareness of their own data. An important responsibility is to keep the data confidential and to communicate with the other party about your findings and any potential concerns regarding the data.