Bellabeat Report

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R Markdown

Summary

Bellabeat is a high-tech manufacturer of health-focused products for women. Bellabeat is a successful small company, but they have the potential to become a larger player in the global smart device market. Urška Sršen, cofounder and Chief Creative Officer of Bellabeat, believes that analyzing smart device fitness data could help unlock new growth opportunities for the company.

Phase 1: ASK

Objectives

Identify business task

- Business questions to be answered are:
  - What are some trends in smart device usage?
  - How could these trends apply to Bellabeat customers?
  - How could these trends help influence Bellabeat marketing strategy?
- These questions will be used to assess and identify potential opportunities for growth for the company. Likewise, recommendations for the Bellabeat marketing strategy improvement based on trends in smart device usage should be determined. Based on these factors, the key business task is, therefore:
- To identify trends in how consumers use non-Bellabeat smart devices to apply insights into Bellabeat's marketing strategy.

Consider key stakeholders

- Urška Sršen - Bellabeat co-founder and Chief Creative Officer
- Sando Mur - Bellabeat co-founder and a key member of the Bellabeat executive team
- Bellabeat Marketing Analytics team

Phase 2: PREPARE

Objectives

What dataset is to be used

For this project, I will use FitBit Fitness Tracker data collected from Kaggle.com.

Determine data format

The dataset downloaded from Kaggle is stored in long format as opposed to wide format.

Determine the credibility of data

The data is public data from FitBit Fitness Tracker Data. It's a dataset from thirty Fitbit users that includes a minute-level output for physical activity, heart rate, and sleep monitoring. It's a good database segmented in several tables with different aspects of the data of the device with lots of details about user behavior. Due to the limitation of size (30 users) and no demographic information being available, we could potentially have sampling bias. Likewise, we are not sure if the sample is representative of the population as a whole. Another problem we could encounter is that the dataset is not current, having last been updated over a year ago, and also the duration of the survey is just two months long, which means, any possible insight would be based on a very short sample time.

The dataset for analysis is stored in CSV format with hundreds of rows in 18 CSV files.

Phase 3: PROCESS

Objectives

Tools used

For this project, the analysis will be conducted in R due to its ease in handling big data, its accessibility, and its ability to create data visualization and to easily share my results with stakeholders.

Import datasets

Due to the small sample size, we won't consider for this analysis the Weight (8 Users) and heart rate (7 users) tables, but will rather focus on using only the daily activity file and the sleep file. To preview our dataset, selected data frames are created and the summary of each column is checked. To begin, we have to import the necessary libraries and install the necessary packages for the analysis.

```
install.packages('tidyverse')
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```
install.packages('here')
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```
install.packages('janitor')
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```
install.packages('lubridate')
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.6     v purrr   0.3.4
## v tibble  3.1.7     v dplyr   1.0.9
## v tidyr   1.2.0     v stringr 1.4.0
## v readr   2.1.2     v forcats 0.5.1
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
```

```
## x dplyr::lag()    masks stats::lag()
```

```
library(dplyr)
library(ggplot2)
library(tidyr)
library(lubridate)
```

```
##
## Attaching package: 'lubridate'
```

```
## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union
```

```
library(here)
```

```
## here() starts at /cloud/project
```

```
library(skimr)
library(janitor)
```

```
##
## Attaching package: 'janitor'
```

```
## The following objects are masked from 'package:stats':
##
##     chisq.test, fisher.test
```

```
library(ggrepel)
library(ggpubr)
```

The datasets that are gonna be used for analysis are imported. Then they are stored in separate data frames called daily_activity and sleep_day respectively.

```
daily_activity <- read.csv("dailyActivity_merged.csv")
sleep_day <- read.csv("sleepDay_merged.csv")
```

We then preview the datasets by showing a tibble of both data frames. ##### Preview datasets

```
head(daily_activity)
```

```
##           Id ActivityDate TotalSteps TotalDistance TrackerDistance
## 1 1503960366    4/12/2016      13162          8.50            8.50
## 2 1503960366    4/13/2016      10735          6.97            6.97
## 3 1503960366    4/14/2016      10460          6.74            6.74
## 4 1503960366    4/15/2016       9762          6.28            6.28
## 5 1503960366    4/16/2016      12669          8.16            8.16
## 6 1503960366    4/17/2016       9705          6.48            6.48
##   LoggedActivitiesDistance VeryActiveDistance ModeratelyActiveDistance
## 1                        0              1.88                      0.55
## 2                        0              1.57                      0.69
## 3                        0              2.44                      0.40
## 4                        0              2.14                      1.26
## 5                        0              2.71                      0.41
## 6                        0              3.19                      0.78
##   LightActiveDistance SedentaryActiveDistance VeryActiveMinutes
## 1                6.06                       0                25
## 2                4.71                       0                21
## 3                3.91                       0                30
```

```
## 4               2.83                        0               29
## 5               5.04                        0               36
## 6               2.51                        0               38
##   FairlyActiveMinutes LightlyActiveMinutes SedentaryMinutes Calories
## 1                  13                  328              728     1985
## 2                  19                  217              776     1797
## 3                  11                  181             1218     1776
## 4                  34                  209              726     1745
## 5                  10                  221              773     1863
## 6                  20                  164              539     1728
```

```
str(daily_activity)
```

```
## 'data.frame':    940 obs. of  15 variables:
##  $ Id                       : num  1.5e+09 1.5e+09 1.5e+09 1.5e+09 1.5e+09 ...
##  $ ActivityDate             : chr  "4/12/2016" "4/13/2016" "4/14/2016" "4/15/2016" ...
##  $ TotalSteps               : int  13162 10735 10460 9762 12669 9705 13019 15506 10544 9819 ...
##  $ TotalDistance            : num  8.5 6.97 6.74 6.28 8.16 ...
##  $ TrackerDistance          : num  8.5 6.97 6.74 6.28 8.16 ...
##  $ LoggedActivitiesDistance: num  0 0 0 0 0 0 0 0 0 0 ...
##  $ VeryActiveDistance       : num  1.88 1.57 2.44 2.14 2.71 ...
##  $ ModeratelyActiveDistance: num  0.55 0.69 0.4 1.26 0.41 ...
##  $ LightActiveDistance      : num  6.06 4.71 3.91 2.83 5.04 ...
##  $ SedentaryActiveDistance : num  0 0 0 0 0 0 0 0 0 0 ...
##  $ VeryActiveMinutes        : int  25 21 30 29 36 38 42 50 28 19 ...
##  $ FairlyActiveMinutes      : int  13 19 11 34 10 20 16 31 12 8 ...
##  $ LightlyActiveMinutes     : int  328 217 181 209 221 164 233 264 205 211 ...
##  $ SedentaryMinutes         : int  728 776 1218 726 773 539 1149 775 818 838 ...
##  $ Calories                 : int  1985 1797 1776 1745 1863 1728 1921 2035 1786 1775 ...
```

```
head(sleep_day)
```

```
##           Id              SleepDay TotalSleepRecords TotalMinutesAsleep
## 1 1503960366 4/12/2016 12:00:00 AM                 1                327
## 2 1503960366 4/13/2016 12:00:00 AM                 2                384
## 3 1503960366 4/15/2016 12:00:00 AM                 1                412
## 4 1503960366 4/16/2016 12:00:00 AM                 2                340
## 5 1503960366 4/17/2016 12:00:00 AM                 1                700
## 6 1503960366 4/19/2016 12:00:00 AM                 1                304
##   TotalTimeInBed
## 1            346
## 2            407
## 3            442
## 4            367
## 5            712
## 6            320
```

```
str(sleep_day)
```

```
## 'data.frame':    413 obs. of  5 variables:
##  $ Id                : num  1.5e+09 1.5e+09 1.5e+09 1.5e+09 1.5e+09 ...
##  $ SleepDay          : chr  "4/12/2016 12:00:00 AM" "4/13/2016 12:00:00 AM" "4/15/2016 12:00:00 AM" "
##  $ TotalSleepRecords : int  1 2 1 2 1 1 1 1 1 1 ...
##  $ TotalMinutesAsleep: int  327 384 412 340 700 304 360 325 361 430 ...
##  $ TotalTimeInBed    : int  346 407 442 367 712 320 377 364 384 449 ...
```

Cleaning Process

To begin the cleaning process, both data frames are searched for duplicates.

```
sum(duplicated(daily_activity))
```

Removing Duplicates

```
## [1] 0
```

```
sum(duplicated(sleep_day))
```

```
## [1] 3
```

The result of the search shows that the data frame containing sleep data has some duplicates, so we remove the empty rows to clean the data.

```
sleep_day <- sleep_day %>%
  distinct() %>%
  drop_na()
```

Then we check again to confirm that the empty rows have been dropped.

```
sum(duplicated(sleep_day))
```

```
## [1] 0
```

Renaming Columns To help keep formatting clean, and to ensure our column names align with naming conventions, we'll rename all columns to lowercase format.

```
##             id activity_date total_steps total_distance tracker_distance
## 1   1503960366     4/12/2016       13162           8.50             8.50
## 2   1503960366     4/13/2016       10735           6.97             6.97
## 3   1503960366     4/14/2016       10460           6.74             6.74
## 4   1503960366     4/15/2016        9762           6.28             6.28
## 5   1503960366     4/16/2016       12669           8.16             8.16
## 6   1503960366     4/17/2016        9705           6.48             6.48
## 7   1503960366     4/18/2016       13019           8.59             8.59
## 8   1503960366     4/19/2016       15506           9.88             9.88
## 9   1503960366     4/20/2016       10544           6.68             6.68
## 10  1503960366     4/21/2016        9819           6.34             6.34
## 11  1503960366     4/22/2016       12764           8.13             8.13
## 12  1503960366     4/23/2016       14371           9.04             9.04
## 13  1503960366     4/24/2016       10039           6.41             6.41
## 14  1503960366     4/25/2016       15355           9.80             9.80
## 15  1503960366     4/26/2016       13755           8.79             8.79
## 16  1503960366     4/27/2016       18134          12.21            12.21
## 17  1503960366     4/28/2016       13154           8.53             8.53
## 18  1503960366     4/29/2016       11181           7.15             7.15
## 19  1503960366     4/30/2016       14673           9.25             9.25
## 20  1503960366      5/1/2016       10602           6.81             6.81
## 21  1503960366      5/2/2016       14727           9.71             9.71
## 22  1503960366      5/3/2016       15103           9.66             9.66
## 23  1503960366      5/4/2016       11100           7.15             7.15
## 24  1503960366      5/5/2016       14070           8.90             8.90
## 25  1503960366      5/6/2016       12159           8.03             8.03
## 26  1503960366      5/7/2016       11992           7.71             7.71
```

```
## 27  1503960366      5/8/2016       10060           6.58           6.58
## 28  1503960366      5/9/2016       12022           7.72           7.72
## 29  1503960366     5/10/2016       12207           7.77           7.77
## 30  1503960366     5/11/2016       12770           8.13           8.13
## 31  1503960366     5/12/2016           0           0.00           0.00
## 32  1624580081     4/12/2016        8163           5.31           5.31
## 33  1624580081     4/13/2016        7007           4.55           4.55
## 34  1624580081     4/14/2016        9107           5.92           5.92
## 35  1624580081     4/15/2016        1510           0.98           0.98
## 36  1624580081     4/16/2016        5370           3.49           3.49
## 37  1624580081     4/17/2016        6175           4.06           4.06
## 38  1624580081     4/18/2016       10536           7.41           7.41
## 39  1624580081     4/19/2016        2916           1.90           1.90
## 40  1624580081     4/20/2016        4974           3.23           3.23
## 41  1624580081     4/21/2016        6349           4.13           4.13
## 42  1624580081     4/22/2016        4026           2.62           2.62
## 43  1624580081     4/23/2016        8538           5.55           5.55
## 44  1624580081     4/24/2016        6076           3.95           3.95
## 45  1624580081     4/25/2016        6497           4.22           4.22
## 46  1624580081     4/26/2016        2826           1.84           1.84
## 47  1624580081     4/27/2016        8367           5.44           5.44
## 48  1624580081     4/28/2016        2759           1.79           1.79
## 49  1624580081     4/29/2016        2390           1.55           1.55
## 50  1624580081     4/30/2016        6474           4.30           4.30
## 51  1624580081      5/1/2016       36019          28.03          28.03
## 52  1624580081      5/2/2016        7155           4.93           4.93
## 53  1624580081      5/3/2016        2100           1.37           1.37
## 54  1624580081      5/4/2016        2193           1.43           1.43
## 55  1624580081      5/5/2016        2470           1.61           1.61
## 56  1624580081      5/6/2016        1727           1.12           1.12
## 57  1624580081      5/7/2016        2104           1.37           1.37
## 58  1624580081      5/8/2016        3427           2.23           2.23
## 59  1624580081      5/9/2016        1732           1.13           1.13
## 60  1624580081     5/10/2016        2969           1.93           1.93
## 61  1624580081     5/11/2016        3134           2.04           2.04
## 62  1624580081     5/12/2016        2971           1.93           1.93
## 63  1644430081     4/12/2016       10694           7.77           7.77
## 64  1644430081     4/13/2016        8001           5.82           5.82
## 65  1644430081     4/14/2016       11037           8.02           8.02
## 66  1644430081     4/15/2016        5263           3.83           3.83
## 67  1644430081     4/16/2016       15300          11.12          11.12
## 68  1644430081     4/17/2016        8757           6.37           6.37
## 69  1644430081     4/18/2016        7132           5.19           5.19
## 70  1644430081     4/19/2016       11256           8.18           8.18
## 71  1644430081     4/20/2016        2436           1.77           1.77
## 72  1644430081     4/21/2016        1223           0.89           0.89
## 73  1644430081     4/22/2016        3673           2.67           2.67
## 74  1644430081     4/23/2016        6637           4.83           4.83
## 75  1644430081     4/24/2016        3321           2.41           2.41
## 76  1644430081     4/25/2016        3580           2.60           2.60
## 77  1644430081     4/26/2016        9919           7.21           7.21
## 78  1644430081     4/27/2016        3032           2.20           2.20
## 79  1644430081     4/28/2016        9405           6.84           6.84
## 80  1644430081     4/29/2016        3176           2.31           2.31
```

```
##  81  1644430081     4/30/2016       18213          13.24          13.24
##  82  1644430081      5/1/2016        6132           4.46           4.46
##  83  1644430081      5/2/2016        3758           2.73           2.73
##  84  1644430081      5/3/2016       12850           9.34           9.34
##  85  1644430081      5/4/2016        2309           1.68           1.68
##  86  1644430081      5/5/2016        4363           3.19           3.19
##  87  1644430081      5/6/2016        9787           7.12           7.12
##  88  1644430081      5/7/2016       13372           9.72           9.72
##  89  1644430081      5/8/2016        6724           4.89           4.89
##  90  1644430081      5/9/2016        6643           4.83           4.83
##  91  1644430081     5/10/2016        9167           6.66           6.66
##  92  1644430081     5/11/2016        1329           0.97           0.97
##  93  1844505072     4/12/2016        6697           4.43           4.43
##  94  1844505072     4/13/2016        4929           3.26           3.26
##  95  1844505072     4/14/2016        7937           5.25           5.25
##  96  1844505072     4/15/2016        3844           2.54           2.54
##  97  1844505072     4/16/2016        3414           2.26           2.26
##  98  1844505072     4/17/2016        4525           2.99           2.99
##  99  1844505072     4/18/2016        4597           3.04           3.04
## 100  1844505072     4/19/2016         197           0.13           0.13
## 101  1844505072     4/20/2016           8           0.01           0.01
## 102  1844505072     4/21/2016        8054           5.32           5.32
## 103  1844505072     4/22/2016        5372           3.55           3.55
## 104  1844505072     4/23/2016        3570           2.36           2.36
## 105  1844505072     4/24/2016           0           0.00           0.00
## 106  1844505072     4/25/2016           0           0.00           0.00
## 107  1844505072     4/26/2016           0           0.00           0.00
## 108  1844505072     4/27/2016           4           0.00           0.00
## 109  1844505072     4/28/2016        6907           4.57           4.57
## 110  1844505072     4/29/2016        4920           3.25           3.25
## 111  1844505072     4/30/2016        4014           2.67           2.67
## 112  1844505072      5/1/2016        2573           1.70           1.70
## 113  1844505072      5/2/2016           0           0.00           0.00
## 114  1844505072      5/3/2016        4059           2.68           2.68
## 115  1844505072      5/4/2016        2080           1.37           1.37
## 116  1844505072      5/5/2016        2237           1.48           1.48
## 117  1844505072      5/6/2016          44           0.03           0.03
## 118  1844505072      5/7/2016           0           0.00           0.00
## 119  1844505072      5/8/2016           0           0.00           0.00
## 120  1844505072      5/9/2016           0           0.00           0.00
## 121  1844505072     5/10/2016           0           0.00           0.00
## 122  1844505072     5/11/2016           0           0.00           0.00
## 123  1844505072     5/12/2016           0           0.00           0.00
## 124  1927972279     4/12/2016         678           0.47           0.47
## 125  1927972279     4/13/2016         356           0.25           0.25
## 126  1927972279     4/14/2016        2163           1.50           1.50
## 127  1927972279     4/15/2016         980           0.68           0.68
## 128  1927972279     4/16/2016           0           0.00           0.00
## 129  1927972279     4/17/2016           0           0.00           0.00
## 130  1927972279     4/18/2016         244           0.17           0.17
## 131  1927972279     4/19/2016           0           0.00           0.00
## 132  1927972279     4/20/2016           0           0.00           0.00
## 133  1927972279     4/21/2016           0           0.00           0.00
## 134  1927972279     4/22/2016         149           0.10           0.10
```

```
## 135 1927972279     4/23/2016        2945          2.04          2.04
## 136 1927972279     4/24/2016        2090          1.45          1.45
## 137 1927972279     4/25/2016         152          0.11          0.11
## 138 1927972279     4/26/2016        3761          2.60          2.60
## 139 1927972279     4/27/2016           0          0.00          0.00
## 140 1927972279     4/28/2016        1675          1.16          1.16
## 141 1927972279     4/29/2016           0          0.00          0.00
## 142 1927972279     4/30/2016           0          0.00          0.00
## 143 1927972279      5/1/2016        2704          1.87          1.87
## 144 1927972279      5/2/2016        3790          2.62          2.62
## 145 1927972279      5/3/2016        1326          0.92          0.92
## 146 1927972279      5/4/2016        1786          1.24          1.24
## 147 1927972279      5/5/2016           0          0.00          0.00
## 148 1927972279      5/6/2016        2091          1.45          1.45
## 149 1927972279      5/7/2016        1510          1.04          1.04
## 150 1927972279      5/8/2016           0          0.00          0.00
## 151 1927972279      5/9/2016           0          0.00          0.00
## 152 1927972279     5/10/2016           0          0.00          0.00
## 153 1927972279     5/11/2016           0          0.00          0.00
## 154 1927972279     5/12/2016           0          0.00          0.00
## 155 2022484408     4/12/2016       11875          8.34          8.34
## 156 2022484408     4/13/2016       12024          8.50          8.50
## 157 2022484408     4/14/2016       10690          7.50          7.50
## 158 2022484408     4/15/2016       11034          8.03          8.03
## 159 2022484408     4/16/2016       10100          7.09          7.09
## 160 2022484408     4/17/2016       15112         11.40         11.40
## 161 2022484408     4/18/2016       14131         10.07         10.07
## 162 2022484408     4/19/2016       11548          8.53          8.53
## 163 2022484408     4/20/2016       15112         10.67         10.67
## 164 2022484408     4/21/2016       12453          8.74          8.74
## 165 2022484408     4/22/2016       12954          9.33          9.33
## 166 2022484408     4/23/2016        6001          4.21          4.21
## 167 2022484408     4/24/2016       13481         10.28         10.28
## 168 2022484408     4/25/2016       11369          8.01          8.01
## 169 2022484408     4/26/2016       10119          7.19          7.19
## 170 2022484408     4/27/2016       10159          7.13          7.13
## 171 2022484408     4/28/2016       10140          7.12          7.12
## 172 2022484408     4/29/2016       10245          7.19          7.19
## 173 2022484408     4/30/2016       18387         12.91         12.91
## 174 2022484408      5/1/2016       10538          7.40          7.40
## 175 2022484408      5/2/2016       10379          7.29          7.29
## 176 2022484408      5/3/2016       12183          8.74          8.74
## 177 2022484408      5/4/2016       11768          8.29          8.29
## 178 2022484408      5/5/2016       11895          8.35          8.35
## 179 2022484408      5/6/2016       10227          7.18          7.18
## 180 2022484408      5/7/2016        6708          4.71          4.71
## 181 2022484408      5/8/2016        3292          2.31          2.31
## 182 2022484408      5/9/2016       13379          9.39          9.39
## 183 2022484408     5/10/2016       12798          8.98          8.98
## 184 2022484408     5/11/2016       13272          9.32          9.32
## 185 2022484408     5/12/2016        9117          6.41          6.41
## 186 2026352035     4/12/2016        4414          2.74          2.74
## 187 2026352035     4/13/2016        4993          3.10          3.10
## 188 2026352035     4/14/2016        3335          2.07          2.07
```

```
## 189 2026352035     4/15/2016        3821          2.37          2.37
## 190 2026352035     4/16/2016        2547          1.58          1.58
## 191 2026352035     4/17/2016         838          0.52          0.52
## 192 2026352035     4/18/2016        3325          2.06          2.06
## 193 2026352035     4/19/2016        2424          1.50          1.50
## 194 2026352035     4/20/2016        7222          4.48          4.48
## 195 2026352035     4/21/2016        2467          1.53          1.53
## 196 2026352035     4/22/2016        2915          1.81          1.81
## 197 2026352035     4/23/2016       12357          7.71          7.71
## 198 2026352035     4/24/2016        3490          2.16          2.16
## 199 2026352035     4/25/2016        6017          3.73          3.73
## 200 2026352035     4/26/2016        5933          3.68          3.68
## 201 2026352035     4/27/2016        6088          3.77          3.77
## 202 2026352035     4/28/2016        6375          3.95          3.95
## 203 2026352035     4/29/2016        7604          4.71          4.71
## 204 2026352035     4/30/2016        4729          2.93          2.93
## 205 2026352035      5/1/2016        3609          2.28          2.28
## 206 2026352035      5/2/2016        7018          4.35          4.35
## 207 2026352035      5/3/2016        5992          3.72          3.72
## 208 2026352035      5/4/2016        6564          4.07          4.07
## 209 2026352035      5/5/2016       12167          7.54          7.54
## 210 2026352035      5/6/2016        8198          5.08          5.08
## 211 2026352035      5/7/2016        4193          2.60          2.60
## 212 2026352035      5/8/2016        5528          3.45          3.45
## 213 2026352035      5/9/2016       10685          6.62          6.62
## 214 2026352035     5/10/2016         254          0.16          0.16
## 215 2026352035     5/11/2016        8580          5.32          5.32
## 216 2026352035     5/12/2016        8891          5.51          5.51
## 217 2320127002     4/12/2016       10725          7.49          7.49
## 218 2320127002     4/13/2016        7275          4.90          4.90
## 219 2320127002     4/14/2016        3973          2.68          2.68
## 220 2320127002     4/15/2016        5205          3.51          3.51
## 221 2320127002     4/16/2016        5057          3.41          3.41
## 222 2320127002     4/17/2016        6198          4.18          4.18
## 223 2320127002     4/18/2016        6559          4.42          4.42
## 224 2320127002     4/19/2016        5997          4.04          4.04
## 225 2320127002     4/20/2016        7192          4.85          4.85
## 226 2320127002     4/21/2016        3404          2.29          2.29
## 227 2320127002     4/22/2016        5583          3.76          3.76
## 228 2320127002     4/23/2016        5079          3.42          3.42
## 229 2320127002     4/24/2016        4165          2.81          2.81
## 230 2320127002     4/25/2016        3588          2.42          2.42
## 231 2320127002     4/26/2016        3409          2.30          2.30
## 232 2320127002     4/27/2016        1715          1.16          1.16
## 233 2320127002     4/28/2016        1532          1.03          1.03
## 234 2320127002     4/29/2016         924          0.62          0.62
## 235 2320127002     4/30/2016        4571          3.08          3.08
## 236 2320127002      5/1/2016         772          0.52          0.52
## 237 2320127002      5/2/2016        3634          2.45          2.45
## 238 2320127002      5/3/2016        7443          5.02          5.02
## 239 2320127002      5/4/2016        1201          0.81          0.81
## 240 2320127002      5/5/2016        5202          3.51          3.51
## 241 2320127002      5/6/2016        4878          3.29          3.29
## 242 2320127002      5/7/2016        7379          4.97          4.97
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## 243 2320127002      5/8/2016        5161          3.48          3.48
## 244 2320127002      5/9/2016        3090          2.08          2.08
## 245 2320127002     5/10/2016        6227          4.20          4.20
## 246 2320127002     5/11/2016        6424          4.33          4.33
## 247 2320127002     5/12/2016        2661          1.79          1.79
## 248 2347167796     4/12/2016       10113          6.83          6.83
## 249 2347167796     4/13/2016       10352          7.01          7.01
## 250 2347167796     4/14/2016       10129          6.70          6.70
## 251 2347167796     4/15/2016       10465          6.92          6.92
## 252 2347167796     4/16/2016       22244         15.08         15.08
## 253 2347167796     4/17/2016        5472          3.62          3.62
## 254 2347167796     4/18/2016        8247          5.45          5.45
## 255 2347167796     4/19/2016        6711          4.44          4.44
## 256 2347167796     4/20/2016       10999          7.27          7.27
## 257 2347167796     4/21/2016       10080          6.75          6.75
## 258 2347167796     4/22/2016        7804          5.16          5.16
## 259 2347167796     4/23/2016       16901         11.37         11.37
## 260 2347167796     4/24/2016        9471          6.26          6.26
## 261 2347167796     4/25/2016        9482          6.38          6.38
## 262 2347167796     4/26/2016        5980          3.95          3.95
## 263 2347167796     4/27/2016       11423          7.58          7.58
## 264 2347167796     4/28/2016        5439          3.60          3.60
## 265 2347167796     4/29/2016          42          0.03          0.03
## 266 2873212765     4/12/2016        8796          5.91          5.91
## 267 2873212765     4/13/2016        7618          5.12          5.12
## 268 2873212765     4/14/2016        7910          5.32          5.32
## 269 2873212765     4/15/2016        8482          5.70          5.70
## 270 2873212765     4/16/2016        9685          6.65          6.65
## 271 2873212765     4/17/2016        2524          1.70          1.70
## 272 2873212765     4/18/2016        7762          5.24          5.24
## 273 2873212765     4/19/2016        7948          5.37          5.37
## 274 2873212765     4/20/2016        9202          6.30          6.30
## 275 2873212765     4/21/2016        8859          5.98          5.98
## 276 2873212765     4/22/2016        7286          4.90          4.90
## 277 2873212765     4/23/2016        9317          6.35          6.35
## 278 2873212765     4/24/2016        6873          4.68          4.68
## 279 2873212765     4/25/2016        7373          4.95          4.95
## 280 2873212765     4/26/2016        8242          5.54          5.54
## 281 2873212765     4/27/2016        3516          2.36          2.36
## 282 2873212765     4/28/2016        7913          5.41          5.41
## 283 2873212765     4/29/2016        7365          4.95          4.95
## 284 2873212765     4/30/2016        8452          5.68          5.68
## 285 2873212765      5/1/2016        7399          4.97          4.97
## 286 2873212765      5/2/2016        7525          5.06          5.06
## 287 2873212765      5/3/2016        7412          4.98          4.98
## 288 2873212765      5/4/2016        8278          5.56          5.56
## 289 2873212765      5/5/2016        8314          5.61          5.61
## 290 2873212765      5/6/2016        7063          4.75          4.75
## 291 2873212765      5/7/2016        4940          3.38          3.38
## 292 2873212765      5/8/2016        8168          5.54          5.54
## 293 2873212765      5/9/2016        7726          5.19          5.19
## 294 2873212765     5/10/2016        8275          5.56          5.56
## 295 2873212765     5/11/2016        6440          4.33          4.33
## 296 2873212765     5/12/2016        7566          5.11          5.11
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## 297 3372868164     4/12/2016        4747          3.24          3.24
## 298 3372868164     4/13/2016        9715          6.63          6.63
## 299 3372868164     4/14/2016        8844          6.03          6.03
## 300 3372868164     4/15/2016        7451          5.08          5.08
## 301 3372868164     4/16/2016        6905          4.73          4.73
## 302 3372868164     4/17/2016        8199          5.88          5.88
## 303 3372868164     4/18/2016        6798          4.64          4.64
## 304 3372868164     4/19/2016        7711          5.26          5.26
## 305 3372868164     4/20/2016        4880          3.33          3.33
## 306 3372868164     4/21/2016        8857          6.07          6.07
## 307 3372868164     4/22/2016        3843          2.62          2.62
## 308 3372868164     4/23/2016        7396          5.07          5.07
## 309 3372868164     4/24/2016        6731          4.59          4.59
## 310 3372868164     4/25/2016        5995          4.09          4.09
## 311 3372868164     4/26/2016        8283          5.79          5.79
## 312 3372868164     4/27/2016        7904          5.42          5.42
## 313 3372868164     4/28/2016        5512          3.76          3.76
## 314 3372868164     4/29/2016        9135          6.23          6.23
## 315 3372868164     4/30/2016        5250          3.58          3.58
## 316 3372868164      5/1/2016        3077          2.10          2.10
## 317 3977333714     4/12/2016        8856          5.98          5.98
## 318 3977333714     4/13/2016       10035          6.71          6.71
## 319 3977333714     4/14/2016        7641          5.11          5.11
## 320 3977333714     4/15/2016        9010          6.06          6.06
## 321 3977333714     4/16/2016       13459          9.00          9.00
## 322 3977333714     4/17/2016       10415          6.97          6.97
## 323 3977333714     4/18/2016       11663          7.80          7.80
## 324 3977333714     4/19/2016       12414          8.78          8.78
## 325 3977333714     4/20/2016       11658          7.83          7.83
## 326 3977333714     4/21/2016        6093          4.08          4.08
## 327 3977333714     4/22/2016        8911          5.96          5.96
## 328 3977333714     4/23/2016       12058          8.07          8.07
## 329 3977333714     4/24/2016       14112         10.00         10.00
## 330 3977333714     4/25/2016       11177          8.48          8.48
## 331 3977333714     4/26/2016       11388          7.62          7.62
## 332 3977333714     4/27/2016        7193          5.04          5.04
## 333 3977333714     4/28/2016        7114          4.88          4.88
## 334 3977333714     4/29/2016       10645          7.75          7.75
## 335 3977333714     4/30/2016       13238          9.20          9.20
## 336 3977333714      5/1/2016       10414          7.07          7.07
## 337 3977333714      5/2/2016       16520         11.05         11.05
## 338 3977333714      5/3/2016       14335          9.59          9.59
## 339 3977333714      5/4/2016       13559          9.44          9.44
## 340 3977333714      5/5/2016       12312          8.58          8.58
## 341 3977333714      5/6/2016       11677          8.28          8.28
## 342 3977333714      5/7/2016       11550          7.73          7.73
## 343 3977333714      5/8/2016       13585          9.09          9.09
## 344 3977333714      5/9/2016       14687         10.08         10.08
## 345 3977333714     5/10/2016       13072          8.78          8.78
## 346 3977333714     5/11/2016         746          0.50          0.50
## 347 4020332650     4/12/2016        8539          6.12          6.12
## 348 4020332650     4/13/2016           0          0.00          0.00
## 349 4020332650     4/14/2016         108          0.08          0.08
## 350 4020332650     4/15/2016        1882          1.35          1.35
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## 351 4020332650     4/16/2016        1982          1.42          1.42
## 352 4020332650     4/17/2016          16          0.01          0.01
## 353 4020332650     4/18/2016          62          0.04          0.04
## 354 4020332650     4/19/2016           0          0.00          0.00
## 355 4020332650     4/20/2016           0          0.00          0.00
## 356 4020332650     4/21/2016           0          0.00          0.00
## 357 4020332650     4/22/2016           0          0.00          0.00
## 358 4020332650     4/23/2016           0          0.00          0.00
## 359 4020332650     4/24/2016           0          0.00          0.00
## 360 4020332650     4/25/2016           0          0.00          0.00
## 361 4020332650     4/26/2016           0          0.00          0.00
## 362 4020332650     4/27/2016           0          0.00          0.00
## 363 4020332650     4/28/2016           0          0.00          0.00
## 364 4020332650     4/29/2016           0          0.00          0.00
## 365 4020332650     4/30/2016           0          0.00          0.00
## 366 4020332650      5/1/2016           0          0.00          0.00
## 367 4020332650      5/2/2016         475          0.34          0.34
## 368 4020332650      5/3/2016        4496          3.22          3.22
## 369 4020332650      5/4/2016       10252          7.35          7.35
## 370 4020332650      5/5/2016       11728          8.43          8.43
## 371 4020332650      5/6/2016        4369          3.13          3.13
## 372 4020332650      5/7/2016        6132          4.40          4.40
## 373 4020332650      5/8/2016        5862          4.20          4.20
## 374 4020332650      5/9/2016        4556          3.27          3.27
## 375 4020332650     5/10/2016        5546          3.98          3.98
## 376 4020332650     5/11/2016        3689          2.65          2.65
## 377 4020332650     5/12/2016         590          0.42          0.42
## 378 4057192912     4/12/2016        5394          4.03          4.03
## 379 4057192912     4/13/2016        5974          4.47          4.47
## 380 4057192912     4/14/2016           0          0.00          0.00
## 381 4057192912     4/15/2016        3984          2.95          2.95
## 382 4319703577     4/12/2016        7753          5.20          5.20
## 383 4319703577     4/13/2016        8204          5.50          5.50
## 384 4319703577     4/14/2016       10210          6.88          6.88
## 385 4319703577     4/15/2016        5664          3.80          3.80
## 386 4319703577     4/16/2016        4744          3.18          3.18
## 387 4319703577     4/17/2016          29          0.02          0.02
## 388 4319703577     4/18/2016        2276          1.55          1.55
## 389 4319703577     4/19/2016        8925          5.99          5.99
## 390 4319703577     4/20/2016        8954          6.01          6.01
## 391 4319703577     4/21/2016        3702          2.48          2.48
## 392 4319703577     4/22/2016        4500          3.02          3.02
## 393 4319703577     4/23/2016        4935          3.31          3.31
## 394 4319703577     4/24/2016        4081          2.74          2.74
## 395 4319703577     4/25/2016        9259          6.21          6.21
## 396 4319703577     4/26/2016        9899          6.64          6.64
## 397 4319703577     4/27/2016       10780          7.23          7.23
## 398 4319703577     4/28/2016       10817          7.28          7.28
## 399 4319703577     4/29/2016        7990          5.36          5.36
## 400 4319703577     4/30/2016        8221          5.52          5.52
## 401 4319703577      5/1/2016        1251          0.84          0.84
## 402 4319703577      5/2/2016        9261          6.24          6.24
## 403 4319703577      5/3/2016        9648          6.47          6.47
## 404 4319703577      5/4/2016       10429          7.02          7.02
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## 405 4319703577      5/5/2016       13658          9.49          9.49
## 406 4319703577      5/6/2016        9524          6.42          6.42
## 407 4319703577      5/7/2016        7937          5.33          5.33
## 408 4319703577      5/8/2016        3672          2.46          2.46
## 409 4319703577      5/9/2016       10378          6.96          6.96
## 410 4319703577     5/10/2016        9487          6.37          6.37
## 411 4319703577     5/11/2016        9129          6.13          6.13
## 412 4319703577     5/12/2016          17          0.01          0.01
## 413 4388161847     4/12/2016       10122          7.78          7.78
## 414 4388161847     4/13/2016       10993          8.45          8.45
## 415 4388161847     4/14/2016        8863          6.82          6.82
## 416 4388161847     4/15/2016        8758          6.73          6.73
## 417 4388161847     4/16/2016        6580          5.06          5.06
## 418 4388161847     4/17/2016        4660          3.58          3.58
## 419 4388161847     4/18/2016       11009          9.10          9.10
## 420 4388161847     4/19/2016       10181          7.83          7.83
## 421 4388161847     4/20/2016       10553          8.12          8.12
## 422 4388161847     4/21/2016       10055          7.73          7.73
## 423 4388161847     4/22/2016       12139          9.34          9.34
## 424 4388161847     4/23/2016       13236         10.18         10.18
## 425 4388161847     4/24/2016       10243          7.88          7.88
## 426 4388161847     4/25/2016       12961          9.97          9.97
## 427 4388161847     4/26/2016        9461          7.28          7.28
## 428 4388161847     4/27/2016       11193          8.61          8.61
## 429 4388161847     4/28/2016       10074          7.75          7.75
## 430 4388161847     4/29/2016        9232          7.10          7.10
## 431 4388161847     4/30/2016       12533          9.64          9.64
## 432 4388161847      5/1/2016       10255          7.89          7.89
## 433 4388161847      5/2/2016       10096          8.40          8.40
## 434 4388161847      5/3/2016       12727          9.79          9.79
## 435 4388161847      5/4/2016       12375          9.52          9.52
## 436 4388161847      5/5/2016        9603          7.38          7.38
## 437 4388161847      5/6/2016       13175         10.13         10.13
## 438 4388161847      5/7/2016       22770         17.54         17.54
## 439 4388161847      5/8/2016       17298         14.38         14.38
## 440 4388161847      5/9/2016       10218          7.86          7.86
## 441 4388161847     5/10/2016       10299          7.92          7.92
## 442 4388161847     5/11/2016       10201          7.84          7.84
## 443 4388161847     5/12/2016        3369          2.59          2.59
## 444 4445114986     4/12/2016        3276          2.20          2.20
## 445 4445114986     4/13/2016        2961          1.99          1.99
## 446 4445114986     4/14/2016        3974          2.67          2.67
## 447 4445114986     4/15/2016        7198          4.83          4.83
## 448 4445114986     4/16/2016        3945          2.65          2.65
## 449 4445114986     4/17/2016        2268          1.52          1.52
## 450 4445114986     4/18/2016        6155          4.24          4.24
## 451 4445114986     4/19/2016        2064          1.39          1.39
## 452 4445114986     4/20/2016        2072          1.39          1.39
## 453 4445114986     4/21/2016        3809          2.56          2.56
## 454 4445114986     4/22/2016        6831          4.58          4.58
## 455 4445114986     4/23/2016        4363          2.93          2.93
## 456 4445114986     4/24/2016        5002          3.36          3.36
## 457 4445114986     4/25/2016        3385          2.27          2.27
## 458 4445114986     4/26/2016        6326          4.41          4.41
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## 459 4445114986     4/27/2016        7243          5.03          5.03
## 460 4445114986     4/28/2016        4493          3.01          3.01
## 461 4445114986     4/29/2016        4676          3.14          3.14
## 462 4445114986     4/30/2016        6222          4.18          4.18
## 463 4445114986      5/1/2016        5232          3.51          3.51
## 464 4445114986      5/2/2016        6910          4.75          4.75
## 465 4445114986      5/3/2016        7502          5.18          5.18
## 466 4445114986      5/4/2016        2923          1.96          1.96
## 467 4445114986      5/5/2016        3800          2.55          2.55
## 468 4445114986      5/6/2016        4514          3.03          3.03
## 469 4445114986      5/7/2016        5183          3.59          3.59
## 470 4445114986      5/8/2016        7303          4.90          4.90
## 471 4445114986      5/9/2016        5275          3.54          3.54
## 472 4445114986     5/10/2016        3915          2.63          2.63
## 473 4445114986     5/11/2016        9105          6.11          6.11
## 474 4445114986     5/12/2016         768          0.52          0.52
## 475 4558609924     4/12/2016        5135          3.39          3.39
## 476 4558609924     4/13/2016        4978          3.29          3.29
## 477 4558609924     4/14/2016        6799          4.49          4.49
## 478 4558609924     4/15/2016        7795          5.15          5.15
## 479 4558609924     4/16/2016        7289          4.82          4.82
## 480 4558609924     4/17/2016        9634          6.40          6.40
## 481 4558609924     4/18/2016        8940          5.91          5.91
## 482 4558609924     4/19/2016        5401          3.57          3.57
## 483 4558609924     4/20/2016        4803          3.17          3.17
## 484 4558609924     4/21/2016       13743          9.08          9.08
## 485 4558609924     4/22/2016        9601          6.35          6.35
## 486 4558609924     4/23/2016        6890          4.55          4.55
## 487 4558609924     4/24/2016        8563          5.66          5.66
## 488 4558609924     4/25/2016        8095          5.35          5.35
## 489 4558609924     4/26/2016        9148          6.05          6.05
## 490 4558609924     4/27/2016        9557          6.32          6.32
## 491 4558609924     4/28/2016        9451          6.25          6.25
## 492 4558609924     4/29/2016        7833          5.18          5.18
## 493 4558609924     4/30/2016       10319          6.82          6.82
## 494 4558609924      5/1/2016        3428          2.27          2.27
## 495 4558609924      5/2/2016        7891          5.22          5.22
## 496 4558609924      5/3/2016        5267          3.48          3.48
## 497 4558609924      5/4/2016        5232          3.46          3.46
## 498 4558609924      5/5/2016       10611          7.01          7.01
## 499 4558609924      5/6/2016        3755          2.48          2.48
## 500 4558609924      5/7/2016        8237          5.44          5.44
## 501 4558609924      5/8/2016        6543          4.33          4.33
## 502 4558609924      5/9/2016       11451          7.57          7.57
## 503 4558609924     5/10/2016        6435          4.25          4.25
## 504 4558609924     5/11/2016        9108          6.02          6.02
## 505 4558609924     5/12/2016        6307          4.17          4.17
## 506 4702921684     4/12/2016        7213          5.88          5.88
## 507 4702921684     4/13/2016        6877          5.58          5.58
## 508 4702921684     4/14/2016        7860          6.37          6.37
## 509 4702921684     4/15/2016        6506          5.28          5.28
## 510 4702921684     4/16/2016       11140          9.03          9.03
## 511 4702921684     4/17/2016       12692         10.29         10.29
## 512 4702921684     4/18/2016        9105          7.38          7.38
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## 513 4702921684     4/19/2016        6708          5.44          5.44
## 514 4702921684     4/20/2016        8793          7.13          7.13
## 515 4702921684     4/21/2016        6530          5.30          5.30
## 516 4702921684     4/22/2016        1664          1.35          1.35
## 517 4702921684     4/23/2016       15126         12.27         12.27
## 518 4702921684     4/24/2016       15050         12.22         12.22
## 519 4702921684     4/25/2016        9167          7.43          7.43
## 520 4702921684     4/26/2016        6108          4.95          4.95
## 521 4702921684     4/27/2016        7047          5.72          5.72
## 522 4702921684     4/28/2016        9023          7.32          7.32
## 523 4702921684     4/29/2016        9930          8.05          8.05
## 524 4702921684     4/30/2016       10144          8.23          8.23
## 525 4702921684      5/1/2016           0          0.00          0.00
## 526 4702921684      5/2/2016        7245          5.92          5.92
## 527 4702921684      5/3/2016        9454          7.67          7.67
## 528 4702921684      5/4/2016        8161          6.62          6.62
## 529 4702921684      5/5/2016        8614          6.99          6.99
## 530 4702921684      5/6/2016        6943          5.63          5.63
## 531 4702921684      5/7/2016       14370         11.65         11.65
## 532 4702921684      5/8/2016       12857         10.43         10.43
## 533 4702921684      5/9/2016        8232          6.68          6.68
## 534 4702921684     5/10/2016       10613          8.61          8.61
## 535 4702921684     5/11/2016        9810          7.96          7.96
## 536 4702921684     5/12/2016        2752          2.23          2.23
## 537 5553957443     4/12/2016       11596          7.57          7.57
## 538 5553957443     4/13/2016        4832          3.16          3.16
## 539 5553957443     4/14/2016       17022         11.12         11.12
## 540 5553957443     4/15/2016       16556         10.86         10.86
## 541 5553957443     4/16/2016        5771          3.77          3.77
## 542 5553957443     4/17/2016         655          0.43          0.43
## 543 5553957443     4/18/2016        3727          2.43          2.43
## 544 5553957443     4/19/2016       15482         10.11         10.11
## 545 5553957443     4/20/2016        2713          1.77          1.77
## 546 5553957443     4/21/2016       12346          8.06          8.06
## 547 5553957443     4/22/2016       11682          7.63          7.63
## 548 5553957443     4/23/2016        4112          2.69          2.69
## 549 5553957443     4/24/2016        1807          1.18          1.18
## 550 5553957443     4/25/2016       10946          7.19          7.19
## 551 5553957443     4/26/2016       11886          7.76          7.76
## 552 5553957443     4/27/2016       10538          6.88          6.88
## 553 5553957443     4/28/2016       11393          7.63          7.63
## 554 5553957443     4/29/2016       12764          8.33          8.33
## 555 5553957443     4/30/2016        1202          0.78          0.78
## 556 5553957443      5/1/2016        5164          3.37          3.37
## 557 5553957443      5/2/2016        9769          6.38          6.38
## 558 5553957443      5/3/2016       12848          8.39          8.39
## 559 5553957443      5/4/2016        4249          2.77          2.77
## 560 5553957443      5/5/2016       14331          9.51          9.51
## 561 5553957443      5/6/2016        9632          6.29          6.29
## 562 5553957443      5/7/2016        1868          1.22          1.22
## 563 5553957443      5/8/2016        6083          4.00          4.00
## 564 5553957443      5/9/2016       11611          7.58          7.58
## 565 5553957443     5/10/2016       16358         10.71         10.71
## 566 5553957443     5/11/2016        4926          3.22          3.22
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## 567 5553957443     5/12/2016        3121          2.04          2.04
## 568 5577150313     4/12/2016        8135          6.08          6.08
## 569 5577150313     4/13/2016        5077          3.79          3.79
## 570 5577150313     4/14/2016        8596          6.42          6.42
## 571 5577150313     4/15/2016       12087          9.08          9.08
## 572 5577150313     4/16/2016       14269         10.66         10.66
## 573 5577150313     4/17/2016       12231          9.14          9.14
## 574 5577150313     4/18/2016        9893          7.39          7.39
## 575 5577150313     4/19/2016       12574          9.42          9.42
## 576 5577150313     4/20/2016        8330          6.22          6.22
## 577 5577150313     4/21/2016       10830          8.09          8.09
## 578 5577150313     4/22/2016        9172          6.85          6.85
## 579 5577150313     4/23/2016        7638          5.71          5.71
## 580 5577150313     4/24/2016       15764         11.78         11.78
## 581 5577150313     4/25/2016        6393          4.78          4.78
## 582 5577150313     4/26/2016        5325          3.98          3.98
## 583 5577150313     4/27/2016        6805          5.14          5.14
## 584 5577150313     4/28/2016        9841          7.43          7.43
## 585 5577150313     4/29/2016        7924          5.92          5.92
## 586 5577150313     4/30/2016       12363          9.24          9.24
## 587 5577150313      5/1/2016       13368          9.99          9.99
## 588 5577150313      5/2/2016        7439          5.56          5.56
## 589 5577150313      5/3/2016       11045          8.25          8.25
## 590 5577150313      5/4/2016        5206          3.89          3.89
## 591 5577150313      5/5/2016        7550          5.64          5.64
## 592 5577150313      5/6/2016        4950          3.70          3.70
## 593 5577150313      5/7/2016           0          0.00          0.00
## 594 5577150313      5/8/2016           0          0.00          0.00
## 595 5577150313      5/9/2016        3421          2.56          2.56
## 596 5577150313     5/10/2016        8869          6.65          6.65
## 597 5577150313     5/11/2016        4038          3.04          3.04
## 598 6117666160     4/12/2016           0          0.00          0.00
## 599 6117666160     4/13/2016           0          0.00          0.00
## 600 6117666160     4/14/2016           0          0.00          0.00
## 601 6117666160     4/15/2016       14019         10.59         10.59
## 602 6117666160     4/16/2016       14450         10.91         10.91
## 603 6117666160     4/17/2016        7150          5.40          5.40
## 604 6117666160     4/18/2016        5153          3.91          3.91
## 605 6117666160     4/19/2016       11135          8.41          8.41
## 606 6117666160     4/20/2016       10449          8.02          8.02
## 607 6117666160     4/21/2016       19542         15.01         15.01
## 608 6117666160     4/22/2016        8206          6.20          6.20
## 609 6117666160     4/23/2016       11495          8.68          8.68
## 610 6117666160     4/24/2016        7623          5.76          5.76
## 611 6117666160     4/25/2016           0          0.00          0.00
## 612 6117666160     4/26/2016        9543          7.21          7.21
## 613 6117666160     4/27/2016        9411          7.11          7.11
## 614 6117666160     4/28/2016        3403          2.60          2.60
## 615 6117666160     4/29/2016        9592          7.24          7.24
## 616 6117666160     4/30/2016        6987          5.28          5.28
## 617 6117666160      5/1/2016        8915          6.73          6.73
## 618 6117666160      5/2/2016        4933          3.73          3.73
## 619 6117666160      5/3/2016           0          0.00          0.00
## 620 6117666160      5/4/2016        2997          2.26          2.26
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## 621 6117666160      5/5/2016        9799          7.40             7.40
## 622 6117666160      5/6/2016        3365          2.68             2.68
## 623 6117666160      5/7/2016        7336          5.54             5.54
## 624 6117666160      5/8/2016        7328          5.53             5.53
## 625 6117666160      5/9/2016        4477          3.38             3.38
## 626 6290855005     4/12/2016        4562          3.45             3.45
## 627 6290855005     4/13/2016        7142          5.40             5.40
## 628 6290855005     4/14/2016        7671          5.80             5.80
## 629 6290855005     4/15/2016        9501          7.18             7.18
## 630 6290855005     4/16/2016        8301          6.28             6.28
## 631 6290855005     4/17/2016        7851          5.94             5.94
## 632 6290855005     4/18/2016        6885          5.21             5.21
## 633 6290855005     4/19/2016        7142          5.40             5.40
## 634 6290855005     4/20/2016        6361          4.81             4.81
## 635 6290855005     4/21/2016           0          0.00             0.00
## 636 6290855005     4/22/2016        6238          4.72             4.72
## 637 6290855005     4/23/2016           0          0.00             0.00
## 638 6290855005     4/24/2016        5896          4.46             4.46
## 639 6290855005     4/25/2016        7802          5.90             5.90
## 640 6290855005     4/26/2016           0          0.00             0.00
## 641 6290855005     4/27/2016        5565          4.21             4.21
## 642 6290855005     4/28/2016        5731          4.33             4.33
## 643 6290855005     4/29/2016           0          0.00             0.00
## 644 6290855005     4/30/2016        6744          5.10             5.10
## 645 6290855005      5/1/2016        9837          7.44             7.44
## 646 6290855005      5/2/2016        6781          5.13             5.13
## 647 6290855005      5/3/2016        6047          4.57             4.57
## 648 6290855005      5/4/2016        5832          4.41             4.41
## 649 6290855005      5/5/2016        6339          4.79             4.79
## 650 6290855005      5/6/2016        6116          4.62             4.62
## 651 6290855005      5/7/2016        5510          4.17             4.17
## 652 6290855005      5/8/2016        7706          5.83             5.83
## 653 6290855005      5/9/2016        6277          4.75             4.75
## 654 6290855005     5/10/2016           0          0.00             0.00
## 655 6775888955     4/12/2016           0          0.00             0.00
## 656 6775888955     4/13/2016        4053          2.91             2.91
## 657 6775888955     4/14/2016        5162          3.70             3.70
## 658 6775888955     4/15/2016        1282          0.92             0.92
## 659 6775888955     4/16/2016        4732          3.39             3.39
## 660 6775888955     4/17/2016        2497          1.79             1.79
## 661 6775888955     4/18/2016        8294          5.95             5.95
## 662 6775888955     4/19/2016           0          0.00             0.00
## 663 6775888955     4/20/2016       10771          7.72             7.72
## 664 6775888955     4/21/2016           0          0.00             0.00
## 665 6775888955     4/22/2016         637          0.46             0.46
## 666 6775888955     4/23/2016           0          0.00             0.00
## 667 6775888955     4/24/2016        2153          1.54             1.54
## 668 6775888955     4/25/2016        6474          4.64             4.64
## 669 6775888955     4/26/2016        7091          5.27             5.27
## 670 6775888955     4/27/2016           0          0.00             0.00
## 671 6775888955     4/28/2016         703          0.50             0.50
## 672 6775888955     4/29/2016           0          0.00             0.00
## 673 6775888955     4/30/2016        2503          1.79             1.79
## 674 6775888955      5/1/2016        2487          1.78             1.78
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## 675 6775888955      5/2/2016          0          0.00          0.00
## 676 6775888955      5/3/2016          9          0.01          0.01
## 677 6775888955      5/4/2016          0          0.00          0.00
## 678 6775888955      5/5/2016          0          0.00          0.00
## 679 6775888955      5/6/2016       4697          3.37          3.37
## 680 6775888955      5/7/2016       1967          1.41          1.41
## 681 6962181067     4/12/2016      10199          6.74          6.74
## 682 6962181067     4/13/2016       5652          3.74          3.74
## 683 6962181067     4/14/2016       1551          1.03          1.03
## 684 6962181067     4/15/2016       5563          3.68          3.68
## 685 6962181067     4/16/2016      13217          8.74          8.74
## 686 6962181067     4/17/2016      10145          6.71          6.71
## 687 6962181067     4/18/2016      11404          7.54          7.54
## 688 6962181067     4/19/2016      10742          7.10          7.10
## 689 6962181067     4/20/2016      13928          9.55          9.55
## 690 6962181067     4/21/2016      11835          9.71          7.88
## 691 6962181067     4/22/2016      10725          7.09          7.09
## 692 6962181067     4/23/2016      20031         13.24         13.24
## 693 6962181067     4/24/2016       5029          3.32          3.32
## 694 6962181067     4/25/2016      13239          9.27          9.08
## 695 6962181067     4/26/2016      10433          6.90          6.90
## 696 6962181067     4/27/2016      10320          6.82          6.82
## 697 6962181067     4/28/2016      12627          8.35          8.35
## 698 6962181067     4/29/2016      10762          7.11          7.11
## 699 6962181067     4/30/2016      10081          6.66          6.66
## 700 6962181067      5/1/2016       5454          3.61          3.61
## 701 6962181067      5/2/2016      12912          8.54          8.54
## 702 6962181067      5/3/2016      12109          8.12          8.12
## 703 6962181067      5/4/2016      10147          6.71          6.71
## 704 6962181067      5/5/2016      10524          6.96          6.96
## 705 6962181067      5/6/2016       5908          3.91          3.91
## 706 6962181067      5/7/2016       6815          4.50          4.50
## 707 6962181067      5/8/2016       4188          2.77          2.77
## 708 6962181067      5/9/2016      12342          8.72          8.68
## 709 6962181067     5/10/2016      15448         10.21         10.21
## 710 6962181067     5/11/2016       6722          4.44          4.44
## 711 6962181067     5/12/2016       3587          2.37          2.37
## 712 7007744171     4/12/2016      14172         10.29          9.48
## 713 7007744171     4/13/2016      12862          9.65          8.60
## 714 7007744171     4/14/2016      11179          8.24          7.48
## 715 7007744171     4/15/2016       5273          3.53          3.53
## 716 7007744171     4/16/2016       4631          3.10          3.10
## 717 7007744171     4/17/2016       8059          5.39          5.39
## 718 7007744171     4/18/2016      14816         10.98          9.91
## 719 7007744171     4/19/2016      14194         10.48          9.50
## 720 7007744171     4/20/2016      15566         11.31         10.41
## 721 7007744171     4/21/2016      13744          9.19          9.19
## 722 7007744171     4/22/2016      15299         10.24         10.24
## 723 7007744171     4/23/2016       8093          5.41          5.41
## 724 7007744171     4/24/2016      11085          7.42          7.42
## 725 7007744171     4/25/2016      18229         13.34         12.20
## 726 7007744171     4/26/2016      15090         10.10         10.10
## 727 7007744171     4/27/2016      13541         10.22          9.06
## 728 7007744171     4/28/2016      15128         10.12         10.12
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## 729 7007744171     4/29/2016       20067          14.30          13.42
## 730 7007744171     4/30/2016        3761           2.52           2.52
## 731 7007744171      5/1/2016        5600           3.75           3.75
## 732 7007744171      5/2/2016       13041           9.18           8.72
## 733 7007744171      5/3/2016       14510          10.87           9.71
## 734 7007744171      5/4/2016           0           0.00           0.00
## 735 7007744171      5/5/2016       15010          11.10          10.04
## 736 7007744171      5/6/2016       11459           7.67           7.67
## 737 7007744171      5/7/2016           0           0.00           0.00
## 738 7086361926     4/12/2016       11317           8.41           8.41
## 739 7086361926     4/13/2016        5813           3.62           3.62
## 740 7086361926     4/14/2016        9123           6.12           6.12
## 741 7086361926     4/15/2016        8585           5.67           5.67
## 742 7086361926     4/16/2016          31           0.01           0.01
## 743 7086361926     4/17/2016           0           0.00           0.00
## 744 7086361926     4/18/2016        9827           6.71           6.71
## 745 7086361926     4/19/2016       10688           7.29           7.29
## 746 7086361926     4/20/2016       14365          10.64          10.64
## 747 7086361926     4/21/2016        9469           6.18           6.18
## 748 7086361926     4/22/2016        9753           6.53           6.53
## 749 7086361926     4/23/2016        2817           1.81           1.81
## 750 7086361926     4/24/2016        3520           2.16           2.16
## 751 7086361926     4/25/2016       10091           6.82           6.82
## 752 7086361926     4/26/2016       10387           7.07           7.07
## 753 7086361926     4/27/2016       11107           8.34           8.34
## 754 7086361926     4/28/2016       11584           7.80           7.80
## 755 7086361926     4/29/2016        7881           4.95           4.95
## 756 7086361926     4/30/2016       14560           9.41           9.41
## 757 7086361926      5/1/2016       12390           8.07           8.07
## 758 7086361926      5/2/2016       10052           6.81           6.81
## 759 7086361926      5/3/2016       10288           6.76           6.76
## 760 7086361926      5/4/2016       10988           8.31           8.31
## 761 7086361926      5/5/2016        8564           5.60           5.60
## 762 7086361926      5/6/2016       12461           8.38           8.38
## 763 7086361926      5/7/2016       12827           8.48           8.48
## 764 7086361926      5/8/2016       10677           7.10           7.10
## 765 7086361926      5/9/2016       13566           9.11           9.11
## 766 7086361926     5/10/2016       14433          10.79          10.79
## 767 7086361926     5/11/2016        9572           6.52           6.52
## 768 7086361926     5/12/2016        3789           2.56           2.56
## 769 8053475328     4/12/2016       18060          14.12          14.12
## 770 8053475328     4/13/2016       16433          13.35          13.35
## 771 8053475328     4/14/2016       20159          15.97          15.97
## 772 8053475328     4/15/2016       20669          16.24          16.24
## 773 8053475328     4/16/2016       14549          11.11          11.11
## 774 8053475328     4/17/2016       18827          13.69          13.69
## 775 8053475328     4/18/2016       17076          12.66          12.66
## 776 8053475328     4/19/2016       15929          12.48          12.48
## 777 8053475328     4/20/2016       15108          12.19          12.19
## 778 8053475328     4/21/2016       16057          12.51          12.51
## 779 8053475328     4/22/2016       10520           8.29           8.29
## 780 8053475328     4/23/2016       22359          17.19          17.19
## 781 8053475328     4/24/2016       22988          17.95          17.95
## 782 8053475328     4/25/2016       20500          15.69          15.69
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## 783 8053475328     4/26/2016       12685          9.62          9.62
## 784 8053475328     4/27/2016       12422          9.82          9.82
## 785 8053475328     4/28/2016       15447         12.40         12.40
## 786 8053475328     4/29/2016       12315          9.65          9.65
## 787 8053475328     4/30/2016        7135          5.59          5.59
## 788 8053475328      5/1/2016        1170          0.85          0.85
## 789 8053475328      5/2/2016        1969          1.43          1.43
## 790 8053475328      5/3/2016       15484         11.90         11.90
## 791 8053475328      5/4/2016       14581         11.15         11.15
## 792 8053475328      5/5/2016       14990         11.51         11.51
## 793 8053475328      5/6/2016       13953         11.00         11.00
## 794 8053475328      5/7/2016       19769         15.67         15.67
## 795 8053475328      5/8/2016       22026         17.65         17.65
## 796 8053475328      5/9/2016       12465          9.38          9.38
## 797 8053475328     5/10/2016       14810         11.36         11.36
## 798 8053475328     5/11/2016       12209          9.40          9.40
## 799 8053475328     5/12/2016        4998          3.91          3.91
## 800 8253242879     4/12/2016        9033          7.16          7.16
## 801 8253242879     4/13/2016        8053          6.10          6.10
## 802 8253242879     4/14/2016        5234          3.46          3.46
## 803 8253242879     4/15/2016        2672          1.77          1.77
## 804 8253242879     4/16/2016        9256          6.14          6.14
## 805 8253242879     4/17/2016       10204          7.91          7.91
## 806 8253242879     4/18/2016        5151          3.48          3.48
## 807 8253242879     4/19/2016        4212          2.78          2.78
## 808 8253242879     4/20/2016        6466          4.27          4.27
## 809 8253242879     4/21/2016       11268          8.56          8.56
## 810 8253242879     4/22/2016        2824          1.87          1.87
## 811 8253242879     4/23/2016        9282          6.26          6.26
## 812 8253242879     4/24/2016        8905          7.13          7.13
## 813 8253242879     4/25/2016        6829          4.51          4.51
## 814 8253242879     4/26/2016        4562          3.04          3.04
## 815 8253242879     4/27/2016       10232          8.18          8.18
## 816 8253242879     4/28/2016        2718          1.80          1.80
## 817 8253242879     4/29/2016        6260          4.26          4.26
## 818 8253242879     4/30/2016           0          0.00          0.00
## 819 8378563200     4/12/2016        7626          6.05          6.05
## 820 8378563200     4/13/2016       12386          9.82          9.82
## 821 8378563200     4/14/2016       13318         10.56         10.56
## 822 8378563200     4/15/2016       14461         11.47         11.47
## 823 8378563200     4/16/2016       11207          8.89          8.89
## 824 8378563200     4/17/2016        2132          1.69          1.69
## 825 8378563200     4/18/2016       13630         10.81         10.81
## 826 8378563200     4/19/2016       13070         10.36         10.36
## 827 8378563200     4/20/2016        9388          7.44          7.44
## 828 8378563200     4/21/2016       15148         12.01         12.01
## 829 8378563200     4/22/2016       12200          9.67          9.67
## 830 8378563200     4/23/2016        5709          4.53          4.53
## 831 8378563200     4/24/2016        3703          2.94          2.94
## 832 8378563200     4/25/2016       12405          9.84          9.84
## 833 8378563200     4/26/2016       16208         12.85         12.85
## 834 8378563200     4/27/2016        7359          5.84          5.84
## 835 8378563200     4/28/2016        5417          4.30          4.30
## 836 8378563200     4/29/2016        6175          4.90          4.90
```

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## 837 8378563200     4/30/2016        2946          2.34          2.34
## 838 8378563200      5/1/2016       11419          9.06          9.06
## 839 8378563200      5/2/2016        6064          4.81          4.81
## 840 8378563200      5/3/2016        8712          6.91          6.91
## 841 8378563200      5/4/2016        7875          6.24          6.24
## 842 8378563200      5/5/2016        8567          6.79          6.79
## 843 8378563200      5/6/2016        7045          5.59          5.59
## 844 8378563200      5/7/2016        4468          3.54          3.54
## 845 8378563200      5/8/2016        2943          2.33          2.33
## 846 8378563200      5/9/2016        8382          6.65          6.65
## 847 8378563200     5/10/2016        6582          5.22          5.22
## 848 8378563200     5/11/2016        9143          7.25          7.25
## 849 8378563200     5/12/2016        4561          3.62          3.62
## 850 8583815059     4/12/2016        5014          3.91          3.91
## 851 8583815059     4/13/2016        5571          4.35          4.35
## 852 8583815059     4/14/2016        3135          2.45          2.45
## 853 8583815059     4/15/2016        3430          2.68          2.68
## 854 8583815059     4/16/2016        5319          4.15          4.15
## 855 8583815059     4/17/2016        3008          2.35          2.35
## 856 8583815059     4/18/2016        3864          3.01          3.01
## 857 8583815059     4/19/2016        5697          4.44          4.44
## 858 8583815059     4/20/2016        5273          4.11          4.11
## 859 8583815059     4/21/2016        8538          6.66          6.66
## 860 8583815059     4/22/2016        8687          6.78          6.78
## 861 8583815059     4/23/2016        9423          7.35          7.35
## 862 8583815059     4/24/2016        8286          6.46          6.46
## 863 8583815059     4/25/2016        4503          3.51          3.51
## 864 8583815059     4/26/2016       10499          8.19          8.19
## 865 8583815059     4/27/2016       12474          9.73          9.73
## 866 8583815059     4/28/2016        6174          4.82          4.82
## 867 8583815059     4/29/2016       15168         11.83         11.83
## 868 8583815059     4/30/2016       10085          7.87          7.87
## 869 8583815059      5/1/2016        4512          3.52          3.52
## 870 8583815059      5/2/2016        8469          6.61          6.61
## 871 8583815059      5/3/2016       12015          9.37          9.37
## 872 8583815059      5/4/2016        3588          2.80          2.80
## 873 8583815059      5/5/2016       12427          9.69          9.69
## 874 8583815059      5/6/2016        5843          4.56          4.56
## 875 8583815059      5/7/2016        6117          4.77          4.77
## 876 8583815059      5/8/2016        9217          7.19          7.19
## 877 8583815059      5/9/2016        9877          7.70          7.70
## 878 8583815059     5/10/2016        8240          6.43          6.43
## 879 8583815059     5/11/2016        8701          6.79          6.79
## 880 8583815059     5/12/2016           0          0.00          0.00
## 881 8792009665     4/12/2016        2564          1.64          1.64
## 882 8792009665     4/13/2016        1320          0.84          0.84
## 883 8792009665     4/14/2016        1219          0.78          0.78
## 884 8792009665     4/15/2016        2483          1.59          1.59
## 885 8792009665     4/16/2016         244          0.16          0.16
## 886 8792009665     4/17/2016           0          0.00          0.00
## 887 8792009665     4/18/2016           0          0.00          0.00
## 888 8792009665     4/19/2016           0          0.00          0.00
## 889 8792009665     4/20/2016        3147          2.01          2.01
## 890 8792009665     4/21/2016         144          0.09          0.09
```

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## 891 8792009665     4/22/2016        4068           2.60             2.60
## 892 8792009665     4/23/2016        5245           3.36             3.36
## 893 8792009665     4/24/2016         400           0.26             0.26
## 894 8792009665     4/25/2016           0           0.00             0.00
## 895 8792009665     4/26/2016        1321           0.85             0.85
## 896 8792009665     4/27/2016        1758           1.13             1.13
## 897 8792009665     4/28/2016        6157           3.94             3.94
## 898 8792009665     4/29/2016        8360           5.35             5.35
## 899 8792009665     4/30/2016        7174           4.59             4.59
## 900 8792009665      5/1/2016        1619           1.04             1.04
## 901 8792009665      5/2/2016        1831           1.17             1.17
## 902 8792009665      5/3/2016        2421           1.55             1.55
## 903 8792009665      5/4/2016        2283           1.46             1.46
## 904 8792009665      5/5/2016           0           0.00             0.00
## 905 8792009665      5/6/2016           0           0.00             0.00
## 906 8792009665      5/7/2016           0           0.00             0.00
## 907 8792009665      5/8/2016           0           0.00             0.00
## 908 8792009665      5/9/2016           0           0.00             0.00
## 909 8792009665     5/10/2016           0           0.00             0.00
## 910 8877689391     4/12/2016       23186          20.40            20.40
## 911 8877689391     4/13/2016       15337           9.58             9.58
## 912 8877689391     4/14/2016       21129          18.98            18.98
## 913 8877689391     4/15/2016       13422           7.17             7.17
## 914 8877689391     4/16/2016       29326          25.29            25.29
## 915 8877689391     4/17/2016       15118           8.87             8.87
## 916 8877689391     4/18/2016       11423           8.67             8.67
## 917 8877689391     4/19/2016       18785          17.40            17.40
## 918 8877689391     4/20/2016       19948          18.11            18.11
## 919 8877689391     4/21/2016       19377          17.62            17.62
## 920 8877689391     4/22/2016       18258          16.31            16.31
## 921 8877689391     4/23/2016       11200           7.43             7.43
## 922 8877689391     4/24/2016       16674          15.74            15.74
## 923 8877689391     4/25/2016       12986           8.74             8.74
## 924 8877689391     4/26/2016       11101           8.43             8.43
## 925 8877689391     4/27/2016       23629          20.65            20.65
## 926 8877689391     4/28/2016       14890          11.30            11.30
## 927 8877689391     4/29/2016        9733           7.39             7.39
## 928 8877689391     4/30/2016       27745          26.72            26.72
## 929 8877689391      5/1/2016       10930           8.32             8.32
## 930 8877689391      5/2/2016        4790           3.64             3.64
## 931 8877689391      5/3/2016       10818           8.21             8.21
## 932 8877689391      5/4/2016       18193          16.30            16.30
## 933 8877689391      5/5/2016       14055          10.67            10.67
## 934 8877689391      5/6/2016       21727          19.34            19.34
## 935 8877689391      5/7/2016       12332           8.13             8.13
## 936 8877689391      5/8/2016       10686           8.11             8.11
## 937 8877689391      5/9/2016       20226          18.25            18.25
## 938 8877689391     5/10/2016       10733           8.15             8.15
## 939 8877689391     5/11/2016       21420          19.56            19.56
## 940 8877689391     5/12/2016        8064           6.12             6.12
##     logged_activities_distance very_active_distance moderately_active_distance
## 1                     0.000000                 1.88                       0.55
## 2                     0.000000                 1.57                       0.69
## 3                     0.000000                 2.44                       0.40
```

```
## 4       0.000000        2.14    1.26
## 5       0.000000        2.71    0.41
## 6       0.000000        3.19    0.78
## 7       0.000000        3.25    0.64
## 8       0.000000        3.53    1.32
## 9       0.000000        1.96    0.48
## 10      0.000000        1.34    0.35
## 11      0.000000        4.76    1.12
## 12      0.000000        2.81    0.87
## 13      0.000000        2.92    0.21
## 14      0.000000        5.29    0.57
## 15      0.000000        2.33    0.92
## 16      0.000000        6.40    0.41
## 17      0.000000        3.54    1.16
## 18      0.000000        1.06    0.50
## 19      0.000000        3.56    1.42
## 20      0.000000        2.29    1.60
## 21      0.000000        3.21    0.57
## 22      0.000000        3.73    1.05
## 23      0.000000        2.46    0.87
## 24      0.000000        2.92    1.08
## 25      0.000000        1.97    0.25
## 26      0.000000        2.46    2.12
## 27      0.000000        3.53    0.32
## 28      0.000000        3.45    0.53
## 29      0.000000        3.35    1.16
## 30      0.000000        2.56    1.01
## 31      0.000000        0.00    0.00
## 32      0.000000        0.00    0.00
## 33      0.000000        0.00    0.00
## 34      0.000000        0.00    0.00
## 35      0.000000        0.00    0.00
## 36      0.000000        0.00    0.00
## 37      0.000000        1.03    1.52
## 38      0.000000        2.15    0.62
## 39      0.000000        0.00    0.00
## 40      0.000000        0.00    0.00
## 41      0.000000        0.00    0.00
## 42      0.000000        0.00    0.00
## 43      0.000000        0.00    0.00
## 44      0.000000        1.15    0.91
## 45      0.000000        0.00    0.00
## 46      0.000000        0.00    0.00
## 47      0.000000        1.11    1.87
## 48      0.000000        0.00    0.20
## 49      0.000000        0.00    0.00
## 50      0.000000        0.90    1.28
## 51      0.000000       21.92    4.19
## 52      0.000000        0.86    0.59
## 53      0.000000        0.00    0.00
## 54      0.000000        0.00    0.00
## 55      0.000000        0.00    0.00
## 56      0.000000        0.00    0.00
## 57      0.000000        0.00    0.00
```

```
## 58      0.000000        0.00            0.00
## 59      0.000000        0.00            0.00
## 60      0.000000        0.00            0.00
## 61      0.000000        0.00            0.00
## 62      0.000000        0.00            0.00
## 63      0.000000        0.14            2.30
## 64      0.000000        2.28            0.90
## 65      0.000000        0.36            2.56
## 66      0.000000        0.22            0.15
## 67      0.000000        4.10            1.88
## 68      0.000000        2.25            0.57
## 69      0.000000        1.07            1.67
## 70      0.000000        0.36            2.53
## 71      0.000000        0.00            0.00
## 72      0.000000        0.00            0.00
## 73      0.000000        0.00            0.00
## 74      0.000000        0.00            0.58
## 75      0.000000        0.00            0.00
## 76      0.000000        0.59            0.06
## 77      0.000000        0.80            1.72
## 78      0.000000        0.00            0.00
## 79      0.000000        0.20            2.32
## 80      0.000000        0.00            0.00
## 81      0.000000        0.63            3.14
## 82      0.000000        0.24            0.99
## 83      0.000000        0.07            0.31
## 84      0.000000        0.72            4.09
## 85      0.000000        0.00            0.00
## 86      0.000000        0.52            0.54
## 87      0.000000        0.82            0.27
## 88      0.000000        3.26            0.79
## 89      0.000000        0.00            0.00
## 90      0.000000        2.39            0.35
## 91      0.000000        0.88            0.81
## 92      0.000000        0.00            0.00
## 93      0.000000        0.00            0.00
## 94      0.000000        0.00            0.00
## 95      0.000000        0.00            0.00
## 96      0.000000        0.00            0.00
## 97      0.000000        0.00            0.00
## 98      0.000000        0.14            0.26
## 99      0.000000        0.00            0.48
## 100     0.000000        0.00            0.00
## 101     0.000000        0.00            0.00
## 102     0.000000        0.12            0.52
## 103     0.000000        0.00            0.00
## 104     0.000000        0.00            0.00
## 105     0.000000        0.00            0.00
## 106     0.000000        0.00            0.00
## 107     0.000000        0.00            0.00
## 108     0.000000        0.00            0.00
## 109     0.000000        0.00            0.00
## 110     0.000000        0.00            0.00
## 111     0.000000        0.00            0.00
```

```
## 112    0.000000    0.00    0.26
## 113    0.000000    0.00    0.00
## 114    0.000000    0.00    0.00
## 115    0.000000    0.00    0.00
## 116    0.000000    0.00    0.00
## 117    0.000000    0.00    0.00
## 118    0.000000    0.00    0.00
## 119    0.000000    0.00    0.00
## 120    0.000000    0.00    0.00
## 121    0.000000    0.00    0.00
## 122    0.000000    0.00    0.00
## 123    0.000000    0.00    0.00
## 124    0.000000    0.00    0.00
## 125    0.000000    0.00    0.00
## 126    0.000000    0.00    0.40
## 127    0.000000    0.00    0.00
## 128    0.000000    0.00    0.00
## 129    0.000000    0.00    0.00
## 130    0.000000    0.00    0.00
## 131    0.000000    0.00    0.00
## 132    0.000000    0.00    0.00
## 133    0.000000    0.00    0.00
## 134    0.000000    0.00    0.00
## 135    0.000000    0.00    0.00
## 136    0.000000    0.07    0.24
## 137    0.000000    0.00    0.00
## 138    0.000000    0.00    0.00
## 139    0.000000    0.00    0.00
## 140    0.000000    0.00    0.00
## 141    0.000000    0.00    0.00
## 142    0.000000    0.00    0.00
## 143    0.000000    1.01    0.03
## 144    0.000000    1.16    0.30
## 145    0.000000    0.73    0.00
## 146    0.000000    0.00    0.00
## 147    0.000000    0.00    0.00
## 148    0.000000    0.00    0.00
## 149    0.000000    0.00    0.00
## 150    0.000000    0.00    0.00
## 151    0.000000    0.00    0.00
## 152    0.000000    0.00    0.00
## 153    0.000000    0.00    0.00
## 154    0.000000    0.00    0.00
## 155    0.000000    3.31    0.77
## 156    0.000000    2.99    0.10
## 157    0.000000    2.48    0.21
## 158    0.000000    1.94    0.31
## 159    0.000000    3.15    0.55
## 160    0.000000    3.87    0.66
## 161    0.000000    3.64    0.12
## 162    0.000000    3.29    0.24
## 163    0.000000    3.34    1.93
## 164    0.000000    3.33    1.11
## 165    0.000000    4.43    0.42
```

```
## 166    0.000000    0.00    0.00
## 167    0.000000    4.55    1.15
## 168    0.000000    3.33    0.22
## 169    0.000000    1.43    0.66
## 170    0.000000    1.04    0.97
## 171    0.000000    0.41    1.33
## 172    0.000000    0.48    1.21
## 173    0.000000    0.94    1.40
## 174    0.000000    1.94    0.96
## 175    0.000000    2.61    0.34
## 176    0.000000    3.99    0.46
## 177    0.000000    2.51    0.93
## 178    0.000000    2.79    0.86
## 179    0.000000    1.87    0.67
## 180    0.000000    1.61    0.08
## 181    0.000000    0.00    0.00
## 182    0.000000    2.12    1.63
## 183    0.000000    2.22    1.21
## 184    0.000000    4.18    1.15
## 185    0.000000    1.28    0.67
## 186    0.000000    0.19    0.35
## 187    0.000000    0.00    0.00
## 188    0.000000    0.00    0.00
## 189    0.000000    0.00    0.00
## 190    0.000000    0.00    0.00
## 191    0.000000    0.00    0.00
## 192    0.000000    0.00    0.00
## 193    0.000000    0.00    0.00
## 194    0.000000    0.00    0.00
## 195    0.000000    0.00    0.00
## 196    0.000000    0.00    0.00
## 197    0.000000    0.00    0.00
## 198    0.000000    0.00    0.00
## 199    0.000000    0.00    0.00
## 200    0.000000    0.00    0.00
## 201    0.000000    0.00    0.00
## 202    0.000000    0.00    0.00
## 203    0.000000    0.00    0.00
## 204    0.000000    0.00    0.00
## 205    0.000000    0.00    0.00
## 206    0.000000    0.00    0.00
## 207    0.000000    0.00    0.00
## 208    0.000000    0.00    0.00
## 209    0.000000    0.00    0.00
## 210    0.000000    0.00    0.00
## 211    0.000000    0.00    0.00
## 212    0.000000    0.00    0.00
## 213    0.000000    0.00    0.00
## 214    0.000000    0.00    0.00
## 215    0.000000    0.00    0.00
## 216    0.000000    0.00    0.00
## 217    0.000000    1.17    0.31
## 218    0.000000    0.00    0.00
## 219    0.000000    0.00    0.00
```

```
## 220  0.000000  0.00  0.00
## 221  0.000000  0.00  0.00
## 222  0.000000  0.00  0.00
## 223  0.000000  0.00  0.26
## 224  0.000000  0.00  0.38
## 225  0.000000  0.00  0.49
## 226  0.000000  0.06  0.42
## 227  0.000000  0.00  0.00
## 228  0.000000  0.00  0.00
## 229  0.000000  0.00  0.00
## 230  0.000000  0.23  0.20
## 231  0.000000  0.00  0.00
## 232  0.000000  0.00  0.00
## 233  0.000000  0.00  0.00
## 234  0.000000  0.00  0.00
## 235  0.000000  0.00  0.00
## 236  0.000000  0.00  0.00
## 237  0.000000  0.36  0.21
## 238  0.000000  1.49  0.37
## 239  0.000000  0.00  0.00
## 240  0.000000  0.00  0.39
## 241  0.000000  0.00  0.00
## 242  0.000000  0.00  0.00
## 243  0.000000  0.00  0.00
## 244  0.000000  0.00  0.00
## 245  0.000000  0.00  0.00
## 246  0.000000  0.00  0.00
## 247  0.000000  0.00  0.00
## 248  0.000000  2.00  0.62
## 249  0.000000  1.66  1.94
## 250  0.000000  0.02  2.74
## 251  0.000000  0.07  1.42
## 252  0.000000  5.45  4.10
## 253  0.000000  0.08  0.28
## 254  0.000000  0.79  0.86
## 255  0.000000  0.00  0.00
## 256  0.000000  0.68  1.81
## 257  0.000000  1.85  1.53
## 258  0.000000  0.56  1.68
## 259  0.000000  2.78  1.45
## 260  0.000000  0.00  0.00
## 261  0.000000  1.27  0.52
## 262  0.000000  0.00  0.00
## 263  0.000000  1.86  0.40
## 264  0.000000  0.00  0.00
## 265  0.000000  0.00  0.00
## 266  0.000000  0.11  0.93
## 267  0.000000  0.00  0.22
## 268  0.000000  0.00  0.00
## 269  0.000000  0.00  0.00
## 270  0.000000  3.11  0.02
## 271  0.000000  0.00  0.35
## 272  0.000000  0.07  0.28
## 273  0.000000  0.00  0.00
```

```
## 274  0.000000  1.51  0.12
## 275  0.000000  0.13  0.37
## 276  0.000000  0.46  0.00
## 277  0.000000  2.09  0.23
## 278  0.000000  3.00  0.06
## 279  0.000000  0.00  0.00
## 280  0.000000  0.12  0.18
## 281  0.000000  0.00  0.00
## 282  0.000000  2.16  0.34
## 283  0.000000  1.36  1.41
## 284  0.000000  0.33  1.08
## 285  0.000000  0.49  1.04
## 286  0.000000  0.00  0.21
## 287  0.000000  0.06  0.25
## 288  0.000000  0.00  0.00
## 289  0.000000  0.78  0.80
## 290  0.000000  0.00  0.12
## 291  0.000000  2.28  0.55
## 292  0.000000  2.90  0.00
## 293  0.000000  0.00  0.00
## 294  0.000000  0.00  0.00
## 295  0.000000  0.00  0.00
## 296  0.000000  0.00  0.00
## 297  0.000000  0.00  0.00
## 298  0.000000  0.99  0.34
## 299  0.000000  0.34  1.03
## 300  0.000000  0.00  0.00
## 301  0.000000  0.00  0.00
## 302  0.000000  1.41  0.10
## 303  0.000000  1.08  0.20
## 304  0.000000  0.00  0.00
## 305  0.000000  0.84  0.09
## 306  0.000000  1.15  0.26
## 307  0.000000  0.00  0.00
## 308  0.000000  1.40  0.08
## 309  0.000000  0.89  0.19
## 310  0.000000  0.00  0.00
## 311  0.000000  1.85  0.05
## 312  0.000000  1.58  0.63
## 313  0.000000  0.00  0.00
## 314  0.000000  0.00  0.00
## 315  0.000000  1.06  0.09
## 316  0.000000  0.00  0.00
## 317  0.000000  3.06  0.91
## 318  0.000000  2.03  2.13
## 319  0.000000  0.32  0.97
## 320  0.000000  1.05  1.75
## 321  0.000000  2.03  4.00
## 322  0.000000  0.70  2.35
## 323  0.000000  0.25  3.73
## 324  0.000000  2.24  2.45
## 325  0.000000  0.20  4.35
## 326  0.000000  0.00  0.00
## 327  0.000000  2.33  0.58
```

```
## 328  0.000000  0.00  4.22
## 329  0.000000  3.27  4.56
## 330  0.000000  5.62  0.43
## 331  0.000000  0.45  4.22
## 332  0.000000  0.00  0.42
## 333  0.000000  1.37  0.29
## 334  0.000000  3.74  1.30
## 335  0.000000  3.69  2.10
## 336  0.000000  2.67  1.98
## 337  0.000000  1.54  6.48
## 338  0.000000  3.32  1.74
## 339  0.000000  1.81  4.58
## 340  0.000000  1.76  4.11
## 341  0.000000  3.11  2.51
## 342  0.000000  0.00  4.13
## 343  0.000000  0.68  5.24
## 344  0.000000  0.77  5.60
## 345  0.000000  0.07  5.40
## 346  0.000000  0.37  0.00
## 347  0.000000  0.15  0.24
## 348  0.000000  0.00  0.00
## 349  0.000000  0.00  0.00
## 350  0.000000  0.21  0.36
## 351  0.000000  0.45  0.37
## 352  0.000000  0.00  0.00
## 353  0.000000  0.00  0.00
## 354  0.000000  0.00  0.00
## 355  0.000000  0.00  0.00
## 356  0.000000  0.00  0.00
## 357  0.000000  0.00  0.00
## 358  0.000000  0.00  0.00
## 359  0.000000  0.00  0.00
## 360  0.000000  0.00  0.00
## 361  0.000000  0.00  0.00
## 362  0.000000  0.00  0.00
## 363  0.000000  0.00  0.00
## 364  0.000000  0.00  0.00
## 365  0.000000  0.00  0.00
## 366  0.000000  0.00  0.00
## 367  0.000000  0.00  0.04
## 368  0.000000  0.00  0.00
## 369  0.000000  0.67  1.04
## 370  0.000000  2.62  1.68
## 371  0.000000  0.00  0.00
## 372  0.000000  0.00  0.00
## 373  0.000000  0.00  0.00
## 374  0.000000  0.20  0.12
## 375  0.000000  0.00  0.00
## 376  0.000000  0.11  0.17
## 377  0.000000  0.00  0.00
## 378  0.000000  0.00  0.00
## 379  0.000000  0.00  0.00
## 380  0.000000  0.00  0.00
## 381  0.000000  0.21  0.26
```

```
## 382  0.000000  0.00  0.00
## 383  0.000000  0.53  0.59
## 384  0.000000  0.11  0.33
## 385  0.000000  0.00  0.00
## 386  0.000000  0.00  0.00
## 387  0.000000  0.00  0.00
## 388  0.000000  0.07  0.33
## 389  0.000000  0.00  0.00
## 390  0.000000  0.00  0.68
## 391  0.000000  0.00  0.00
## 392  0.000000  0.06  0.81
## 393  0.000000  0.00  0.00
## 394  0.000000  0.06  0.20
## 395  0.000000  0.00  0.28
## 396  0.000000  0.57  0.92
## 397  0.000000  0.41  1.92
## 398  0.000000  1.01  0.33
## 399  0.000000  0.45  0.79
## 400  0.000000  0.40  1.61
## 401  0.000000  0.00  0.00
## 402  0.000000  0.00  0.44
## 403  0.000000  0.58  1.07
## 404  0.000000  0.59  0.58
## 405  0.000000  2.63  1.41
## 406  0.000000  0.41  0.47
## 407  0.000000  0.19  1.05
## 408  0.000000  0.00  0.00
## 409  0.000000  0.14  0.56
## 410  0.000000  0.21  0.46
## 411  0.000000  0.20  0.74
## 412  0.000000  0.00  0.00
## 413  0.000000  0.00  0.00
## 414  0.000000  0.06  0.63
## 415  0.000000  0.13  1.07
## 416  0.000000  0.00  0.00
## 417  0.000000  0.21  0.40
## 418  0.000000  0.00  0.00
## 419  0.000000  3.56  0.40
## 420  0.000000  1.37  0.69
## 421  0.000000  1.10  1.72
## 422  0.000000  0.37  0.39
## 423  0.000000  3.30  1.11
## 424  0.000000  4.50  0.32
## 425  0.000000  1.08  0.51
## 426  0.000000  0.73  1.40
## 427  0.000000  0.94  1.06
## 428  0.000000  0.70  2.51
## 429  0.000000  1.29  0.43
## 430  0.000000  0.80  0.89
## 431  0.000000  0.70  2.00
## 432  0.000000  1.01  0.68
## 433  0.000000  3.77  0.08
## 434  0.000000  1.13  0.78
## 435  0.000000  2.79  0.93
```

```
## 436    0.000000    0.63    1.67
## 437    0.000000    2.11    2.09
## 438    0.000000    9.45    2.77
## 439    0.000000    9.89    1.26
## 440    0.000000    0.34    0.73
## 441    0.000000    0.81    0.65
## 442    0.000000    0.53    0.79
## 443    0.000000    0.00    0.00
## 444    0.000000    0.00    0.00
## 445    0.000000    0.00    0.00
## 446    0.000000    0.00    0.00
## 447    0.000000    0.00    0.00
## 448    0.000000    0.00    0.00
## 449    0.000000    0.00    0.00
## 450    0.000000    2.00    0.29
## 451    0.000000    0.00    0.00
## 452    0.000000    0.00    0.00
## 453    0.000000    0.00    0.00
## 454    0.000000    0.00    0.00
## 455    0.000000    0.00    0.00
## 456    0.000000    0.00    0.00
## 457    0.000000    0.00    0.00
## 458    0.000000    2.41    0.04
## 459    0.000000    2.62    0.03
## 460    0.000000    0.00    0.00
## 461    0.000000    0.00    0.00
## 462    0.000000    0.00    0.00
## 463    0.000000    0.00    0.00
## 464    0.000000    2.21    0.19
## 465    0.000000    2.48    0.11
## 466    0.000000    0.00    0.00
## 467    0.000000    0.12    0.24
## 468    0.000000    0.00    0.00
## 469    0.000000    2.13    0.19
## 470    0.000000    0.00    0.25
## 471    0.000000    0.00    0.00
## 472    0.000000    0.00    0.00
## 473    0.000000    2.25    1.00
## 474    0.000000    0.00    0.00
## 475    0.000000    0.00    0.00
## 476    0.000000    1.24    0.44
## 477    0.000000    0.00    0.00
## 478    0.000000    0.59    0.84
## 479    0.000000    0.55    0.75
## 480    0.000000    0.55    1.14
## 481    0.000000    0.98    0.93
## 482    0.000000    0.05    0.36
## 483    0.000000    0.00    0.00
## 484    0.000000    0.42    0.97
## 485    0.000000    1.37    1.50
## 486    0.000000    0.34    0.20
## 487    0.000000    0.00    0.00
## 488    0.000000    0.59    0.25
## 489    0.000000    0.43    2.03
```

```
## 490  0.000000  1.96  0.89
## 491  0.000000  0.02  0.27
## 492  0.000000  1.02  1.85
## 493  0.000000  0.47  1.89
## 494  0.000000  0.00  0.00
## 495  0.000000  0.00  0.00
## 496  0.000000  0.60  0.28
## 497  0.000000  0.00  0.00
## 498  0.000000  1.01  0.50
## 499  0.000000  0.00  0.00
## 500  0.000000  1.61  1.00
## 501  0.000000  1.80  0.50
## 502  0.000000  0.43  1.62
## 503  0.000000  0.74  1.12
## 504  0.000000  0.26  1.82
## 505  0.000000  0.00  0.00
## 506  0.000000  0.00  0.00
## 507  0.000000  0.00  0.00
## 508  0.000000  0.00  0.00
## 509  0.000000  0.07  0.42
## 510  0.000000  0.24  1.25
## 511  0.000000  0.96  3.46
## 512  0.000000  1.82  1.49
## 513  0.000000  0.88  0.37
## 514  0.000000  0.16  1.23
## 515  0.000000  0.31  2.05
## 516  0.000000  0.00  0.00
## 517  0.000000  0.76  3.24
## 518  0.000000  1.20  5.12
## 519  0.000000  0.49  0.82
## 520  0.000000  0.07  0.35
## 521  0.000000  0.09  0.80
## 522  0.000000  1.13  0.42
## 523  0.000000  1.06  0.92
## 524  0.000000  0.32  2.03
## 525  0.000000  0.00  0.00
## 526  0.000000  0.38  1.74
## 527  0.000000  0.00  0.00
## 528  0.000000  0.34  0.73
## 529  0.000000  0.67  0.22
## 530  0.000000  0.08  0.66
## 531  0.000000  0.37  2.31
## 532  0.000000  0.68  6.21
## 533  0.000000  0.00  0.57
## 534  0.000000  0.08  1.88
## 535  0.000000  0.78  2.16
## 536  0.000000  0.00  0.00
## 537  0.000000  1.37  0.79
## 538  0.000000  0.00  0.00
## 539  0.000000  4.00  2.45
## 540  0.000000  4.16  1.98
## 541  0.000000  0.00  0.00
## 542  0.000000  0.00  0.00
## 543  0.000000  0.00  0.00
```

```
## 544  0.000000  4.28  1.66
## 545  0.000000  0.00  0.00
## 546  0.000000  2.95  2.16
## 547  0.000000  1.38  0.63
## 548  0.000000  0.00  0.00
## 549  0.000000  0.00  0.00
## 550  0.000000  2.93  0.57
## 551  0.000000  2.37  0.93
## 552  0.000000  1.14  1.00
## 553  0.000000  3.71  0.75
## 554  0.000000  2.79  0.64
## 555  0.000000  0.00  0.00
## 556  0.000000  0.00  0.00
## 557  0.000000  1.06  0.41
## 558  0.000000  1.50  1.20
## 559  0.000000  0.00  0.00
## 560  0.000000  3.43  1.66
## 561  0.000000  1.52  0.54
## 562  0.000000  0.00  0.00
## 563  0.000000  0.22  0.47
## 564  0.000000  2.13  0.89
## 565  0.000000  3.87  1.61
## 566  0.000000  0.00  0.00
## 567  0.000000  0.58  0.40
## 568  0.000000  3.60  0.38
## 569  0.000000  0.32  0.22
## 570  0.000000  3.33  0.31
## 571  0.000000  3.92  1.60
## 572  0.000000  6.64  1.28
## 573  0.000000  5.98  0.83
## 574  0.000000  4.86  0.72
## 575  0.000000  7.02  0.64
## 576  0.000000  4.12  0.34
## 577  0.000000  3.65  1.66
## 578  0.000000  2.42  0.79
## 579  0.000000  1.21  0.36
## 580  0.000000  7.65  2.15
## 581  0.000000  1.35  0.67
## 582  0.000000  0.85  0.65
## 583  0.000000  1.81  0.40
## 584  0.000000  3.25  1.17
## 585  0.000000  2.84  0.61
## 586  0.000000  5.83  0.79
## 587  0.000000  5.31  1.44
## 588  0.000000  1.12  0.35
## 589  0.000000  4.52  0.15
## 590  0.000000  1.56  0.25
## 591  0.000000  2.50  0.47
## 592  0.000000  1.93  0.32
## 593  0.000000  0.00  0.00
## 594  0.000000  0.00  0.00
## 595  0.000000  1.43  0.14
## 596  0.000000  2.56  0.75
## 597  0.000000  1.83  0.30
```

```
## 598  0.000000  0.00  0.00
## 599  0.000000  0.00  0.00
## 600  0.000000  0.00  0.00
## 601  0.000000  0.00  0.28
## 602  0.000000  0.58  0.85
## 603  0.000000  0.00  0.00
## 604  0.000000  0.00  0.00
## 605  0.000000  0.00  0.00
## 606  0.000000  2.03  0.48
## 607  0.000000  0.98  0.40
## 608  0.000000  0.00  0.00
## 609  0.000000  0.00  0.00
## 610  0.000000  0.00  0.00
## 611  0.000000  0.00  0.00
## 612  0.000000  0.00  0.34
## 613  0.000000  0.00  0.00
## 614  0.000000  0.00  0.00
## 615  0.000000  0.00  0.00
## 616  0.000000  0.00  0.00
## 617  0.000000  0.00  0.00
## 618  0.000000  0.00  0.00
## 619  0.000000  0.00  0.00
## 620  0.000000  0.00  0.00
## 621  0.000000  0.00  0.00
## 622  0.000000  0.00  0.00
## 623  0.000000  0.00  0.00
## 624  0.000000  0.00  0.00
## 625  0.000000  0.00  0.00
## 626  0.000000  0.00  0.00
## 627  0.000000  0.00  0.00
## 628  0.000000  0.00  0.00
## 629  0.000000  0.00  0.00
## 630  0.000000  0.00  0.00
## 631  0.000000  1.14  0.79
## 632  0.000000  0.00  0.00
## 633  0.000000  0.00  0.00
## 634  0.000000  0.00  0.00
## 635  0.000000  0.00  0.00
## 636  0.000000  0.00  0.00
## 637  0.000000  0.00  0.00
## 638  0.000000  0.00  0.00
## 639  0.000000  0.68  0.18
## 640  0.000000  0.00  0.00
## 641  0.000000  0.00  0.00
## 642  0.000000  0.00  0.00
## 643  0.000000  0.00  0.00
## 644  0.000000  0.00  0.00
## 645  0.000000  0.66  2.75
## 646  0.000000  0.00  0.00
## 647  0.000000  0.00  0.00
## 648  0.000000  0.00  0.00
## 649  0.000000  0.00  0.00
## 650  0.000000  0.00  0.00
## 651  0.000000  0.00  0.00
```

```
## 652  0.000000  0.00  0.00
## 653  0.000000  0.00  0.00
## 654  0.000000  0.00  0.00
## 655  0.000000  0.00  0.00
## 656  0.000000  1.11  0.58
## 657  0.000000  0.87  0.86
## 658  0.000000  0.00  0.00
## 659  0.000000  2.52  0.81
## 660  0.000000  0.35  1.13
## 661  0.000000  2.00  0.77
## 662  0.000000  0.00  0.00
## 663  0.000000  3.77  1.74
## 664  0.000000  0.00  0.00
## 665  0.000000  0.00  0.00
## 666  0.000000  0.00  0.00
## 667  0.000000  0.77  0.62
## 668  0.000000  2.27  0.46
## 669  1.959596  3.48  0.87
## 670  0.000000  0.00  0.00
## 671  0.000000  0.06  0.20
## 672  0.000000  0.00  0.00
## 673  0.000000  0.16  0.16
## 674  0.000000  0.48  0.62
## 675  0.000000  0.00  0.00
## 676  0.000000  0.00  0.00
## 677  0.000000  0.00  0.00
## 678  0.000000  0.00  0.00
## 679  0.000000  0.47  0.93
## 680  0.000000  0.13  0.24
## 681  0.000000  3.40  0.83
## 682  0.000000  0.57  1.21
## 683  0.000000  0.00  0.00
## 684  0.000000  0.00  0.00
## 685  0.000000  3.66  0.19
## 686  0.000000  0.33  0.68
## 687  0.000000  0.83  2.39
## 688  0.000000  2.10  2.13
## 689  0.000000  4.28  0.19
## 690  4.081692  3.99  2.10
## 691  0.000000  1.77  1.55
## 692  0.000000  4.20  2.00
## 693  0.000000  0.00  0.00
## 694  2.785175  3.02  1.68
## 695  0.000000  2.58  0.42
## 696  0.000000  0.55  2.02
## 697  0.000000  2.51  0.24
## 698  0.000000  0.82  0.48
## 699  0.000000  2.24  0.76
## 700  0.000000  0.00  0.00
## 701  0.000000  1.20  2.00
## 702  0.000000  1.74  2.04
## 703  0.000000  0.47  1.68
## 704  0.000000  0.99  1.16
## 705  0.000000  0.00  0.00
```

```
## 706  0.000000  0.00  0.00
## 707  0.000000  0.00  0.52
## 708  3.167822  3.90  1.18
## 709  0.000000  3.47  1.75
## 710  0.000000  1.49  0.31
## 711  0.000000  0.00  0.25
## 712  4.869783  4.50  0.38
## 713  4.851307  4.61  0.56
## 714  3.285415  2.95  0.34
## 715  0.000000  0.00  0.00
## 716  0.000000  0.00  0.00
## 717  0.000000  0.00  0.00
## 718  4.930550  3.79  2.12
## 719  4.942142  4.41  0.76
## 720  4.924841  4.79  0.67
## 721  0.000000  2.15  1.87
## 722  0.000000  4.10  1.76
## 723  0.000000  0.13  1.13
## 724  0.000000  0.00  0.00
## 725  4.861792  4.31  1.37
## 726  0.000000  0.93  0.94
## 727  4.885605  4.27  0.66
## 728  0.000000  1.09  0.77
## 729  4.911146  4.31  2.05
## 730  0.000000  0.00  0.00
## 731  0.000000  0.00  0.00
## 732  2.832326  4.64  0.70
## 733  4.912368  4.48  1.02
## 734  0.000000  0.00  0.00
## 735  4.878232  4.33  1.29
## 736  0.000000  3.00  0.81
## 737  0.000000  0.00  0.00
## 738  0.000000  5.27  0.15
## 739  0.000000  0.56  0.21
## 740  0.000000  2.03  0.33
## 741  0.000000  2.04  1.11
## 742  0.000000  0.00  0.00
## 743  0.000000  0.00  0.00
## 744  0.000000  3.17  1.22
## 745  0.000000  3.53  1.23
## 746  0.000000  7.64  0.45
## 747  0.000000  1.36  0.30
## 748  0.000000  2.87  0.97
## 749  0.000000  0.00  0.00
## 750  0.000000  0.00  0.00
## 751  0.000000  3.75  0.70
## 752  0.000000  4.16  0.77
## 753  0.000000  5.63  0.18
## 754  0.000000  2.79  1.64
## 755  0.000000  0.49  0.45
## 756  0.000000  3.12  1.04
## 757  0.000000  2.30  0.90
## 758  0.000000  3.48  0.66
## 759  0.000000  2.74  0.85
```

```
## 760  0.000000  5.28  0.12
## 761  0.000000  1.78  0.83
## 762  0.000000  3.82  1.43
## 763  0.000000  1.46  2.33
## 764  0.000000  2.31  1.53
## 765  0.000000  4.26  1.71
## 766  0.000000  7.11  1.20
## 767  0.000000  2.89  1.39
## 768  0.000000  0.38  0.27
## 769  0.000000 11.64  0.39
## 770  0.000000 10.43  0.47
## 771  0.000000 12.34  0.21
## 772  0.000000 13.26  0.39
## 773  0.000000  9.36  0.27
## 774  0.000000  9.24  0.80
## 775  0.000000  9.08  0.23
## 776  0.000000  9.22  0.31
## 777  0.000000  9.58  0.23
## 778  0.000000  9.67  0.25
## 779  0.000000  6.26  0.15
## 780  0.000000 12.54  0.63
## 781  0.000000 13.13  1.55
## 782  0.000000 11.37  0.46
## 783  0.000000  6.31  0.20
## 784  0.000000  6.46  0.43
## 785  0.000000  9.67  0.39
## 786  0.000000  6.17  0.31
## 787  0.000000  2.99  0.06
## 788  0.000000  0.00  0.00
## 789  0.000000  0.00  0.00
## 790  0.000000  8.39  0.93
## 791  0.000000  8.82  0.40
## 792  0.000000  8.85  0.45
## 793  0.000000  9.10  0.69
## 794  0.000000 12.44  0.88
## 795  0.000000 13.40  0.59
## 796  0.000000  6.12  0.57
## 797  0.000000  9.09  0.42
## 798  0.000000  6.08  0.28
## 799  0.000000  2.95  0.20
## 800  0.000000  5.43  0.14
## 801  0.000000  4.17  0.63
## 802  0.000000  1.93  0.99
## 803  0.000000  0.00  0.00
## 804  0.000000  0.43  3.27
## 805  0.000000  5.43  0.15
## 806  0.000000  1.04  0.63
## 807  0.000000  0.00  0.00
## 808  0.000000  0.33  0.82
## 809  0.000000  5.88  0.93
## 810  0.000000  0.00  0.00
## 811  0.000000  2.09  1.04
## 812  0.000000  5.60  0.19
## 813  0.000000  0.36  2.39
```

```
## 814  0.000000  1.18  0.49
## 815  0.000000  6.24  0.23
## 816  0.000000  0.67  0.78
## 817  0.000000  1.29  0.54
## 818  0.000000  0.00  0.00
## 819  2.253081  0.83  0.71
## 820  2.092147  4.96  0.65
## 821  2.253081  5.62  1.03
## 822  0.000000  4.91  1.15
## 823  0.000000  5.37  1.07
## 824  0.000000  0.00  0.00
## 825  2.092147  5.05  0.56
## 826  2.253081  5.30  0.88
## 827  2.092147  2.23  0.44
## 828  2.253081  6.90  0.82
## 829  2.092147  4.91  0.59
## 830  0.000000  1.52  0.52
## 831  0.000000  0.00  0.00
## 832  2.092147  5.05  0.87
## 833  0.000000  7.51  0.92
## 834  0.000000  0.33  0.18
## 835  0.000000  0.90  0.49
## 836  0.000000  0.25  0.36
## 837  0.000000  0.00  0.00
## 838  0.000000  6.03  0.56
## 839  2.092147  0.63  0.17
## 840  2.253081  1.34  1.06
## 841  0.000000  1.56  0.49
## 842  2.253081  0.89  0.16
## 843  2.092147  1.55  0.25
## 844  0.000000  0.00  0.00
## 845  0.000000  0.00  0.00
## 846  2.092147  1.27  0.66
## 847  2.253081  0.66  0.64
## 848  2.092147  1.39  0.59
## 849  0.000000  0.65  0.27
## 850  0.000000  0.00  0.33
## 851  0.000000  0.15  0.97
## 852  0.000000  0.00  0.00
## 853  0.000000  0.00  0.00
## 854  0.000000  0.00  0.00
## 855  0.000000  0.00  0.00
## 856  0.000000  0.31  1.06
## 857  0.000000  0.53  0.48
## 858  0.000000  0.00  1.04
## 859  0.000000  2.63  1.02
## 860  0.000000  0.29  2.41
## 861  0.000000  0.53  2.03
## 862  0.000000  0.15  2.05
## 863  0.000000  1.47  0.24
## 864  0.000000  0.07  4.22
## 865  0.000000  6.60  0.27
## 866  0.000000  0.00  1.20
## 867  0.000000  3.90  3.00
```

```
## 868    0.000000    0.15    1.28
## 869    0.000000    0.78    0.12
## 870    0.000000    0.00    0.00
## 871    0.000000    0.00    0.00
## 872    0.000000    0.00    0.00
## 873    0.000000    0.00    0.00
## 874    0.000000    0.14    1.19
## 875    0.000000    0.00    0.00
## 876    0.000000    0.22    3.31
## 877    0.000000    5.76    0.17
## 878    0.000000    0.69    2.01
## 879    0.000000    0.37    3.24
## 880    0.000000    0.00    0.00
## 881    0.000000    0.00    0.00
## 882    0.000000    0.00    0.00
## 883    0.000000    0.00    0.00
## 884    0.000000    0.00    0.00
## 885    0.000000    0.00    0.00
## 886    0.000000    0.00    0.00
## 887    0.000000    0.00    0.00
## 888    0.000000    0.00    0.00
## 889    0.000000    0.00    0.28
## 890    0.000000    0.00    0.00
## 891    0.000000    0.05    0.28
## 892    0.000000    0.16    0.44
## 893    0.000000    0.04    0.05
## 894    0.000000    0.00    0.00
## 895    0.000000    0.00    0.00
## 896    0.000000    0.00    0.00
## 897    0.000000    0.00    0.00
## 898    0.000000    0.14    0.28
## 899    0.000000    0.33    0.36
## 900    0.000000    0.00    0.00
## 901    0.000000    0.00    0.00
## 902    0.000000    0.00    0.00
## 903    0.000000    0.00    0.00
## 904    0.000000    0.00    0.00
## 905    0.000000    0.00    0.00
## 906    0.000000    0.00    0.00
## 907    0.000000    0.00    0.00
## 908    0.000000    0.00    0.00
## 909    0.000000    0.00    0.00
## 910    0.000000   12.22    0.34
## 911    0.000000    3.55    0.38
## 912    0.000000   10.55    0.59
## 913    0.000000    0.05    0.05
## 914    0.000000   13.24    1.21
## 915    0.000000    0.00    0.07
## 916    0.000000    2.44    0.27
## 917    0.000000   12.15    0.18
## 918    0.000000   11.02    0.69
## 919    0.000000   12.29    0.42
## 920    0.000000   10.23    0.03
## 921    0.000000    0.00    0.00
```

```
## 922                  0.000000               11.01                    0.01
## 923                  0.000000                2.37                    0.07
## 924                  0.000000                1.76                    0.13
## 925                  0.000000               13.07                    0.44
## 926                  0.000000                4.93                    0.38
## 927                  0.000000                1.38                    0.17
## 928                  0.000000               21.66                    0.08
## 929                  0.000000                3.13                    0.57
## 930                  0.000000                0.00                    0.00
## 931                  0.000000                1.39                    0.10
## 932                  0.000000               10.42                    0.31
## 933                  0.000000                5.46                    0.82
## 934                  0.000000               12.79                    0.29
## 935                  0.000000                0.08                    0.96
## 936                  0.000000                1.08                    0.20
## 937                  0.000000               11.10                    0.80
## 938                  0.000000                1.35                    0.46
## 939                  0.000000               13.22                    0.41
## 940                  0.000000                1.82                    0.04
##     light_active_distance sedentary_active_distance very_active_minutes
## 1                    6.06                     0.00                  25
## 2                    4.71                     0.00                  21
## 3                    3.91                     0.00                  30
## 4                    2.83                     0.00                  29
## 5                    5.04                     0.00                  36
## 6                    2.51                     0.00                  38
## 7                    4.71                     0.00                  42
## 8                    5.03                     0.00                  50
## 9                    4.24                     0.00                  28
## 10                   4.65                     0.00                  19
## 11                   2.24                     0.00                  66
## 12                   5.36                     0.00                  41
## 13                   3.28                     0.00                  39
## 14                   3.94                     0.00                  73
## 15                   5.54                     0.00                  31
## 16                   5.41                     0.00                  78
## 17                   3.79                     0.00                  48
## 18                   5.58                     0.00                  16
## 19                   4.27                     0.00                  52
## 20                   2.92                     0.00                  33
## 21                   5.92                     0.00                  41
## 22                   4.88                     0.00                  50
## 23                   3.82                     0.00                  36
## 24                   4.88                     0.00                  45
## 25                   5.81                     0.00                  24
## 26                   3.13                     0.00                  37
## 27                   2.73                     0.00                  44
## 28                   3.74                     0.00                  46
## 29                   3.26                     0.00                  46
## 30                   4.55                     0.00                  36
## 31                   0.00                     0.00                   0
## 32                   5.31                     0.00                   0
## 33                   4.55                     0.00                   0
## 34                   5.91                     0.01                   0
```

```
## 35                0.97                0.00                 0
## 36                3.49                0.00                 0
## 37                1.49                0.01                15
## 38                4.62                0.01                17
## 39                1.90                0.00                 0
## 40                3.23                0.00                 0
## 41                4.11                0.02                 0
## 42                2.60                0.00                 0
## 43                5.54                0.01                 0
## 44                1.89                0.00                16
## 45                4.20                0.02                 0
## 46                1.83                0.01                 0
## 47                2.46                0.00                17
## 48                1.60                0.00                 0
## 49                1.55                0.00                 0
## 50                2.12                0.01                11
## 51                1.91                0.02               186
## 52                3.47                0.00                 7
## 53                1.34                0.02                 0
## 54                1.42                0.00                 0
## 55                1.58                0.02                 0
## 56                1.12                0.01                 0
## 57                1.37                0.00                 0
## 58                2.22                0.00                 0
## 59                1.13                0.00                 0
## 60                1.92                0.01                 0
## 61                2.04                0.00                 0
## 62                1.92                0.01                 0
## 63                5.33                0.00                 2
## 64                2.64                0.00                30
## 65                5.10                0.00                 5
## 66                3.45                0.00                 3
## 67                5.09                0.00                51
## 68                3.55                0.00                29
## 69                2.45                0.00                15
## 70                5.30                0.00                 5
## 71                1.76                0.01                 0
## 72                0.88                0.01                 0
## 73                2.66                0.01                 0
## 74                4.25                0.00                 0
## 75                2.41                0.00                 0
## 76                1.95                0.00                 8
## 77                4.69                0.00                11
## 78                2.20                0.00                 0
## 79                4.31                0.00                 3
## 80                2.31                0.00                 0
## 81                9.46                0.00                 9
## 82                3.23                0.00                 3
## 83                2.35                0.00                 1
## 84                4.54                0.00                10
## 85                1.66                0.02                 0
## 86                2.13                0.01                 6
## 87                6.01                0.02                11
## 88                5.67                0.01                41
```

```
## 89                4.88                0.00                 0
## 90                2.09                0.01                32
## 91                4.97                0.01                12
## 92                0.95                0.01                 0
## 93                4.43                0.00                 0
## 94                3.26                0.00                 0
## 95                5.23                0.00                 0
## 96                2.54                0.00                 0
## 97                2.26                0.00                 0
## 98                2.59                0.00                 2
## 99                2.56                0.00                 0
## 100               0.13                0.00                 0
## 101               0.01                0.00                 0
## 102               4.68                0.00                 2
## 103               3.55                0.00                 0
## 104               2.36                0.00                 0
## 105               0.00                0.00                 0
## 106               0.00                0.00                 0
## 107               0.00                0.00                 0
## 108               0.00                0.00                 0
## 109               4.56                0.00                 0
## 110               3.25                0.00                 0
## 111               2.65                0.00                 0
## 112               1.45                0.00                 0
## 113               0.00                0.00                 0
## 114               2.68                0.00                 0
## 115               1.37                0.00                 0
## 116               1.48                0.00                 0
## 117               0.03                0.00                 0
## 118               0.00                0.00                 0
## 119               0.00                0.00                 0
## 120               0.00                0.00                 0
## 121               0.00                0.00                 0
## 122               0.00                0.00                 0
## 123               0.00                0.00                 0
## 124               0.47                0.00                 0
## 125               0.25                0.00                 0
## 126               1.10                0.00                 0
## 127               0.68                0.00                 0
## 128               0.00                0.00                 0
## 129               0.00                0.00                 0
## 130               0.17                0.00                 0
## 131               0.00                0.00                 0
## 132               0.00                0.00                 0
## 133               0.00                0.00                 0
## 134               0.10                0.00                 0
## 135               2.04                0.00                 0
## 136               1.14                0.00                 1
## 137               0.11                0.00                 0
## 138               2.60                0.00                 0
## 139               0.00                0.00                 0
## 140               1.16                0.00                 0
## 141               0.00                0.00                 0
## 142               0.00                0.00                 0
```

```
## 143          0.83          0.00          14
## 144          1.16          0.00          16
## 145          0.18          0.00          10
## 146          1.24          0.00           0
## 147          0.00          0.00           0
## 148          1.45          0.00           0
## 149          1.04          0.00           0
## 150          0.00          0.00           0
## 151          0.00          0.00           0
## 152          0.00          0.00           0
## 153          0.00          0.00           0
## 154          0.00          0.00           0
## 155          4.26          0.00          42
## 156          5.41          0.00          43
## 157          4.82          0.00          32
## 158          5.78          0.00          27
## 159          3.39          0.00          41
## 160          6.88          0.00          28
## 161          6.30          0.00          48
## 162          5.00          0.00          31
## 163          5.40          0.00          48
## 164          4.31          0.00         104
## 165          4.47          0.00          52
## 166          4.21          0.00           0
## 167          4.58          0.00          37
## 168          4.46          0.00          44
## 169          5.11          0.00          55
## 170          5.12          0.00          19
## 171          5.39          0.00           6
## 172          5.50          0.00          21
## 173         10.57          0.00          13
## 174          4.50          0.00          25
## 175          4.33          0.00          36
## 176          4.28          0.00          72
## 177          4.85          0.00          36
## 178          4.70          0.00          55
## 179          4.64          0.00          24
## 180          3.02          0.00          20
## 181          2.31          0.00           0
## 182          5.64          0.00          35
## 183          5.56          0.00          57
## 184          3.99          0.00          58
## 185          4.44          0.00          16
## 186          2.20          0.00           3
## 187          3.10          0.00           0
## 188          2.05          0.00           0
## 189          2.37          0.00           0
## 190          1.58          0.00           0
## 191          0.52          0.00           0
## 192          2.06          0.00           0
## 193          1.50          0.00           0
## 194          4.48          0.00           0
## 195          1.53          0.00           0
## 196          1.81          0.00           0
```

```
## 197          7.71          0.00           0
## 198          2.16          0.00           0
## 199          3.73          0.00           0
## 200          3.68          0.00           0
## 201          3.77          0.00           0
## 202          3.95          0.00           0
## 203          4.71          0.00           0
## 204          2.93          0.00           0
## 205          2.28          0.00           0
## 206          4.35          0.00           0
## 207          3.72          0.00           0
## 208          4.07          0.00           0
## 209          7.54          0.00           0
## 210          5.08          0.00           0
## 211          2.60          0.00           0
## 212          3.45          0.00           0
## 213          6.60          0.00           0
## 214          0.16          0.00           0
## 215          5.32          0.00           0
## 216          5.51          0.00           0
## 217          6.01          0.00          13
## 218          4.90          0.00           0
## 219          2.68          0.00           0
## 220          3.51          0.00           0
## 221          3.40          0.00           0
## 222          4.18          0.00           0
## 223          4.14          0.00           0
## 224          3.66          0.00           0
## 225          4.34          0.00           0
## 226          1.81          0.00           1
## 227          3.76          0.00           0
## 228          3.42          0.00           0
## 229          2.80          0.00           0
## 230          1.99          0.00           3
## 231          2.30          0.00           0
## 232          1.16          0.00           0
## 233          1.03          0.00           0
## 234          0.62          0.00           0
## 235          3.07          0.00           0
## 236          0.52          0.00           0
## 237          1.88          0.00           5
## 238          3.16          0.00          20
## 239          0.81          0.00           0
## 240          3.11          0.00           0
## 241          3.29          0.00           0
## 242          4.97          0.00           0
## 243          3.47          0.00           0
## 244          2.08          0.00           0
## 245          4.20          0.00           0
## 246          4.33          0.00           0
## 247          1.79          0.00           0
## 248          4.20          0.00          28
## 249          3.41          0.00          19
## 250          3.94          0.00           1
```

```
## 251  5.43  0.00   1
## 252  5.53  0.00  66
## 253  3.26  0.00   1
## 254  3.79  0.00  11
## 255  4.44  0.00   0
## 256  4.78  0.00  11
## 257  3.38  0.00  23
## 258  2.92  0.00   9
## 259  7.15  0.00  32
## 260  6.26  0.00   0
## 261  4.60  0.00  15
## 262  3.95  0.00   0
## 263  5.32  0.00  26
## 264  3.60  0.00   0
## 265  0.03  0.00   0
## 266  4.88  0.00   2
## 267  4.88  0.02   0
## 268  5.32  0.00   0
## 269  5.69  0.01   0
## 270  3.51  0.01  47
## 271  1.34  0.00   0
## 272  4.89  0.00   1
## 273  5.36  0.00   0
## 274  4.66  0.01  22
## 275  5.47  0.01   2
## 276  4.42  0.02  46
## 277  4.02  0.01  28
## 278  1.62  0.00  46
## 279  4.95  0.00   0
## 280  5.24  0.00   2
## 281  2.36  0.00  46
## 282  2.91  0.00  28
## 283  2.18  0.00  20
## 284  4.26  0.01   5
## 285  3.44  0.00   7
## 286  4.83  0.02   0
## 287  4.66  0.01   1
## 288  5.56  0.00   0
## 289  4.03  0.00  13
## 290  4.61  0.01   0
## 291  0.55  0.00  75
## 292  2.64  0.00  46
## 293  5.19  0.00   0
## 294  5.55  0.01   0
## 295  4.32  0.01   0
## 296  5.11  0.00   0
## 297  3.23  0.01   0
## 298  5.27  0.02  16
## 299  4.65  0.01   6
## 300  5.06  0.02   0
## 301  4.70  0.03   0
## 302  4.36  0.01  11
## 303  3.35  0.00  20
## 304  5.24  0.02   0
```

```
## 305          2.38          0.02          15
## 306          4.64          0.01          18
## 307          2.61          0.01           0
## 308          3.58          0.00          20
## 309          3.49          0.02          14
## 310          4.09          0.00           0
## 311          3.87          0.01          22
## 312          3.19          0.01          24
## 313          3.76          0.00           0
## 314          6.22          0.01           0
## 315          2.42          0.01          17
## 316          2.09          0.00           0
## 317          2.01          0.00          44
## 318          2.55          0.00          31
## 319          3.82          0.00           5
## 320          3.26          0.00          15
## 321          2.97          0.00          31
## 322          3.92          0.00          11
## 323          3.82          0.00           4
## 324          3.96          0.00          19
## 325          3.28          0.00           2
## 326          4.06          0.00           0
## 327          3.06          0.00          33
## 328          3.85          0.00           0
## 329          2.17          0.00          30
## 330          2.41          0.00          50
## 331          2.95          0.00           7
## 332          4.62          0.00           0
## 333          3.22          0.00          15
## 334          2.71          0.00          36
## 335          3.41          0.00          43
## 336          2.41          0.00          41
## 337          3.02          0.00          24
## 338          4.53          0.00          47
## 339          2.89          0.00          14
## 340          2.71          0.00          14
## 341          2.67          0.00          29
## 342          3.59          0.00           0
## 343          3.17          0.00           9
## 344          3.55          0.00           8
## 345          3.31          0.00           1
## 346          0.13          0.00           4
## 347          5.68          0.00           4
## 348          0.00          0.00           0
## 349          0.03          0.00           0
## 350          0.77          0.00          36
## 351          0.59          0.00          65
## 352          0.01          0.00           0
## 353          0.04          0.00           0
## 354          0.00          0.00           0
## 355          0.00          0.00           0
## 356          0.00          0.00           0
## 357          0.00          0.00           0
## 358          0.00          0.00           0
```

```
## 359          0.00          0.00          0
## 360          0.00          0.00          0
## 361          0.00          0.00          0
## 362          0.00          0.00          0
## 363          0.00          0.00          0
## 364          0.00          0.00          0
## 365          0.00          0.00          0
## 366          0.00          0.00          0
## 367          0.29          0.00          0
## 368          3.15          0.05          0
## 369          5.58          0.00         13
## 370          4.04          0.07         38
## 371          3.10          0.01          0
## 372          3.58          0.00          0
## 373          4.15          0.00          0
## 374          2.94          0.00          3
## 375          3.87          0.04          0
## 376          2.33          0.00          2
## 377          0.41          0.00          0
## 378          3.94          0.00          0
## 379          4.37          0.00          0
## 380          0.00          0.00          0
## 381          2.44          0.00          3
## 382          0.00          0.00          0
## 383          1.31          0.00          8
## 384          6.44          0.00          1
## 385          3.80          0.00          0
## 386          3.18          0.00          0
## 387          0.02          0.00          0
## 388          1.12          0.00          1
## 389          5.99          0.00          0
## 390          5.31          0.00          0
## 391          0.35          0.00          0
## 392          2.15          0.00          1
## 393          3.31          0.00          0
## 394          2.47          0.00          1
## 395          5.93          0.00          0
## 396          5.15          0.00          8
## 397          4.91          0.00          6
## 398          5.94          0.00         13
## 399          4.12          0.00          6
## 400          3.51          0.00          6
## 401          0.84          0.00          0
## 402          5.71          0.00          0
## 403          4.83          0.00          8
## 404          5.85          0.00          8
## 405          5.45          0.00         27
## 406          5.46          0.00          6
## 407          4.08          0.00          3
## 408          2.46          0.00          0
## 409          6.25          0.00          2
## 410          5.70          0.00          3
## 411          5.18          0.00          3
## 412          0.01          0.00          0
```

```
## 413  0.00  0.00   0
## 414  3.88  0.00   1
## 415  5.62  0.00  10
## 416  6.73  0.00   0
## 417  4.45  0.00   6
## 418  3.58  0.00   0
## 419  5.14  0.00  27
## 420  5.77  0.00  20
## 421  5.29  0.00  19
## 422  6.98  0.00   7
## 423  4.92  0.00  77
## 424  5.35  0.00  58
## 425  6.30  0.00  14
## 426  7.84  0.00  11
## 427  5.27  0.00  14
## 428  5.39  0.00  11
## 429  6.03  0.00  19
## 430  5.42  0.00  13
## 431  6.94  0.00  14
## 432  6.20  0.00  12
## 433  4.55  0.00  33
## 434  7.88  0.00  18
## 435  5.80  0.00  35
## 436  5.09  0.00  12
## 437  5.93  0.00  33
## 438  5.33  0.00 120
## 439  3.23  0.00 107
## 440  6.79  0.00   6
## 441  6.46  0.00  13
## 442  6.53  0.00   8
## 443  2.59  0.00   0
## 444  2.20  0.00   0
## 445  1.99  0.00   0
## 446  2.67  0.00   0
## 447  4.83  0.00   0
## 448  2.65  0.00   0
## 449  1.52  0.00   0
## 450  1.95  0.00  25
## 451  1.39  0.00   0
## 452  1.39  0.00   0
## 453  2.54  0.00   0
## 454  4.58  0.00   0
## 455  2.93  0.00   0
## 456  3.36  0.00   0
## 457  2.27  0.00   0
## 458  1.96  0.00  29
## 459  2.38  0.00  32
## 460  3.01  0.00   0
## 461  3.13  0.00   0
## 462  4.18  0.00   0
## 463  3.51  0.00   0
## 464  2.35  0.00  27
## 465  2.58  0.00  30
## 466  1.96  0.00   0
```

```
## 467          2.18          0.00          2
## 468          3.03          0.00          0
## 469          1.25          0.00         26
## 470          4.65          0.00          0
## 471          3.54          0.00          0
## 472          2.63          0.00          0
## 473          2.86          0.00         34
## 474          0.52          0.00          0
## 475          3.39          0.00          0
## 476          1.61          0.00         19
## 477          4.49          0.00          0
## 478          3.73          0.00         17
## 479          3.50          0.00          8
## 480          4.71          0.00          7
## 481          4.00          0.00         14
## 482          3.16          0.00          1
## 483          3.17          0.00          0
## 484          7.70          0.00          6
## 485          3.47          0.00         20
## 486          4.01          0.00          5
## 487          5.65          0.00          0
## 488          4.51          0.00         18
## 489          3.59          0.00         12
## 490          3.46          0.00         27
## 491          5.95          0.00          1
## 492          2.31          0.00         15
## 493          4.46          0.00          7
## 494          2.27          0.00          0
## 495          5.22          0.00          0
## 496          2.60          0.00         21
## 497          3.46          0.00          0
## 498          5.51          0.00         14
## 499          2.48          0.00          0
## 500          2.83          0.00         23
## 501          2.02          0.00         66
## 502          5.52          0.00          6
## 503          2.39          0.00         11
## 504          3.94          0.00          4
## 505          4.17          0.00          0
## 506          5.85          0.00          0
## 507          5.58          0.00          0
## 508          6.37          0.00          0
## 509          4.79          0.00          1
## 510          7.54          0.00          3
## 511          5.88          0.00         12
## 512          4.07          0.00         22
## 513          4.19          0.00         10
## 514          5.73          0.00          2
## 515          2.94          0.00          4
## 516          1.35          0.00          0
## 517          8.27          0.00          9
## 518          5.88          0.00         15
## 519          6.11          0.00          6
## 520          4.54          0.00          1
```

```
## 521  4.78  0.00   1
## 522  5.77  0.00  14
## 523  6.07  0.00  12
## 524  5.88  0.00   4
## 525  0.00  0.00   0
## 526  3.76  0.00   5
## 527  7.67  0.00   0
## 528  5.54  0.00   4
## 529  6.09  0.00   8
## 530  4.87  0.00   1
## 531  8.97  0.00   5
## 532  3.54  0.00   9
## 533  6.10  0.00   0
## 534  6.65  0.00   1
## 535  4.98  0.00  10
## 536  2.23  0.00   0
## 537  5.41  0.00  19
## 538  3.16  0.00   0
## 539  4.67  0.00  61
## 540  4.71  0.00  58
## 541  3.77  0.00   0
## 542  0.43  0.00   0
## 543  2.43  0.00   0
## 544  4.18  0.00  69
## 545  1.77  0.00   0
## 546  2.96  0.00  47
## 547  5.60  0.00  25
## 548  2.68  0.00   0
## 549  1.18  0.00   0
## 550  3.69  0.00  51
## 551  4.46  0.00  40
## 552  4.74  0.00  16
## 553  3.17  0.00  49
## 554  4.91  0.00  46
## 555  0.78  0.00   0
## 556  3.37  0.00   0
## 557  4.90  0.00  23
## 558  5.68  0.00  26
## 559  2.77  0.00   0
## 560  4.43  0.00  44
## 561  4.23  0.00  21
## 562  1.22  0.00   0
## 563  3.30  0.00   3
## 564  4.56  0.00  59
## 565  5.20  0.00  61
## 566  3.22  0.00   0
## 567  1.06  0.00   8
## 568  2.10  0.00  86
## 569  3.25  0.00  15
## 570  2.78  0.00 118
## 571  3.56  0.00 115
## 572  2.73  0.00 184
## 573  2.32  0.00 200
## 574  1.82  0.00 114
```

```
## 575  1.76  0.00  108
## 576  1.76  0.00   87
## 577  2.78  0.00  110
## 578  3.30  0.00   62
## 579  4.14  0.00   24
## 580  1.98  0.00  210
## 581  2.76  0.00   61
## 582  2.47  0.00   38
## 583  2.93  0.00   63
## 584  3.01  0.00   99
## 585  2.47  0.00   97
## 586  2.61  0.00  207
## 587  3.24  0.00  194
## 588  4.07  0.00   37
## 589  3.57  0.00   97
## 590  2.08  0.00   25
## 591  2.67  0.00   45
## 592  1.45  0.00   41
## 593  0.00  0.00    0
## 594  0.00  0.00    0
## 595  0.99  0.00   34
## 596  3.35  0.00  104
## 597  0.89  0.00   45
## 598  0.00  0.00    0
## 599  0.00  0.00    0
## 600  0.00  0.00    0
## 601 10.30  0.00    0
## 602  9.48  0.00    7
## 603  5.40  0.00    0
## 604  3.89  0.00    0
## 605  8.41  0.00    0
## 606  5.52  0.00   26
## 607  5.62  0.00   11
## 608  6.20  0.00    0
## 609  8.68  0.00    0
## 610  5.76  0.00    0
## 611  0.00  0.00    0
## 612  6.87  0.00    0
## 613  7.11  0.00    0
## 614  2.60  0.00    0
## 615  7.24  0.00    0
## 616  5.28  0.00    0
## 617  6.73  0.00    0
## 618  3.73  0.00    0
## 619  0.00  0.00    0
## 620  2.26  0.00    0
## 621  7.40  0.00    0
## 622  2.68  0.00    0
## 623  5.54  0.00    0
## 624  5.53  0.00    0
## 625  3.38  0.00    0
## 626  3.45  0.00    0
## 627  5.39  0.01    0
## 628  5.77  0.03    0
```

## 629	7.17	0.01	0
## 630	6.27	0.01	0
## 631	4.00	0.00	31
## 632	5.19	0.02	0
## 633	5.39	0.01	0
## 634	4.80	0.01	0
## 635	0.00	0.00	0
## 636	4.72	0.00	0
## 637	0.00	0.00	33
## 638	4.46	0.00	0
## 639	5.03	0.01	8
## 640	0.00	0.00	0
## 641	4.18	0.03	0
## 642	4.33	0.00	0
## 643	0.00	0.00	0
## 644	5.09	0.01	0
## 645	4.00	0.02	8
## 646	5.11	0.02	0
## 647	4.57	0.00	0
## 648	4.40	0.01	0
## 649	4.79	0.00	0
## 650	4.59	0.03	0
## 651	4.16	0.00	0
## 652	5.82	0.00	0
## 653	4.73	0.02	0
## 654	0.00	0.00	0
## 655	0.00	0.00	0
## 656	1.22	0.00	17
## 657	1.97	0.00	14
## 658	0.92	0.00	0
## 659	0.06	0.00	36
## 660	0.31	0.00	5
## 661	3.17	0.00	30
## 662	0.00	0.00	0
## 663	2.22	0.00	70
## 664	0.00	0.00	0
## 665	0.46	0.00	0
## 666	0.00	0.00	0
## 667	0.15	0.00	11
## 668	1.90	0.00	33
## 669	0.73	0.00	42
## 670	0.00	0.00	0
## 671	0.24	0.00	2
## 672	0.00	0.00	0
## 673	1.48	0.00	3
## 674	0.68	0.00	9
## 675	0.00	0.00	0
## 676	0.01	0.00	0
## 677	0.00	0.00	0
## 678	0.00	0.00	0
## 679	1.93	0.00	12
## 680	1.05	0.00	2
## 681	2.51	0.00	50
## 682	1.96	0.00	8

```
## 683  1.03  0.00   0
## 684  3.68  0.00   0
## 685  4.88  0.00  50
## 686  5.69  0.00   5
## 687  4.32  0.00  13
## 688  2.87  0.00  35
## 689  5.09  0.00  48
## 690  3.51  0.11  53
## 691  3.77  0.00  30
## 692  7.04  0.00  58
## 693  3.32  0.00   0
## 694  4.46  0.10  35
## 695  3.90  0.00  36
## 696  4.25  0.00   7
## 697  5.59  0.00  38
## 698  5.81  0.00  12
## 699  3.67  0.00  32
## 700  3.61  0.00   0
## 701  5.34  0.00  18
## 702  4.33  0.00  21
## 703  4.55  0.00  15
## 704  4.81  0.00  14
## 705  3.91  0.00   0
## 706  4.50  0.00   0
## 707  2.25  0.00   0
## 708  3.65  0.00  43
## 709  4.99  0.00  62
## 710  2.65  0.00  24
## 711  2.11  0.00   0
## 712  5.41  0.00  53
## 713  4.48  0.00  56
## 714  4.96  0.00  34
## 715  3.53  0.00   0
## 716  3.10  0.00   0
## 717  5.39  0.00   0
## 718  5.05  0.02  48
## 719  5.31  0.00  53
## 720  5.86  0.00  60
## 721  5.17  0.00  30
## 722  4.37  0.00  64
## 723  4.15  0.00   2
## 724  7.42  0.00   0
## 725  7.67  0.00  51
## 726  8.23  0.00  16
## 727  5.29  0.00  50
## 728  8.26  0.00  16
## 729  7.95  0.00  55
## 730  2.52  0.00   0
## 731  3.75  0.00   0
## 732  3.83  0.00  64
## 733  5.36  0.00  58
## 734  0.00  0.00   0
## 735  5.48  0.00  53
## 736  3.86  0.00  44
```

```
## 737  0.00  0.00   0
## 738  2.97  0.00  59
## 739  2.84  0.00  31
## 740  3.66  0.00  35
## 741  2.53  0.00  30
## 742  0.01  0.00   0
## 743  0.00  0.00   0
## 744  2.31  0.00  61
## 745  2.51  0.00  67
## 746  2.54  0.00  87
## 747  4.51  0.00  19
## 748  2.67  0.00  58
## 749  1.80  0.00   0
## 750  2.15  0.00   0
## 751  2.37  0.00  69
## 752  2.12  0.00  70
## 753  2.53  0.00  55
## 754  3.36  0.00  54
## 755  4.00  0.00  24
## 756  5.24  0.00  42
## 757  4.85  0.00  30
## 758  2.66  0.00  66
## 759  3.16  0.00  57
## 760  2.90  0.00  45
## 761  2.95  0.00  24
## 762  3.12  0.00  84
## 763  4.68  0.00  20
## 764  3.25  0.00  32
## 765  3.12  0.00  67
## 766  2.45  0.00  72
## 767  2.23  0.00  57
## 768  1.89  0.00   5
## 769  2.10  0.00 116
## 770  2.45  0.00  95
## 771  3.36  0.00 119
## 772  2.59  0.00 132
## 773  1.49  0.00  96
## 774  3.64  0.00 111
## 775  3.35  0.00 102
## 776  2.95  0.00  90
## 777  2.38  0.00  89
## 778  2.58  0.00 100
## 779  1.88  0.00  60
## 780  4.02  0.00 125
## 781  3.26  0.00 129
## 782  3.86  0.00 118
## 783  3.10  0.00  68
## 784  2.93  0.00  60
## 785  2.35  0.00  90
## 786  3.17  0.00  58
## 787  2.54  0.00  27
## 788  0.85  0.00   0
## 789  1.43  0.00   0
## 790  2.59  0.00  87
```

## 791	1.91	0.00	89
## 792	2.21	0.00	93
## 793	1.21	0.00	90
## 794	2.35	0.00	121
## 795	3.66	0.00	125
## 796	2.69	0.00	66
## 797	1.85	0.00	96
## 798	3.04	0.00	60
## 799	0.76	0.00	28
## 800	1.59	0.00	40
## 801	1.31	0.00	35
## 802	0.54	0.00	29
## 803	1.76	0.00	0
## 804	2.45	0.00	6
## 805	2.33	0.00	41
## 806	1.80	0.00	16
## 807	2.78	0.00	0
## 808	3.11	0.01	5
## 809	1.75	0.00	49
## 810	1.87	0.00	0
## 811	3.13	0.00	30
## 812	1.34	0.00	41
## 813	1.77	0.00	7
## 814	1.37	0.00	19
## 815	1.70	0.00	45
## 816	0.34	0.00	11
## 817	2.40	0.00	16
## 818	0.00	0.00	0
## 819	4.50	0.00	65
## 820	4.21	0.00	116
## 821	3.91	0.00	123
## 822	5.41	0.00	60
## 823	2.44	0.00	64
## 824	1.69	0.00	0
## 825	5.20	0.00	117
## 826	4.18	0.00	120
## 827	4.78	0.00	82
## 828	4.29	0.00	137
## 829	4.18	0.00	113
## 830	2.48	0.00	19
## 831	2.94	0.00	0
## 832	3.92	0.00	117
## 833	4.42	0.00	90
## 834	5.33	0.00	4
## 835	2.91	0.00	11
## 836	4.27	0.00	3
## 837	2.34	0.00	0
## 838	2.47	0.00	71
## 839	4.01	0.00	63
## 840	4.50	0.00	71
## 841	4.20	0.00	19
## 842	5.74	0.00	66
## 843	3.78	0.00	74
## 844	3.54	0.00	0

```
## 845  2.33  0.00   0
## 846  4.72  0.00  71
## 847  3.92  0.00  63
## 848  5.27  0.00  72
## 849  2.69  0.00   8
## 850  3.58  0.00   0
## 851  3.23  0.00   2
## 852  2.43  0.00   0
## 853  0.90  0.00   0
## 854  0.00  0.00   0
## 855  0.00  0.00   0
## 856  1.35  0.00   4
## 857  3.44  0.00   7
## 858  3.07  0.00   0
## 859  3.01  0.00  35
## 860  4.08  0.00   4
## 861  4.75  0.00   7
## 862  4.27  0.00   2
## 863  1.81  0.00  18
## 864  3.89  0.00   1
## 865  2.87  0.00  77
## 866  3.61  0.00   0
## 867  4.92  0.00  46
## 868  6.43  0.00   2
## 869  2.04  0.00  10
## 870  0.00  0.00   0
## 871  0.00  0.00   0
## 872  0.00  0.00   0
## 873  1.18  0.00   0
## 874  3.23  0.00   2
## 875  4.77  0.00   0
## 876  3.66  0.00   3
## 877  1.73  0.00  66
## 878  3.72  0.00   9
## 879  3.17  0.00   5
## 880  0.00  0.00   0
## 881  1.64  0.00   0
## 882  0.84  0.00   0
## 883  0.78  0.00   0
## 884  1.59  0.00   0
## 885  0.16  0.00   0
## 886  0.00  0.00   0
## 887  0.00  0.00   0
## 888  0.00  0.00   0
## 889  1.74  0.00   0
## 890  0.09  0.00   0
## 891  2.27  0.00   1
## 892  2.75  0.00   8
## 893  0.16  0.00   3
## 894  0.00  0.00   0
## 895  0.85  0.00   0
## 896  1.13  0.00   0
## 897  3.94  0.00   0
## 898  4.93  0.00   6
```

```
## 899                3.91                  0.00                10
## 900                1.04                  0.00                 0
## 901                1.17                  0.00                 0
## 902                1.55                  0.00                 0
## 903                1.46                  0.00                 0
## 904                0.00                  0.00                 0
## 905                0.00                  0.00                 0
## 906                0.00                  0.00                 0
## 907                0.00                  0.00                 0
## 908                0.00                  0.00                 0
## 909                0.00                  0.00                 0
## 910                7.82                  0.00                85
## 911                5.64                  0.00               108
## 912                7.75                  0.02                68
## 913                7.01                  0.01               106
## 914               10.71                  0.00                94
## 915                8.79                  0.00                58
## 916                5.94                  0.00                29
## 917                5.03                  0.00                82
## 918                6.34                  0.00                73
## 919                4.89                  0.00                82
## 920                5.97                  0.05                61
## 921                7.40                  0.01               102
## 922                4.69                  0.00                64
## 923                6.27                  0.01               113
## 924                6.50                  0.00                22
## 925                7.10                  0.00                93
## 926                5.97                  0.00                58
## 927                5.79                  0.00                18
## 928                4.93                  0.00               124
## 929                4.57                  0.00                36
## 930                3.56                  0.00                 0
## 931                6.67                  0.01                19
## 932                5.53                  0.00                66
## 933                4.37                  0.00                67
## 934                6.16                  0.00                96
## 935                6.99                  0.00               105
## 936                6.80                  0.00                17
## 937                6.24                  0.05                73
## 938                6.28                  0.00                18
## 939                5.89                  0.00                88
## 940                4.25                  0.00                23
##     fairly_active_minutes lightly_active_minutes sedentary_minutes calories
## 1                      13                   328              728     1985
## 2                      19                   217              776     1797
## 3                      11                   181             1218     1776
## 4                      34                   209              726     1745
## 5                      10                   221              773     1863
## 6                      20                   164              539     1728
## 7                      16                   233             1149     1921
## 8                      31                   264              775     2035
## 9                      12                   205              818     1786
## 10                      8                   211              838     1775
## 11                     27                   130             1217     1827
```

```
## 12  21  262  732  1949
## 13   5  238  709  1788
## 14  14  216  814  2013
## 15  23  279  833  1970
## 16  11  243 1108  2159
## 17  28  189  782  1898
## 18  12  243  815  1837
## 19  34  217  712  1947
## 20  35  246  730  1820
## 21  15  277  798  2004
## 22  24  254  816  1990
## 23  22  203 1179  1819
## 24  24  250  857  1959
## 25   6  289  754  1896
## 26  46  175  833  1821
## 27   8  203  574  1740
## 28  11  206  835  1819
## 29  31  214  746  1859
## 30  23  251  669  1783
## 31   0    0 1440     0
## 32   0  146 1294  1432
## 33   0  148 1292  1411
## 34   0  236 1204  1572
## 35   0   96 1344  1344
## 36   0  176 1264  1463
## 37  22  127 1276  1554
## 38   7  202 1214  1604
## 39   0  141 1299  1435
## 40   0  151 1289  1446
## 41   0  186 1254  1467
## 42   0  199 1241  1470
## 43   0  227 1213  1562
## 44  18  185 1221  1617
## 45   0  202 1238  1492
## 46   0  140 1300  1402
## 47  36  154 1233  1670
## 48   5  115 1320  1401
## 49   0  150 1290  1404
## 50  23  224 1182  1655
## 51  63  171 1020  2690
## 52   6  166 1261  1497
## 53   0   96 1344  1334
## 54   0  118 1322  1368
## 55   0  117 1323  1370
## 56   0  102 1338  1341
## 57   0  182 1258  1474
## 58   0  152 1288  1427
## 59   0   91 1349  1328
## 60   0  139 1301  1393
## 61   0  112 1328  1359
## 62   0  107  890  1002
## 63  51  256 1131  3199
## 64  16  135 1259  2902
## 65  58  252 1125  3226
```

```
## 66    4   170  1263  2750
## 67   42   212  1135  3493
## 68   13   186  1212  3011
## 69   33   121  1271  2806
## 70   58   278  1099  3300
## 71    0   125  1315  2430
## 72    0    38  1402  2140
## 73    0    86  1354  2344
## 74   15   160  1265  2677
## 75    0    89  1351  2413
## 76    1    94  1337  2497
## 77   41   223  1165  3123
## 78    0   118  1322  2489
## 79   53   227  1157  3108
## 80    0   120  1193  2498
## 81   71   402   816  3846
## 82   24   146   908  2696
## 83    7   148   682  2580
## 84   94   221  1115  3324
## 85    0    52  1388  2222
## 86   12    81  1341  2463
## 87    6   369  1054  3328
## 88   17   243  1139  3404
## 89    0   295   991  2987
## 90    6   303  1099  3008
## 91   19   155  1254  2799
## 92    0    49   713  1276
## 93    0   339  1101  2030
## 94    0   248  1192  1860
## 95    0   373   843  2130
## 96    0   176   527  1725
## 97    0   147  1293  1657
## 98    8   199  1231  1793
## 99   12   217  1211  1814
## 100   0    10  1430  1366
## 101   0     1  1439  1349
## 102  13   308  1117  2062
## 103   0   220  1220  1827
## 104   0   139  1301  1645
## 105   0     0  1440  1347
## 106   0     0  1440  1347
## 107   0     0  1440  1347
## 108   0     1  1439  1348
## 109   0   302  1138  1992
## 110   0   247  1082  1856
## 111   0   184   218  1763
## 112   7    75   585  1541
## 113   0     0  1440  1348
## 114   0   184  1256  1742
## 115   0    87  1353  1549
## 116   0   120  1320  1589
## 117   0     2  1438  1351
## 118   0     0  1440  1347
## 119   0     0  1440  1347
```

```
## 120     0     0  1440  1347
## 121     0     0  1440  1347
## 122     0     0  1440  1347
## 123     0     0   711   665
## 124     0    55   734  2220
## 125     0    32   986  2151
## 126     9    88  1292  2383
## 127     0    51   941  2221
## 128     0     0  1440  2064
## 129     0     0  1440  2063
## 130     0    17  1423  2111
## 131     0     0  1440  2063
## 132     0     0  1440  2063
## 133     0     0  1440  2064
## 134     0    10  1430  2093
## 135     0   145  1295  2499
## 136     6    75  1358  2324
## 137     0    12  1303  2100
## 138     0   192  1058  2638
## 139     0     0  1440  2063
## 140     0    95  1167  2351
## 141     0     0  1440  2063
## 142     0     0  1440  2064
## 143     1    70  1355  2411
## 144     8    94  1322  2505
## 145     0    17  1413  2195
## 146     0    87  1353  2338
## 147     0     0  1440  2063
## 148     0   108  1332  2383
## 149     0    48  1392  2229
## 150     0     0  1440  2063
## 151     0     0  1440  2063
## 152     0     0  1440  2063
## 153     0     0  1440  2063
## 154     0     0   966  1383
## 155    14   227  1157  2390
## 156     5   292  1100  2601
## 157     3   257  1148  2312
## 158     9   282  1122  2525
## 159    11   151  1237  2177
## 160    29   331  1052  2782
## 161     3   311  1078  2770
## 162     7   250  1152  2489
## 163    63   276  1053  2897
## 164    53   255  1028  3158
## 165    10   273  1105  2638
## 166     0   249  1191  2069
## 167    26   216  1161  2529
## 168     8   217  1171  2470
## 169    24   275  1086  2793
## 170    20   282  1119  2463
## 171    20   291  1123  2296
## 172    40   281  1098  2611
## 173    23   361  1043  2732
```

```
## 174   28   245  1142  2380
## 175    8   277  1119  2473
## 176   14   250  1104  2752
## 177   27   272  1105  2649
## 178   20   253  1112  2609
## 179   17   295  1104  2498
## 180    2   149  1269  1995
## 181    0   135  1305  1848
## 182   47   297  1061  2709
## 183   28   271  1084  2797
## 184   25   224  1133  2544
## 185   16   236   728  1853
## 186    8   181   706  1459
## 187    0   238   663  1521
## 188    0   197   653  1431
## 189    0   188   687  1444
## 190    0   150   728  1373
## 191    0    60  1053  1214
## 192    0   182  1062  1419
## 193    0   141   785  1356
## 194    0   327   623  1667
## 195    0   153   749  1370
## 196    0   162   712  1399
## 197    0   432   458  1916
## 198    0   164   704  1401
## 199    0   260   821  1576
## 200    0   288  1018  1595
## 201    0   286   586  1593
## 202    0   331   626  1649
## 203    0   352   492  1692
## 204    0   233   594  1506
## 205    0   191   716  1447
## 206    0   355   716  1690
## 207    0   304   981  1604
## 208    0   345   530  1658
## 209    0   475   479  1926
## 210    0   383   511  1736
## 211    0   229   665  1491
## 212    0   258   610  1555
## 213    0   401   543  1869
## 214    0    17  1002  1141
## 215    0   330   569  1698
## 216    0   343   330  1364
## 217    9   306  1112  2124
## 218    0   335  1105  2003
## 219    0   191  1249  1696
## 220    0   245  1195  1801
## 221    0   195  1245  1724
## 222    0   249  1191  1852
## 223    7   260  1173  1905
## 224   11   228  1201  1811
## 225   11   283  1146  1922
## 226   10   127  1302  1610
## 227    0   266  1174  1851
```

```
## 228    0   242  1129  1804
## 229    0   204  1236  1725
## 230    5   152  1280  1654
## 231    0   147  1293  1632
## 232    0    82  1358  1481
## 233    0    76  1364  1473
## 234    0    45  1395  1410
## 235    0   234  1206  1779
## 236    0    40  1400  1403
## 237    6   123  1306  1613
## 238   10   206  1204  1878
## 239    0    52  1388  1426
## 240   11   223  1206  1780
## 241    0   204  1236  1742
## 242    0   319  1121  1972
## 243    0   247  1193  1821
## 244    0   145  1295  1630
## 245    0   290  1150  1899
## 246    0   300  1140  1903
## 247    0   128   830  1125
## 248   13   320   964  2344
## 249   32   195   676  2038
## 250   48   206   705  2010
## 251   24   284   720  2133
## 252   72   268   968  2670
## 253    7   249   508  1882
## 254   16   206   678  1944
## 255    7   382   648  2346
## 256   43   269  1011  2198
## 257   26   208   761  2048
## 258   27   206   781  1946
## 259   35   360   591  2629
## 260    0   360   584  2187
## 261   11   277   653  2095
## 262    0   227   732  1861
## 263    9   295   623  2194
## 264    0   229   764  1854
## 265    0     4     2   403
## 266   21   356  1061  1982
## 267    8   404  1028  2004
## 268    0   331  1109  1893
## 269    0   448   992  2063
## 270    1   305  1087  2148
## 271    8   160  1272  1529
## 272    6   311  1122  1890
## 273    0   389  1051  1956
## 274    5   378  1035  2094
## 275   10   371  1057  1970
## 276    0   366  1028  2241
## 277    5   330  1077  2021
## 278    1   190  1203  1898
## 279    0   359  1081  1907
## 280    5   309  1124  1882
## 281    0   197  1197  1966
```

```
## 282    7   213  1192  1835
## 283   23   206  1191  1780
## 284   20   248  1167  1830
## 285   18   196  1219  1739
## 286    7   334  1099  1878
## 287    6   363  1070  1906
## 288    0   420  1020  2015
## 289   23   311  1093  1971
## 290    5   370  1065  1910
## 291   11    52  1302  1897
## 292    0   326  1068  2096
## 293    0   345  1095  1906
## 294    0   373  1067  1962
## 295    0   319  1121  1826
## 296    0   268   720  1431
## 297    0   280  1160  1788
## 298    8   371  1045  2093
## 299   25   370  1039  2065
## 300    0   335  1105  1908
## 301    0   356  1084  1908
## 302    2   322  1105  1964
## 303    7   343  1070  2014
## 304    0   376  1064  1985
## 305    3   274  1148  1867
## 306    9   376  1037  2124
## 307    0   206  1234  1669
## 308    2   303  1115  1995
## 309    7   292  1127  1921
## 310    0   416  1024  2010
## 311    2   333  1083  2057
## 312   13   346  1057  2095
## 313    0   385  1055  1972
## 314    0   402  1038  2044
## 315    4   300  1119  1946
## 316    0   172   842  1237
## 317   19   131   777  1450
## 318   46   153   754  1495
## 319   23   214   801  1433
## 320   42   183   644  1468
## 321   83   153   663  1625
## 322   58   205   600  1529
## 323   95   214   605  1584
## 324   67   221   738  1638
## 325   98   164   845  1554
## 326    0   242   712  1397
## 327   12   188   731  1481
## 328   92   252   724  1638
## 329   95   129   660  1655
## 330    9   133   781  1570
## 331   95   170   797  1551
## 332   10   176   714  1377
## 333    8   190   804  1407
## 334   32   150   744  1545
## 335   52   194   687  1650
```

```
## 336      40     124     691    1501
## 337     143     176     713    1760
## 338      41     258     594    1710
## 339      96     142     852    1628
## 340      88     178     680    1618
## 341      55     168     676    1590
## 342      86     208     703    1574
## 343     116     171     688    1633
## 344     122     151    1159    1667
## 345     115     196     676    1630
## 346       0       9      13      52
## 347      15     331     712    3654
## 348       0       0    1440    1981
## 349       0       3    1437    2011
## 350      18      87    1299    2951
## 351      21      55    1222    3051
## 352       0       2    1438    1990
## 353       0       2    1438    1995
## 354       0       0    1440    1980
## 355       0       0    1440    1980
## 356       0       0    1440    1980
## 357       0       0    1440    1980
## 358       0       0    1440    1980
## 359       0       0    1440    1980
## 360       0       0    1440    1980
## 361       0       0    1440    1980
## 362       0       0    1440    1980
## 363       0       0    1440    1980
## 364       0       0    1440    1980
## 365       0       0    1440    1980
## 366       0       0    1440    1980
## 367      11      31    1350    2207
## 368       0     174     950    2828
## 369      46     346     531    3879
## 370      42     196     916    3429
## 371       0     177     855    2704
## 372       0     184    1256    2975
## 373       0     263     775    3089
## 374       5     173    1225    2785
## 375       0     206     774    2926
## 376       8     134    1296    2645
## 377       0      21     721    1120
## 378       0     164    1276    2286
## 379       0     160    1280    2306
## 380       0       0    1440    1776
## 381       6      88     873    1527
## 382       0       0    1440    2115
## 383      15      96    1234    2135
## 384       9     339     589    2302
## 385       0     228     752    1985
## 386       0     194     724    1884
## 387       0       3    1363    1464
## 388       9      58     824    1632
## 389       0     311     604    2200
```

```
## 390  18  306  671  2220
## 391   0   34 1265  1792
## 392  19  176  709  1886
## 393   0  233  546  1945
## 394   5  191  692  1880
## 395   8  390  544  2314
## 396  21  288  649  2236
## 397  47  300  680  2324
## 398   8  359  552  2367
## 399  18  289  624  2175
## 400  38  196  695  2092
## 401   0   67  836  1593
## 402  11  344  585  2270
## 403  26  287  669  2235
## 404  13  313 1106  2282
## 405  34  328  957  2530
## 406  11  314  692  2266
## 407  28  279  586  2158
## 408   0  153  603  1792
## 409  14  374  490  2345
## 410  12  329  555  2260
## 411  18  311  574  2232
## 412   0    2    0   257
## 413   0    0 1440  2955
## 414  14  150 1275  3092
## 415  35  219  945  2998
## 416   0  299  837  3066
## 417   9  253  609  3073
## 418   0  201  721  2572
## 419   8  239 1017  3274
## 420  16  249  704  3015
## 421  42  228  696  3083
## 422  12  272  853  3069
## 423  25  220  945  3544
## 424   5  215  749  3306
## 425   8  239  584  2885
## 426  31  301 1054  3288
## 427  23  224  673  2929
## 428  48  241  684  3074
## 429   9  234  878  2969
## 430  16  236 1175  2979
## 431  43  300  537  3283
## 432  15  241  579  2926
## 433   4  204  935  3147
## 434  18  306  984  3290
## 435  21  251  632  3162
## 436  39  199  896  2899
## 437  45  262 1100  3425
## 438  56  260  508  4022
## 439  38  178  576  3934
## 440  19  258 1020  3013
## 441  14  267  648  3061
## 442  18  256  858  2954
## 443   0  108  825  1623
```

```
## 444     0     196     787    2113
## 445     0     194     840    2095
## 446     0     231     717    2194
## 447     0     350     711    2496
## 448     0     225     716    2180
## 449     0     114    1219    1933
## 450     6     162    1247    2248
## 451     0     121     895    1954
## 452     0     137     841    1974
## 453     0     215     756    2150
## 454     0     317     706    2432
## 455     0     201    1239    2149
## 456     0     244    1196    2247
## 457     0     179     916    2070
## 458     1     180     839    2291
## 459     1     194     839    2361
## 460     0     236     762    2203
## 461     0     226    1106    2196
## 462     0     290     797    2363
## 463     0     240     741    2246
## 464     4     200     667    2336
## 465     2     233     725    2421
## 466     0     180     897    2070
## 467     6     185     734    2120
## 468     0     229     809    2211
## 469     4     108     866    2123
## 470     8     308     733    2423
## 471     0     266     641    2281
## 472     0     231     783    2181
## 473    22     232     622    2499
## 474     0      58     380    1212
## 475     0     318    1122    1909
## 476     7     127    1287    1722
## 477     0     279    1161    1922
## 478    30     262    1131    2121
## 479    12     308    1112    1997
## 480    19     304    1110    2117
## 481    15     331    1080    2116
## 482     9     248    1182    1876
## 483     0     222    1218    1788
## 484    21     432     844    2486
## 485    25     273    1122    2094
## 486     5     308    1122    2085
## 487     0     395    1045    2173
## 488    10     340     993    2225
## 489    41     283    1062    2223
## 490    14     312    1087    2098
## 491    11     367     985    2185
## 492    29     197    1096    1918
## 493    29     293    1111    2105
## 494     0     190    1121    1692
## 495     0     383    1057    2066
## 496    10     237    1172    1953
## 497     0     252    1188    1842
```

```
## 498    8   370  1048  2262
## 499    0   202  1238  1722
## 500   16   233  1116  1973
## 501   35   238  1019  2666
## 502   30   339  1065  2223
## 503   18   220  1191  1889
## 504   31   324  1081  2131
## 505    0   247   736  1452
## 506    0   263   718  2947
## 507    0   258   777  2898
## 508    0   271   772  2984
## 509    8   256   944  2896
## 510   24   335   556  3328
## 511   66   302   437  3394
## 512   30   191   890  3013
## 513    8   179   757  2812
## 514   29   260   717  3061
## 515   41   144   901  2729
## 516    0    72  1341  2241
## 517   66   408   469  3691
## 518   95   281   542  3538
## 519   15   270   730  3064
## 520    8   216   765  2784
## 521   16   238   733  2908
## 522    9   232   738  3033
## 523   19   267   692  3165
## 524   36   263   728  3115
## 525    0     0  1440  2017
## 526   40   195  1131  2859
## 527    0   313   729  3145
## 528   15   251   757  3004
## 529    5   241   745  3006
## 530   16   207   682  2859
## 531   46   439   577  3683
## 532  125   192  1019  3287
## 533   12   253   746  2990
## 534   37   262   701  3172
## 535   41   235   784  3069
## 536    0    68   241  1240
## 537   13   277   767  2026
## 538    0   226   647  1718
## 539   41   256   693  2324
## 540   38   239   689  2254
## 541    0   288   521  1831
## 542    0    46   943  1397
## 543    0   206   622  1683
## 544   28   249   756  2284
## 545    0   148   598  1570
## 546   42   177   801  2066
## 547   16   270   781  2105
## 548    0   272   443  1776
## 549    0   104   582  1507
## 550   11   201   732  2033
## 551   18   238   750  2093
```

```
## 552   16  206  745  1922
## 553   13  165  727  1999
## 554   15  270  709  2169
## 555    0   84  506  1463
## 556    0  237  436  1747
## 557    9  227  724  1996
## 558   29  247  812  2116
## 559    0  224  651  1698
## 560   29  241  692  2156
## 561    9  229  761  1916
## 562    0   96  902  1494
## 563    8  210  505  1762
## 564   22  251  667  2272
## 565   40  265  707  2335
## 566    0  195  628  1693
## 567    6   48  222   741
## 568   16  140  728  3405
## 569   11  144  776  2551
## 570   30  176  662  4022
## 571   54  199  695  4005
## 572   56  158  472  4274
## 573   37  159  525  4552
## 574   32  130  623  3625
## 575   23  111  733  3501
## 576   16  113  773  3192
## 577   74  175  670  4018
## 578   30  200  823  3329
## 579   24  223  627  3152
## 580   65  141  425  4392
## 581   38  214  743  3374
## 582   32  181  759  3088
## 583   16  190  773  3294
## 584   51  141  692  3580
## 585   36  165  739  3544
## 586   45  163  621  4501
## 587   72  178  499  4546
## 588   20  235  732  3014
## 589    8  212  580  3795
## 590    9  141  631  2755
## 591   21  143 1153  3004
## 592   16   79 1304  2643
## 593    0    0 1440  1819
## 594    0    0 1440  1819
## 595   11   70 1099  2489
## 596   37  194  639  3841
## 597   15   63  257  1665
## 598    0    0 1440  1496
## 599    0    0 1440  1496
## 600    0    0 1440  1496
## 601    6  513  921  2865
## 602   15  518  502  2828
## 603    0  312  702  2225
## 604    0  241  759  2018
## 605    0  480  425  2606
```

```
## 606   10   349   587  2536
## 607   19   294   579  4900
## 608    0   402   413  2409
## 609    0   512   468  2651
## 610    0   362   711  2305
## 611    0     0  1440  1497
## 612    7   352  1077  2450
## 613    0   458   417  2576
## 614    0   141   758  1879
## 615    0   461   479  2560
## 616    0   343  1040  2275
## 617    0   397   525  2361
## 618    0   236  1204  2044
## 619    0     0  1440  1496
## 620    0   156  1279  1902
## 621    0   487   479  2636
## 622    0   133   673  1838
## 623    0   412   456  2469
## 624    0   318   517  2250
## 625    0   197   125  1248
## 626    0   199  1241  2560
## 627    0   350  1090  2905
## 628    0   363  1077  2952
## 629    0   328  1112  2896
## 630    0   258  1182  2783
## 631   12   225  1172  3171
## 632    0   271  1169  2766
## 633    0   321  1119  2839
## 634    0   258  1182  2701
## 635    0     0  1440  2060
## 636    0   302  1138  2796
## 637    0     0  1407  2664
## 638    0   258  1182  2703
## 639    3   249  1180  2771
## 640    0     0  1440  2060
## 641    0   287  1153  2743
## 642    0   255  1185  2687
## 643    0     0  1440  2060
## 644    0   324  1116  2843
## 645   95   282  1055  3327
## 646    0   268  1172  2725
## 647    0   240  1200  2671
## 648    0   272  1168  2718
## 649    0   239  1201  2682
## 650    0   305  1135  2806
## 651    0   227  1213  2613
## 652    0   251  1189  2712
## 653    0   264   800  2175
## 654    0     0  1440     0
## 655    0     0  1440  1841
## 656   18    85  1053  2400
## 657   24   105   863  2507
## 658    0    58   976  2127
## 659   18     9  1377  2225
```

```
## 660   24   19  1392  2067
## 661   31  146  1233  2798
## 662    0    0  1440  1841
## 663  113  178  1079  3727
## 664    0    0  1440  1841
## 665    0   20  1420  1922
## 666    0    0  1440  1841
## 667   18   11  1400  2053
## 668   13   92  1302  2484
## 669   30   47  1321  2584
## 670    0    0  1440  1841
## 671   13   15  1410  1993
## 672    0    0  1440  1841
## 673    9   84  1344  2280
## 674   34   50  1347  2319
## 675    0    0  1440  1841
## 676    0    1  1439  1843
## 677    0    0  1440  1841
## 678    0    0  1440  1841
## 679   35   75  1318  2496
## 680    5   49   551  1032
## 681   14  189   796  1994
## 682   24  142   548  1718
## 683    0   86   862  1466
## 684    0  217   837  1756
## 685    3  280   741  2173
## 686   13  295   634  2027
## 687   42  238   689  2039
## 688   41  195   659  2046
## 689    4  297   639  2174
## 690   27  214   708  2179
## 691   33  240   659  2086
## 692   41  347   484  2571
## 693    0  199   720  1705
## 694   31  282   637  2194
## 695    7  254   680  2012
## 696   38  279   697  2034
## 697    8  288   621  2182
## 698   15  369   645  2254
## 699   16  237   731  2002
## 700    0  215   722  1740
## 701   39  313   655  2162
## 702   36  267   654  2072
## 703   36  284   683  2086
## 704   22  305   591  2066
## 705    0  299   717  1850
## 706    0  328   745  1947
## 707   14  151   709  1659
## 708   21  231   607  2105
## 709   34  275   626  2361
## 710    7  199   709  1855
## 711    8  105   127   928
## 712    8  355  1024  2937
## 713   22  261  1101  2742
```

```
## 714    6   304  1096  2668
## 715    0   202  1238  2098
## 716    0   203  1155  2076
## 717    0   305  1135  2383
## 718   31   284  1077  2832
## 719   17   304  1066  2812
## 720   33   347  1000  3096
## 721   34   327  1049  2763
## 722   50   261  1065  2889
## 723   25   223  1190  2284
## 724    0   419  1021  2667
## 725   24   379   986  3055
## 726   22   424   978  2939
## 727   12   337  1041  2830
## 728   16   401  1007  2836
## 729   42   382   961  3180
## 730    0   200  1240  2051
## 731    0   237  1142  2225
## 732   14   250  1112  2642
## 733   31   330  1021  2976
## 734    0     0  1440  1557
## 735   23   317  1047  2933
## 736   13   247  1136  2553
## 737    0     0   111   120
## 738    6   153   745  2772
## 739   26   155   744  2516
## 740   32   189   787  2734
## 741   21   139   864  2395
## 742    0     3  1437  1635
## 743    0     0  1440  1629
## 744   51   114  1136  2743
## 745   69   124   671  2944
## 746   13   145   797  2997
## 747    6   206   758  2463
## 748   59   153   762  2846
## 749    0    90  1350  1965
## 750    0   125   566  2049
## 751   39   129   706  2752
## 752   33   132   726  2781
## 753    6   145   829  2693
## 754   48   161   810  2862
## 755   36   182  1198  2616
## 756   17   308   584  2995
## 757   15   258   685  2730
## 758   26   139   737  2754
## 759   36   152   761  2754
## 760   12   135   843  2655
## 761   14   149  1253  2386
## 762   35   154   834  2924
## 763   42   209   621  2739
## 764   27   147   695  2534
## 765   50   171   743  2960
## 766   23   106  1182  2800
## 767   40   128   757  2735
```

```
## 768    4    58   343  1199
## 769    8   123  1193  3186
## 770   12   156  1177  3140
## 771    5   193  1123  3411
## 772    8   158  1142  3410
## 773    6    83  1255  2867
## 774   21   195  1113  3213
## 775    6   195  1137  3133
## 776    7   191  1152  3114
## 777    5   158   695  3043
## 778    6   170  1164  3103
## 779    3   117  1260  2655
## 780   14   223   741  3554
## 781   33   182  1096  3577
## 782    9   209  1104  3403
## 783    5   185  1182  2846
## 784   10   183  1187  2852
## 785    9   153  1188  3062
## 786    8   159  1215  2794
## 787    1   131  1281  2408
## 788    0    51  1389  1886
## 789    0    95  1345  1988
## 790   22   165  1166  3023
## 791    8   123  1220  2918
## 792    9   130  1208  2950
## 793   15    90  1245  2859
## 794   20   148  1076  3331
## 795   14   228  1073  3589
## 796   12   148  1214  2765
## 797   10   115  1219  2926
## 798    7   184  1189  2809
## 799    4    39   839  1505
## 800    2   154  1244  2044
## 801   11    96  1298  1935
## 802   16    33  1362  1705
## 803    0   105  1335  1632
## 804   51   115  1268  1880
## 805    5   157  1237  2112
## 806   16   130  1278  1829
## 807    0   164  1276  1763
## 808   18   216  1201  1931
## 809   20   172  1199  2218
## 810    0   120  1320  1651
## 811   26   191  1193  2132
## 812    4    82  1313  1976
## 813   54   118  1261  1909
## 814   14   108  1299  1813
## 815    5   104  1286  2008
## 816   16    20  1393  1580
## 817   14   136  1257  1854
## 818    0     0  1440     0
## 819   15   156   723  3635
## 820   14   169   680  4079
## 821   21   174   699  4163
```

```
## 822  23 190 729 3666
## 823  21 142 563 3363
## 824   0  93 599 2572
## 825  10 174 720 4157
## 826  19 154 737 4092
## 827   8 169 763 3787
## 828  16 145 677 4236
## 829  12 159 769 4044
## 830  10 136 740 2908
## 831   0 135 734 2741
## 832  16 141 692 4005
## 833  18 161 593 3763
## 834   4 192 676 3061
## 835  10 139 711 2884
## 836   7 172 767 2982
## 837   0 121 780 2660
## 838  10 127 669 3369
## 839   4 142 802 3491
## 840  20 195 822 3784
## 841  10 167 680 3110
## 842   3 214 764 3783
## 843   5 166 831 3644
## 844   0 158 851 2799
## 845   0 139 621 2685
## 846  13 171 772 3721
## 847  13 152 840 3586
## 848  10 184 763 3788
## 849   6 102 433 1976
## 850   7 196 1237 2650
## 851  23 163 1252 2654
## 852   0 134 1306 2443
## 853   0  65 1375 2505
## 854   0   0 1440 2693
## 855   0   0 1440 2439
## 856  22 105 1309 2536
## 857  10 166 1257 2668
## 858  27 167 1246 2647
## 859  18 158 1229 2883
## 860  54 212 1170 2944
## 861  44 238 1151 3012
## 862  44 206 1188 2889
## 863   6 122 1294 2547
## 864  91 214 1134 3093
## 865   5 129 1229 3142
## 866  28 203 1209 2757
## 867  67 258 1069 3513
## 868  28 317 1093 3164
## 869   2 117 1311 2596
## 870   0   0 1440 2894
## 871   0   0 1440 3212
## 872   0   0 1440 2516
## 873   0  70 1370 3266
## 874  22 166 1250 2683
## 875   0 250 1190 2810
```

```
## 876   72  182  1183  2940
## 877    4  110  1260  2947
## 878   43  162  1226  2846
## 879   71  177  1106  2804
## 880    0    0  1440     0
## 881    0  116   831  2044
## 882    0   82   806  1934
## 883    0   84   853  1963
## 884    0  126   937  2009
## 885    0   12  1428  1721
## 886    0    0  1440  1688
## 887    0    0  1440  1688
## 888    0    0  1440  1688
## 889   10  139   744  2188
## 890    0    9  1431  1720
## 891   20  195   817  2419
## 892   45  232   795  2748
## 893    8   19  1410  1799
## 894    0    0  1440  1688
## 895    0   80  1360  1928
## 896    0  112   900  2067
## 897    0  310   714  2780
## 898   14  380   634  3101
## 899   20  301   749  2896
## 900    0   79   834  1962
## 901    0  101   916  2015
## 902    0  156   739  2297
## 903    0  129   848  2067
## 904    0    0  1440  1688
## 905    0    0  1440  1688
## 906    0    0  1440  1688
## 907    0    0  1440  1688
## 908    0    0  1440  1688
## 909    0    0    48    57
## 910    7  312  1036  3921
## 911   18  216  1098  3566
## 912   13  298  1061  3793
## 913    1  281  1052  3934
## 914   29  429   888  4547
## 915   15  307  1060  3545
## 916    5  191  1215  2761
## 917   13  214  1131  3676
## 918   19  225  1123  3679
## 919   13  226  1119  3659
## 920    2  236  1141  3427
## 921    6  300  1032  3891
## 922    1  227  1148  3455
## 923    8  218  1101  3802
## 924    3  258  1157  2860
## 925    8  235  1104  3808
## 926    8  231  1143  3060
## 927    5  210  1207  2698
## 928    4  223  1089  4398
## 929   12  166  1226  2786
```

```
## 930                    0                   105              1335     2189
## 931                    3                   229              1189     2817
## 932                    8                   212              1154     3477
## 933                   15                   188              1170     3052
## 934                   17                   232              1095     4015
## 935                   28                   271              1036     4142
## 936                    4                   245              1174     2847
## 937                   19                   217              1131     3710
## 938                   11                   224              1187     2832
## 939                   12                   213              1127     3832
## 940                    1                   137               770     1849
```

```
##            id             sleep_day total_sleep_records total_minutes_asleep
## 1   1503960366 4/12/2016 12:00:00 AM                   1                  327
## 2   1503960366 4/13/2016 12:00:00 AM                   2                  384
## 3   1503960366 4/15/2016 12:00:00 AM                   1                  412
## 4   1503960366 4/16/2016 12:00:00 AM                   2                  340
## 5   1503960366 4/17/2016 12:00:00 AM                   1                  700
## 6   1503960366 4/19/2016 12:00:00 AM                   1                  304
## 7   1503960366 4/20/2016 12:00:00 AM                   1                  360
## 8   1503960366 4/21/2016 12:00:00 AM                   1                  325
## 9   1503960366 4/23/2016 12:00:00 AM                   1                  361
## 10  1503960366 4/24/2016 12:00:00 AM                   1                  430
## 11  1503960366 4/25/2016 12:00:00 AM                   1                  277
## 12  1503960366 4/26/2016 12:00:00 AM                   1                  245
## 13  1503960366 4/28/2016 12:00:00 AM                   1                  366
## 14  1503960366 4/29/2016 12:00:00 AM                   1                  341
## 15  1503960366 4/30/2016 12:00:00 AM                   1                  404
## 16  1503960366  5/1/2016 12:00:00 AM                   1                  369
## 17  1503960366  5/2/2016 12:00:00 AM                   1                  277
## 18  1503960366  5/3/2016 12:00:00 AM                   1                  273
## 19  1503960366  5/5/2016 12:00:00 AM                   1                  247
## 20  1503960366  5/6/2016 12:00:00 AM                   1                  334
## 21  1503960366  5/7/2016 12:00:00 AM                   1                  331
## 22  1503960366  5/8/2016 12:00:00 AM                   1                  594
## 23  1503960366  5/9/2016 12:00:00 AM                   1                  338
## 24  1503960366 5/10/2016 12:00:00 AM                   1                  383
## 25  1503960366 5/11/2016 12:00:00 AM                   1                  285
## 26  1644430081 4/29/2016 12:00:00 AM                   1                  119
## 27  1644430081 4/30/2016 12:00:00 AM                   1                  124
## 28  1644430081  5/2/2016 12:00:00 AM                   1                  796
## 29  1644430081  5/8/2016 12:00:00 AM                   1                  137
## 30  1844505072 4/15/2016 12:00:00 AM                   1                  644
## 31  1844505072 4/30/2016 12:00:00 AM                   1                  722
## 32  1844505072  5/1/2016 12:00:00 AM                   1                  590
## 33  1927972279 4/12/2016 12:00:00 AM                   3                  750
## 34  1927972279 4/13/2016 12:00:00 AM                   1                  398
## 35  1927972279 4/15/2016 12:00:00 AM                   2                  475
## 36  1927972279 4/26/2016 12:00:00 AM                   1                  296
## 37  1927972279 4/28/2016 12:00:00 AM                   1                  166
## 38  2026352035 4/12/2016 12:00:00 AM                   1                  503
## 39  2026352035 4/13/2016 12:00:00 AM                   1                  531
## 40  2026352035 4/14/2016 12:00:00 AM                   1                  545
## 41  2026352035 4/15/2016 12:00:00 AM                   1                  523
```

```
## 42  2026352035 4/16/2016 12:00:00 AM                1                524
## 43  2026352035 4/17/2016 12:00:00 AM                1                437
## 44  2026352035 4/19/2016 12:00:00 AM                1                498
## 45  2026352035 4/20/2016 12:00:00 AM                1                461
## 46  2026352035 4/21/2016 12:00:00 AM                1                477
## 47  2026352035 4/22/2016 12:00:00 AM                1                520
## 48  2026352035 4/23/2016 12:00:00 AM                1                522
## 49  2026352035 4/24/2016 12:00:00 AM                1                555
## 50  2026352035 4/25/2016 12:00:00 AM                1                506
## 51  2026352035 4/27/2016 12:00:00 AM                1                508
## 52  2026352035 4/28/2016 12:00:00 AM                1                513
## 53  2026352035 4/29/2016 12:00:00 AM                1                490
## 54  2026352035 4/30/2016 12:00:00 AM                1                573
## 55  2026352035  5/1/2016 12:00:00 AM                1                527
## 56  2026352035  5/2/2016 12:00:00 AM                1                511
## 57  2026352035  5/4/2016 12:00:00 AM                1                538
## 58  2026352035  5/5/2016 12:00:00 AM                1                468
## 59  2026352035  5/6/2016 12:00:00 AM                1                524
## 60  2026352035  5/7/2016 12:00:00 AM                1                511
## 61  2026352035  5/8/2016 12:00:00 AM                1                541
## 62  2026352035  5/9/2016 12:00:00 AM                1                531
## 63  2026352035 5/10/2016 12:00:00 AM                1                357
## 64  2026352035 5/11/2016 12:00:00 AM                1                523
## 65  2026352035 5/12/2016 12:00:00 AM                1                456
## 66  2320127002 4/23/2016 12:00:00 AM                1                 61
## 67  2347167796 4/13/2016 12:00:00 AM                1                467
## 68  2347167796 4/14/2016 12:00:00 AM                1                445
## 69  2347167796 4/15/2016 12:00:00 AM                1                452
## 70  2347167796 4/17/2016 12:00:00 AM                1                556
## 71  2347167796 4/18/2016 12:00:00 AM                1                500
## 72  2347167796 4/19/2016 12:00:00 AM                1                465
## 73  2347167796 4/21/2016 12:00:00 AM                1                460
## 74  2347167796 4/22/2016 12:00:00 AM                1                405
## 75  2347167796 4/23/2016 12:00:00 AM                1                374
## 76  2347167796 4/24/2016 12:00:00 AM                1                442
## 77  2347167796 4/25/2016 12:00:00 AM                1                433
## 78  2347167796 4/26/2016 12:00:00 AM                1                436
## 79  2347167796 4/27/2016 12:00:00 AM                1                448
## 80  2347167796 4/28/2016 12:00:00 AM                1                408
## 81  2347167796 4/29/2016 12:00:00 AM                1                411
## 82  3977333714 4/12/2016 12:00:00 AM                1                274
## 83  3977333714 4/13/2016 12:00:00 AM                2                295
## 84  3977333714 4/14/2016 12:00:00 AM                1                291
## 85  3977333714 4/15/2016 12:00:00 AM                1                424
## 86  3977333714 4/16/2016 12:00:00 AM                1                283
## 87  3977333714 4/17/2016 12:00:00 AM                1                381
## 88  3977333714 4/18/2016 12:00:00 AM                2                412
## 89  3977333714 4/19/2016 12:00:00 AM                1                219
## 90  3977333714 4/20/2016 12:00:00 AM                2                152
## 91  3977333714 4/21/2016 12:00:00 AM                1                332
## 92  3977333714 4/22/2016 12:00:00 AM                1                355
## 93  3977333714 4/23/2016 12:00:00 AM                1                235
## 94  3977333714 4/24/2016 12:00:00 AM                1                310
## 95  3977333714 4/25/2016 12:00:00 AM                1                262
```

```
## 96  3977333714 4/26/2016 12:00:00 AM                1                250
## 97  3977333714 4/27/2016 12:00:00 AM                1                349
## 98  3977333714 4/28/2016 12:00:00 AM                1                261
## 99  3977333714 4/29/2016 12:00:00 AM                1                333
## 100 3977333714 4/30/2016 12:00:00 AM                1                237
## 101 3977333714  5/1/2016 12:00:00 AM                1                383
## 102 3977333714  5/2/2016 12:00:00 AM                1                230
## 103 3977333714  5/3/2016 12:00:00 AM                1                292
## 104 3977333714  5/4/2016 12:00:00 AM                1                213
## 105 3977333714  5/5/2016 12:00:00 AM                1                318
## 106 3977333714  5/6/2016 12:00:00 AM                1                323
## 107 3977333714  5/7/2016 12:00:00 AM                1                237
## 108 3977333714  5/8/2016 12:00:00 AM                2                259
## 109 3977333714 5/10/2016 12:00:00 AM                1                312
## 110 4020332650 4/12/2016 12:00:00 AM                1                501
## 111 4020332650 4/16/2016 12:00:00 AM                1                 77
## 112 4020332650  5/3/2016 12:00:00 AM                1                322
## 113 4020332650  5/4/2016 12:00:00 AM                1                478
## 114 4020332650  5/5/2016 12:00:00 AM                1                226
## 115 4020332650  5/6/2016 12:00:00 AM                1                385
## 116 4020332650  5/8/2016 12:00:00 AM                1                364
## 117 4020332650 5/10/2016 12:00:00 AM                1                442
## 118 4319703577 4/14/2016 12:00:00 AM                1                535
## 119 4319703577 4/15/2016 12:00:00 AM                1                465
## 120 4319703577 4/16/2016 12:00:00 AM                1                506
## 121 4319703577 4/18/2016 12:00:00 AM                1                515
## 122 4319703577 4/19/2016 12:00:00 AM                2                461
## 123 4319703577 4/20/2016 12:00:00 AM                1                523
## 124 4319703577 4/21/2016 12:00:00 AM                1                 59
## 125 4319703577 4/22/2016 12:00:00 AM                1                533
## 126 4319703577 4/23/2016 12:00:00 AM                1                692
## 127 4319703577 4/24/2016 12:00:00 AM                1                467
## 128 4319703577 4/25/2016 12:00:00 AM                1                488
## 129 4319703577 4/26/2016 12:00:00 AM                1                505
## 130 4319703577 4/27/2016 12:00:00 AM                1                286
## 131 4319703577 4/28/2016 12:00:00 AM                1                497
## 132 4319703577 4/29/2016 12:00:00 AM                1                523
## 133 4319703577 4/30/2016 12:00:00 AM                1                490
## 134 4319703577  5/1/2016 12:00:00 AM                1                484
## 135 4319703577  5/2/2016 12:00:00 AM                1                478
## 136 4319703577  5/3/2016 12:00:00 AM                1                474
## 137 4319703577  5/6/2016 12:00:00 AM                1                450
## 138 4319703577  5/7/2016 12:00:00 AM                1                507
## 139 4319703577  5/8/2016 12:00:00 AM                1                602
## 140 4319703577  5/9/2016 12:00:00 AM                1                535
## 141 4319703577 5/10/2016 12:00:00 AM                1                487
## 142 4319703577 5/11/2016 12:00:00 AM                1                529
## 143 4319703577 5/12/2016 12:00:00 AM                1                302
## 144 4388161847 4/15/2016 12:00:00 AM                1                499
## 145 4388161847 4/16/2016 12:00:00 AM                2                426
## 146 4388161847 4/17/2016 12:00:00 AM                2                619
## 147 4388161847 4/18/2016 12:00:00 AM                1                 99
## 148 4388161847 4/19/2016 12:00:00 AM                1                329
## 149 4388161847 4/20/2016 12:00:00 AM                1                421
```

```
## 150 4388161847 4/21/2016 12:00:00 AM                1                442
## 151 4388161847 4/22/2016 12:00:00 AM                1                 82
## 152 4388161847 4/23/2016 12:00:00 AM                1                478
## 153 4388161847 4/24/2016 12:00:00 AM                3                552
## 154 4388161847 4/26/2016 12:00:00 AM                1                319
## 155 4388161847 4/27/2016 12:00:00 AM                1                439
## 156 4388161847 4/28/2016 12:00:00 AM                1                428
## 157 4388161847 4/30/2016 12:00:00 AM                2                409
## 158 4388161847  5/1/2016 12:00:00 AM                1                547
## 159 4388161847  5/2/2016 12:00:00 AM                2                368
## 160 4388161847  5/4/2016 12:00:00 AM                1                390
## 161 4388161847  5/5/2016 12:00:00 AM                1                471
## 162 4388161847  5/7/2016 12:00:00 AM                1                472
## 163 4388161847  5/8/2016 12:00:00 AM                2                529
## 164 4388161847  5/9/2016 12:00:00 AM                1                 62
## 165 4388161847 5/10/2016 12:00:00 AM                1                354
## 166 4388161847 5/11/2016 12:00:00 AM                1                469
## 167 4445114986 4/12/2016 12:00:00 AM                2                429
## 168 4445114986 4/13/2016 12:00:00 AM                2                370
## 169 4445114986 4/14/2016 12:00:00 AM                1                441
## 170 4445114986 4/15/2016 12:00:00 AM                2                337
## 171 4445114986 4/16/2016 12:00:00 AM                1                462
## 172 4445114986 4/17/2016 12:00:00 AM                1                 98
## 173 4445114986 4/19/2016 12:00:00 AM                2                388
## 174 4445114986 4/20/2016 12:00:00 AM                1                439
## 175 4445114986 4/21/2016 12:00:00 AM                1                436
## 176 4445114986 4/22/2016 12:00:00 AM                1                388
## 177 4445114986 4/25/2016 12:00:00 AM                1                328
## 178 4445114986 4/26/2016 12:00:00 AM                2                353
## 179 4445114986 4/27/2016 12:00:00 AM                1                332
## 180 4445114986 4/28/2016 12:00:00 AM                1                419
## 181 4445114986 4/29/2016 12:00:00 AM                1                106
## 182 4445114986 4/30/2016 12:00:00 AM                1                322
## 183 4445114986  5/1/2016 12:00:00 AM                2                439
## 184 4445114986  5/2/2016 12:00:00 AM                1                502
## 185 4445114986  5/3/2016 12:00:00 AM                2                417
## 186 4445114986  5/4/2016 12:00:00 AM                2                337
## 187 4445114986  5/5/2016 12:00:00 AM                2                462
## 188 4445114986  5/6/2016 12:00:00 AM                2                374
## 189 4445114986  5/7/2016 12:00:00 AM                2                401
## 190 4445114986  5/8/2016 12:00:00 AM                1                361
## 191 4445114986  5/9/2016 12:00:00 AM                1                457
## 192 4445114986 5/10/2016 12:00:00 AM                1                405
## 193 4445114986 5/11/2016 12:00:00 AM                1                499
## 194 4445114986 5/12/2016 12:00:00 AM                1                483
## 195 4558609924 4/21/2016 12:00:00 AM                1                126
## 196 4558609924 4/26/2016 12:00:00 AM                1                103
## 197 4558609924 4/29/2016 12:00:00 AM                1                171
## 198 4558609924  5/1/2016 12:00:00 AM                1                115
## 199 4558609924  5/8/2016 12:00:00 AM                1                123
## 200 4702921684 4/12/2016 12:00:00 AM                1                425
## 201 4702921684 4/13/2016 12:00:00 AM                2                400
## 202 4702921684 4/14/2016 12:00:00 AM                1                384
## 203 4702921684 4/15/2016 12:00:00 AM                1                253
```

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## 204 4702921684 4/16/2016 12:00:00 AM                2                382
## 205 4702921684 4/17/2016 12:00:00 AM                1                591
## 206 4702921684 4/18/2016 12:00:00 AM                1                293
## 207 4702921684 4/19/2016 12:00:00 AM                1                457
## 208 4702921684 4/20/2016 12:00:00 AM                1                454
## 209 4702921684 4/21/2016 12:00:00 AM                1                425
## 210 4702921684 4/23/2016 12:00:00 AM                1                465
## 211 4702921684 4/24/2016 12:00:00 AM                1                480
## 212 4702921684 4/25/2016 12:00:00 AM                1                370
## 213 4702921684 4/26/2016 12:00:00 AM                1                421
## 214 4702921684 4/27/2016 12:00:00 AM                1                432
## 215 4702921684 4/28/2016 12:00:00 AM                1                442
## 216 4702921684 4/29/2016 12:00:00 AM                1                433
## 217 4702921684 4/30/2016 12:00:00 AM                1                479
## 218 4702921684  5/3/2016 12:00:00 AM                1                327
## 219 4702921684  5/4/2016 12:00:00 AM                1                412
## 220 4702921684  5/5/2016 12:00:00 AM                1                414
## 221 4702921684  5/6/2016 12:00:00 AM                1                404
## 222 4702921684  5/7/2016 12:00:00 AM                1                520
## 223 4702921684  5/9/2016 12:00:00 AM                1                435
## 224 4702921684 5/10/2016 12:00:00 AM                1                416
## 225 4702921684 5/11/2016 12:00:00 AM                1                354
## 226 4702921684 5/12/2016 12:00:00 AM                1                404
## 227 5553957443 4/12/2016 12:00:00 AM                1                441
## 228 5553957443 4/13/2016 12:00:00 AM                2                455
## 229 5553957443 4/14/2016 12:00:00 AM                1                357
## 230 5553957443 4/15/2016 12:00:00 AM                1                377
## 231 5553957443 4/16/2016 12:00:00 AM                2                651
## 232 5553957443 4/17/2016 12:00:00 AM                1                350
## 233 5553957443 4/18/2016 12:00:00 AM                2                520
## 234 5553957443 4/19/2016 12:00:00 AM                1                357
## 235 5553957443 4/20/2016 12:00:00 AM                1                658
## 236 5553957443 4/21/2016 12:00:00 AM                1                399
## 237 5553957443 4/22/2016 12:00:00 AM                1                322
## 238 5553957443 4/23/2016 12:00:00 AM                2                631
## 239 5553957443 4/24/2016 12:00:00 AM                2                553
## 240 5553957443 4/25/2016 12:00:00 AM                1                433
## 241 5553957443 4/26/2016 12:00:00 AM                1                412
## 242 5553957443 4/27/2016 12:00:00 AM                1                347
## 243 5553957443 4/28/2016 12:00:00 AM                1                421
## 244 5553957443 4/29/2016 12:00:00 AM                1                450
## 245 5553957443 4/30/2016 12:00:00 AM                2                775
## 246 5553957443  5/1/2016 12:00:00 AM                2                622
## 247 5553957443  5/2/2016 12:00:00 AM                1                409
## 248 5553957443  5/3/2016 12:00:00 AM                1                380
## 249 5553957443  5/4/2016 12:00:00 AM                1                447
## 250 5553957443  5/5/2016 12:00:00 AM                1                419
## 251 5553957443  5/6/2016 12:00:00 AM                1                400
## 252 5553957443  5/7/2016 12:00:00 AM                1                442
## 253 5553957443  5/8/2016 12:00:00 AM                1                568
## 254 5553957443  5/9/2016 12:00:00 AM                1                453
## 255 5553957443 5/10/2016 12:00:00 AM                1                418
## 256 5553957443 5/11/2016 12:00:00 AM                1                463
## 257 5553957443 5/12/2016 12:00:00 AM                1                438
```

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## 258 5577150313 4/12/2016 12:00:00 AM                1                419
## 259 5577150313 4/13/2016 12:00:00 AM                1                432
## 260 5577150313 4/14/2016 12:00:00 AM                1                477
## 261 5577150313 4/15/2016 12:00:00 AM                1                392
## 262 5577150313 4/16/2016 12:00:00 AM                1                406
## 263 5577150313 4/17/2016 12:00:00 AM                1                549
## 264 5577150313 4/18/2016 12:00:00 AM                1                527
## 265 5577150313 4/19/2016 12:00:00 AM                1                449
## 266 5577150313 4/20/2016 12:00:00 AM                1                447
## 267 5577150313 4/21/2016 12:00:00 AM                1                414
## 268 5577150313 4/22/2016 12:00:00 AM                1                338
## 269 5577150313 4/23/2016 12:00:00 AM                1                384
## 270 5577150313 4/24/2016 12:00:00 AM                1                543
## 271 5577150313 4/25/2016 12:00:00 AM                1                421
## 272 5577150313 4/26/2016 12:00:00 AM                1                354
## 273 5577150313 4/27/2016 12:00:00 AM                1                424
## 274 5577150313 4/28/2016 12:00:00 AM                1                361
## 275 5577150313 4/29/2016 12:00:00 AM                1                459
## 276 5577150313 4/30/2016 12:00:00 AM                1                412
## 277 5577150313  5/1/2016 12:00:00 AM                1                379
## 278 5577150313  5/2/2016 12:00:00 AM                2                525
## 279 5577150313  5/3/2016 12:00:00 AM                1                508
## 280 5577150313  5/4/2016 12:00:00 AM                1                603
## 281 5577150313  5/5/2016 12:00:00 AM                1                 74
## 282 5577150313 5/10/2016 12:00:00 AM                1                504
## 283 5577150313 5/11/2016 12:00:00 AM                1                431
## 284 6117666160 4/16/2016 12:00:00 AM                1                380
## 285 6117666160 4/17/2016 12:00:00 AM                2                336
## 286 6117666160 4/18/2016 12:00:00 AM                2                493
## 287 6117666160 4/19/2016 12:00:00 AM                1                465
## 288 6117666160 4/20/2016 12:00:00 AM                1                474
## 289 6117666160 4/21/2016 12:00:00 AM                1                508
## 290 6117666160 4/22/2016 12:00:00 AM                1                480
## 291 6117666160 4/23/2016 12:00:00 AM                1                492
## 292 6117666160 4/24/2016 12:00:00 AM                1                353
## 293 6117666160 4/27/2016 12:00:00 AM                1                542
## 294 6117666160 4/28/2016 12:00:00 AM                1                393
## 295 6117666160 4/29/2016 12:00:00 AM                1                600
## 296 6117666160  5/1/2016 12:00:00 AM                1                507
## 297 6117666160  5/5/2016 12:00:00 AM                1                392
## 298 6117666160  5/6/2016 12:00:00 AM                2                658
## 299 6117666160  5/7/2016 12:00:00 AM                2                498
## 300 6117666160  5/8/2016 12:00:00 AM                1                555
## 301 6117666160  5/9/2016 12:00:00 AM                1                492
## 302 6775888955 4/13/2016 12:00:00 AM                1                235
## 303 6775888955 4/14/2016 12:00:00 AM                1                423
## 304 6775888955 4/15/2016 12:00:00 AM                1                391
## 305 6962181067 4/12/2016 12:00:00 AM                1                366
## 306 6962181067 4/13/2016 12:00:00 AM                3                630
## 307 6962181067 4/14/2016 12:00:00 AM                2                508
## 308 6962181067 4/15/2016 12:00:00 AM                1                370
## 309 6962181067 4/16/2016 12:00:00 AM                1                357
## 310 6962181067 4/17/2016 12:00:00 AM                1                427
## 311 6962181067 4/18/2016 12:00:00 AM                1                442
```

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## 312 6962181067 4/19/2016 12:00:00 AM                1                476
## 313 6962181067 4/20/2016 12:00:00 AM                1                418
## 314 6962181067 4/21/2016 12:00:00 AM                1                451
## 315 6962181067 4/22/2016 12:00:00 AM                1                425
## 316 6962181067 4/23/2016 12:00:00 AM                1                528
## 317 6962181067 4/24/2016 12:00:00 AM                1                511
## 318 6962181067 4/25/2016 12:00:00 AM                1                400
## 319 6962181067 4/26/2016 12:00:00 AM                1                441
## 320 6962181067 4/27/2016 12:00:00 AM                1                455
## 321 6962181067 4/28/2016 12:00:00 AM                1                440
## 322 6962181067 4/29/2016 12:00:00 AM                1                433
## 323 6962181067 4/30/2016 12:00:00 AM                1                422
## 324 6962181067  5/1/2016 12:00:00 AM                1                411
## 325 6962181067  5/2/2016 12:00:00 AM                1                466
## 326 6962181067  5/3/2016 12:00:00 AM                1                394
## 327 6962181067  5/4/2016 12:00:00 AM                1                442
## 328 6962181067  5/5/2016 12:00:00 AM                1                467
## 329 6962181067  5/6/2016 12:00:00 AM                1                443
## 330 6962181067  5/7/2016 12:00:00 AM                1                298
## 331 6962181067  5/8/2016 12:00:00 AM                1                541
## 332 6962181067  5/9/2016 12:00:00 AM                1                489
## 333 6962181067 5/10/2016 12:00:00 AM                1                469
## 334 6962181067 5/11/2016 12:00:00 AM                1                452
## 335 6962181067 5/12/2016 12:00:00 AM                1                516
## 336 7007744171 4/16/2016 12:00:00 AM                1                 79
## 337 7007744171  5/1/2016 12:00:00 AM                1                 58
## 338 7086361926 4/12/2016 12:00:00 AM                1                514
## 339 7086361926 4/13/2016 12:00:00 AM                1                451
## 340 7086361926 4/14/2016 12:00:00 AM                1                472
## 341 7086361926 4/15/2016 12:00:00 AM                1                377
## 342 7086361926 4/19/2016 12:00:00 AM                1                472
## 343 7086361926 4/20/2016 12:00:00 AM                1                492
## 344 7086361926 4/21/2016 12:00:00 AM                1                390
## 345 7086361926 4/22/2016 12:00:00 AM                1                428
## 346 7086361926 4/24/2016 12:00:00 AM                1                681
## 347 7086361926 4/25/2016 12:00:00 AM                1                446
## 348 7086361926 4/26/2016 12:00:00 AM                1                485
## 349 7086361926 4/27/2016 12:00:00 AM                1                469
## 350 7086361926 4/28/2016 12:00:00 AM                1                354
## 351 7086361926 4/30/2016 12:00:00 AM                1                485
## 352 7086361926  5/1/2016 12:00:00 AM                1                388
## 353 7086361926  5/2/2016 12:00:00 AM                1                440
## 354 7086361926  5/3/2016 12:00:00 AM                1                456
## 355 7086361926  5/4/2016 12:00:00 AM                1                420
## 356 7086361926  5/6/2016 12:00:00 AM                1                322
## 357 7086361926  5/7/2016 12:00:00 AM                1                530
## 358 7086361926  5/8/2016 12:00:00 AM                1                481
## 359 7086361926  5/9/2016 12:00:00 AM                1                427
## 360 7086361926 5/11/2016 12:00:00 AM                1                451
## 361 7086361926 5/12/2016 12:00:00 AM                1                444
## 362 8053475328 4/20/2016 12:00:00 AM                1                486
## 363 8053475328 4/23/2016 12:00:00 AM                1                331
## 364 8053475328  5/7/2016 12:00:00 AM                1                 74
## 365 8378563200 4/12/2016 12:00:00 AM                1                338
```

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## 366 8378563200 4/13/2016 12:00:00 AM                2                447
## 367 8378563200 4/14/2016 12:00:00 AM                1                424
## 368 8378563200 4/15/2016 12:00:00 AM                1                513
## 369 8378563200 4/16/2016 12:00:00 AM                2                611
## 370 8378563200 4/17/2016 12:00:00 AM                2                525
## 371 8378563200 4/18/2016 12:00:00 AM                1                398
## 372 8378563200 4/19/2016 12:00:00 AM                1                387
## 373 8378563200 4/20/2016 12:00:00 AM                1                381
## 374 8378563200 4/21/2016 12:00:00 AM                1                396
## 375 8378563200 4/22/2016 12:00:00 AM                1                441
## 376 8378563200 4/23/2016 12:00:00 AM                1                565
## 377 8378563200 4/24/2016 12:00:00 AM                1                458
## 378 8378563200 4/25/2016 12:00:00 AM                1                388
## 379 8378563200 4/26/2016 12:00:00 AM                1                550
## 380 8378563200 4/27/2016 12:00:00 AM                1                531
## 381 8378563200 4/28/2016 12:00:00 AM                1                506
## 382 8378563200 4/29/2016 12:00:00 AM                1                527
## 383 8378563200 4/30/2016 12:00:00 AM                1                468
## 384 8378563200  5/1/2016 12:00:00 AM                1                475
## 385 8378563200  5/2/2016 12:00:00 AM                1                351
## 386 8378563200  5/3/2016 12:00:00 AM                1                405
## 387 8378563200  5/4/2016 12:00:00 AM                1                441
## 388 8378563200  5/5/2016 12:00:00 AM                1                381
## 389 8378563200  5/6/2016 12:00:00 AM                1                323
## 390 8378563200  5/7/2016 12:00:00 AM                2                459
## 391 8378563200  5/8/2016 12:00:00 AM                1                545
## 392 8378563200  5/9/2016 12:00:00 AM                1                359
## 393 8378563200 5/10/2016 12:00:00 AM                1                342
## 394 8378563200 5/11/2016 12:00:00 AM                1                368
## 395 8378563200 5/12/2016 12:00:00 AM                1                496
## 396 8792009665 4/12/2016 12:00:00 AM                1                458
## 397 8792009665 4/13/2016 12:00:00 AM                1                531
## 398 8792009665 4/14/2016 12:00:00 AM                1                486
## 399 8792009665 4/15/2016 12:00:00 AM                1                363
## 400 8792009665 4/20/2016 12:00:00 AM                1                528
## 401 8792009665 4/22/2016 12:00:00 AM                1                391
## 402 8792009665 4/23/2016 12:00:00 AM                1                339
## 403 8792009665 4/27/2016 12:00:00 AM                1                423
## 404 8792009665 4/28/2016 12:00:00 AM                1                402
## 405 8792009665 4/29/2016 12:00:00 AM                1                398
## 406 8792009665 4/30/2016 12:00:00 AM                1                343
## 407 8792009665  5/1/2016 12:00:00 AM                1                503
## 408 8792009665  5/2/2016 12:00:00 AM                1                415
## 409 8792009665  5/3/2016 12:00:00 AM                1                516
## 410 8792009665  5/4/2016 12:00:00 AM                1                439
##     total_time_in_bed
## 1                 346
## 2                 407
## 3                 442
## 4                 367
## 5                 712
## 6                 320
## 7                 377
## 8                 364
```

```
## 9                384
## 10               449
## 11               323
## 12               274
## 13               393
## 14               354
## 15               425
## 16               396
## 17               309
## 18               296
## 19               264
## 20               367
## 21               349
## 22               611
## 23               342
## 24               403
## 25               306
## 26               127
## 27               142
## 28               961
## 29               154
## 30               961
## 31               961
## 32               961
## 33               775
## 34               422
## 35               499
## 36               315
## 37               178
## 38               546
## 39               565
## 40               568
## 41               573
## 42               567
## 43               498
## 44               540
## 45               510
## 46               514
## 47               545
## 48               554
## 49               591
## 50               531
## 51               545
## 52               545
## 53               510
## 54               607
## 55               546
## 56               543
## 57               560
## 58               485
## 59               548
## 60               521
## 61               568
## 62               556
```

```
## 63              380
## 64              553
## 65              485
## 66               69
## 67              531
## 68              489
## 69              504
## 70              602
## 71              557
## 72              514
## 73              484
## 74              461
## 75              386
## 76              459
## 77              471
## 78              490
## 79              499
## 80              450
## 81              473
## 82              469
## 83              456
## 84              397
## 85              556
## 86              510
## 87              566
## 88              522
## 89              395
## 90              305
## 91              512
## 92              476
## 93              372
## 94              526
## 95              467
## 96              371
## 97              540
## 98              423
## 99              478
## 100             382
## 101             626
## 102             384
## 103             500
## 104             336
## 105             480
## 106             512
## 107             443
## 108             456
## 109             452
## 110             541
## 111              77
## 112             332
## 113             536
## 114             248
## 115             408
## 116             402
```

```
## 117              494
## 118              557
## 119              491
## 120              522
## 121              551
## 122              498
## 123              543
## 124               65
## 125              550
## 126              722
## 127              501
## 128              506
## 129              516
## 130              307
## 131              522
## 132              546
## 133              516
## 134              500
## 135              506
## 136              512
## 137              491
## 138              530
## 139              638
## 140              565
## 141              517
## 142              558
## 143              321
## 144              526
## 145              448
## 146              641
## 147              104
## 148              338
## 149              451
## 150              458
## 151               85
## 152              501
## 153              595
## 154              346
## 155              500
## 156              458
## 157              430
## 158              597
## 159              376
## 160              414
## 161              495
## 162              496
## 163              541
## 164               65
## 165              375
## 166              494
## 167              457
## 168              406
## 169              492
## 170              379
```

```
## 171              499
## 172              107
## 173              424
## 174              462
## 175              469
## 176              417
## 177              345
## 178              391
## 179              374
## 180              442
## 181              108
## 182              353
## 183              459
## 184              542
## 185              450
## 186              363
## 187              513
## 188              402
## 189              436
## 190              391
## 191              533
## 192              426
## 193              530
## 194              501
## 195              137
## 196              121
## 197              179
## 198              129
## 199              134
## 200              439
## 201              430
## 202              415
## 203              257
## 204              406
## 205              612
## 206              312
## 207              487
## 208              468
## 209              434
## 210              475
## 211              506
## 212              380
## 213              429
## 214              449
## 215              461
## 216              447
## 217              501
## 218              373
## 219              434
## 220              428
## 221              449
## 222              543
## 223              458
## 224              431
```

```
## 225              366
## 226              442
## 227              464
## 228              488
## 229              418
## 230              409
## 231              686
## 232              402
## 233              541
## 234              410
## 235              678
## 236              431
## 237              353
## 238              725
## 239              640
## 240              468
## 241              453
## 242              391
## 243              457
## 244              495
## 245              843
## 246              686
## 247              471
## 248              429
## 249              470
## 250              464
## 251              434
## 252              470
## 253              608
## 254              494
## 255              443
## 256              486
## 257              475
## 258              438
## 259              458
## 260              497
## 261              413
## 262              445
## 263              583
## 264              553
## 265              465
## 266              480
## 267              437
## 268              366
## 269              402
## 270              615
## 271              461
## 272              377
## 273              452
## 274              372
## 275              485
## 276              433
## 277              398
## 278              553
```

```
## 279              543
## 280              634
## 281               78
## 282              562
## 283              476
## 284              398
## 285              350
## 286              510
## 287              492
## 288              502
## 289              550
## 290              546
## 291              539
## 292              367
## 293              557
## 294              416
## 295              636
## 296              575
## 297              415
## 298              698
## 299              507
## 300              603
## 301              522
## 302              260
## 303              441
## 304              406
## 305              387
## 306              679
## 307              535
## 308              386
## 309              366
## 310              446
## 311              458
## 312              535
## 313              424
## 314              457
## 315              435
## 316              546
## 317              514
## 318              415
## 319              446
## 320              467
## 321              453
## 322              447
## 323              424
## 324              426
## 325              482
## 326              418
## 327              455
## 328              491
## 329              462
## 330              334
## 331              569
## 332              497
```

```
## 333              481
## 334              480
## 335              535
## 336               82
## 337               61
## 338              525
## 339              465
## 340              476
## 341              386
## 342              483
## 343              502
## 344              411
## 345              448
## 346              704
## 347              447
## 348              500
## 349              479
## 350              367
## 351              489
## 352              407
## 353              459
## 354              461
## 355              436
## 356              333
## 357              548
## 358              510
## 359              438
## 360              463
## 361              457
## 362              493
## 363              337
## 364               75
## 365              356
## 366              487
## 367              455
## 368              533
## 369              689
## 370              591
## 371              451
## 372              421
## 373              409
## 374              417
## 375              469
## 376              591
## 377              492
## 378              402
## 379              584
## 380              600
## 381              556
## 382              562
## 383              555
## 384              539
## 385              385
## 386              429
```

```
## 387               477
## 388               417
## 389               355
## 390               513
## 391               606
## 392               399
## 393               391
## 394               387
## 395               546
## 396               493
## 397               552
## 398               503
## 399               377
## 400               547
## 401               407
## 402               360
## 403               428
## 404               416
## 405               406
## 406               360
## 407               527
## 408               423
## 409               545
## 410               463
```

Date Formatting We have to format our date columns into the proper format, because R automatically imports and converts date values into strings. So we have to then convert said columns back to the proper format.

```
# activity
daily_activity <- daily_activity %>%
  rename(date = activitydate) %>%
  mutate(date = as_date(date, format = "%m/%d/%Y"))
```

```
# sleep
sleep_day <- sleep_day %>%
  rename(date = sleepday) %>%
  mutate(date = as_date(date,format ="%m/%d/%Y %I:%M:%S %p" , tz=Sys.timezone()))
```

```
## Warning: `tz` argument is ignored by `as_date()`
```

We then check to confirm that the date column has been converted.

```
head(daily_activity)
```

```
##           id       date totalsteps totaldistance trackerdistance
## 1 1503960366 2016-04-12      13162          8.50            8.50
## 2 1503960366 2016-04-13      10735          6.97            6.97
## 3 1503960366 2016-04-14      10460          6.74            6.74
## 4 1503960366 2016-04-15       9762          6.28            6.28
## 5 1503960366 2016-04-16      12669          8.16            8.16
## 6 1503960366 2016-04-17       9705          6.48            6.48
##   loggedactivitiesdistance veryactivedistance moderatelyactivedistance
## 1                        0              1.88                      0.55
## 2                        0              1.57                      0.69
## 3                        0              2.44                      0.40
```

```
## 4                        0              2.14                     1.26
## 5                        0              2.71                     0.41
## 6                        0              3.19                     0.78
##   lightactivedistance sedentaryactivedistance veryactiveminutes
## 1                6.06                       0                25
## 2                4.71                       0                21
## 3                3.91                       0                30
## 4                2.83                       0                29
## 5                5.04                       0                36
## 6                2.51                       0                38
##   fairlyactiveminutes lightlyactiveminutes sedentaryminutes calories
## 1                  13                  328              728     1985
## 2                  19                  217              776     1797
## 3                  11                  181             1218     1776
## 4                  34                  209              726     1745
## 5                  10                  221              773     1863
## 6                  20                  164              539     1728
```

```
str(daily_activity)
```

```
## 'data.frame':    940 obs. of  15 variables:
##  $ id                       : num  1.5e+09 1.5e+09 1.5e+09 1.5e+09 1.5e+09 ...
##  $ date                     : Date, format: "2016-04-12" "2016-04-13" ...
##  $ totalsteps               : int  13162 10735 10460 9762 12669 9705 13019 15506 10544 9819 ...
##  $ totaldistance            : num  8.5 6.97 6.74 6.28 8.16 ...
##  $ trackerdistance          : num  8.5 6.97 6.74 6.28 8.16 ...
##  $ loggedactivitiesdistance: num  0 0 0 0 0 0 0 0 0 0 ...
##  $ veryactivedistance       : num  1.88 1.57 2.44 2.14 2.71 ...
##  $ moderatelyactivedistance: num  0.55 0.69 0.4 1.26 0.41 ...
##  $ lightactivedistance      : num  6.06 4.71 3.91 2.83 5.04 ...
##  $ sedentaryactivedistance : num  0 0 0 0 0 0 0 0 0 0 ...
##  $ veryactiveminutes        : int  25 21 30 29 36 38 42 50 28 19 ...
##  $ fairlyactiveminutes      : int  13 19 11 34 10 20 16 31 12 8 ...
##  $ lightlyactiveminutes     : int  328 217 181 209 221 164 233 264 205 211 ...
##  $ sedentaryminutes         : int  728 776 1218 726 773 539 1149 775 818 838 ...
##  $ calories                 : int  1985 1797 1776 1745 1863 1728 1921 2035 1786 1775 ...
```

```
head(sleep_day)
```

```
##           id       date totalsleeprecords totalminutesasleep totaltimeinbed
## 1 1503960366 2016-04-12                 1                327            346
## 2 1503960366 2016-04-13                 2                384            407
## 3 1503960366 2016-04-15                 1                412            442
## 4 1503960366 2016-04-16                 2                340            367
## 5 1503960366 2016-04-17                 1                700            712
## 6 1503960366 2016-04-19                 1                304            320
```

```
str(sleep_day)
```

```
## 'data.frame':    410 obs. of  5 variables:
##  $ id                : num  1.5e+09 1.5e+09 1.5e+09 1.5e+09 1.5e+09 ...
##  $ date              : Date, format: "2016-04-12" "2016-04-13" ...
##  $ totalsleeprecords : int  1 2 1 2 1 1 1 1 1 1 ...
##  $ totalminutesasleep: int  327 384 412 340 700 304 360 325 361 430 ...
##  $ totaltimeinbed    : int  346 407 442 367 712 320 377 364 384 449 ...
```

Verifying Dataset Now that our data has been properly formatted and cleaned, we'll need to confirm the number of users in each data frame so that we can determine the usability of our data.

```
n_distinct(daily_activity$id)
```

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

```
n_distinct(sleep_day$id)
```

```
## [1] 24
```

We can see that the sleep data frame contains less unique users than the daily activities data frame. To make both data frames easier to use for analysis and manipulation, we will merge them together. ### *Merging Data*

```
daily_activity_sleep <- merge(daily_activity, sleep_day, by.x = "id", by.y = "id")
glimpse(daily_activity_sleep)
```

```
## Rows: 12,348
## Columns: 19
## $ id                       <dbl> 1503960366, 1503960366, 1503960366, 150396036~
## $ date.x                   <date> 2016-05-07, 2016-05-07, 2016-05-07, 2016-05-~
## $ totalsteps               <int> 11992, 11992, 11992, 11992, 11992, 11992, 119~
## $ totaldistance            <dbl> 7.71, 7.71, 7.71, 7.71, 7.71, 7.71, 7.71, 7.7~
## $ trackerdistance          <dbl> 7.71, 7.71, 7.71, 7.71, 7.71, 7.71, 7.71, 7.7~
## $ loggedactivitiesdistance <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ veryactivedistance       <dbl> 2.46, 2.46, 2.46, 2.46, 2.46, 2.46, 2.46, 2.4~
## $ moderatelyactivedistance <dbl> 2.12, 2.12, 2.12, 2.12, 2.12, 2.12, 2.12, 2.1~
## $ lightactivedistance      <dbl> 3.13, 3.13, 3.13, 3.13, 3.13, 3.13, 3.13, 3.1~
## $ sedentaryactivedistance  <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ veryactiveminutes        <int> 37, 37, 37, 37, 37, 37, 37, 37, 37, 37, 37, 3~
## $ fairlyactiveminutes      <int> 46, 46, 46, 46, 46, 46, 46, 46, 46, 46, 46, 4~
## $ lightlyactiveminutes     <int> 175, 175, 175, 175, 175, 175, 175, 175, 175, ~
## $ sedentaryminutes         <int> 833, 833, 833, 833, 833, 833, 833, 833, 833, ~
## $ calories                 <int> 1821, 1821, 1821, 1821, 1821, 1821, 1821, 182~
## $ date.y                   <date> 2016-04-12, 2016-04-13, 2016-04-15, 2016-04-~
## $ totalsleeprecords        <int> 1, 2, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ~
## $ totalminutesasleep       <int> 327, 384, 412, 340, 700, 304, 360, 325, 361, ~
## $ totaltimeinbed           <int> 346, 407, 442, 367, 712, 320, 377, 364, 384, ~
```

```
head(daily_activity_sleep)
```

```
##           id     date.x totalsteps totaldistance trackerdistance
## 1 1503960366 2016-05-07      11992          7.71            7.71
## 2 1503960366 2016-05-07      11992          7.71            7.71
## 3 1503960366 2016-05-07      11992          7.71            7.71
## 4 1503960366 2016-05-07      11992          7.71            7.71
## 5 1503960366 2016-05-07      11992          7.71            7.71
## 6 1503960366 2016-05-07      11992          7.71            7.71
##   loggedactivitiesdistance veryactivedistance moderatelyactivedistance
## 1                        0               2.46                     2.12
## 2                        0               2.46                     2.12
## 3                        0               2.46                     2.12
## 4                        0               2.46                     2.12
## 5                        0               2.46                     2.12
## 6                        0               2.46                     2.12
##   lightactivedistance sedentaryactivedistance veryactiveminutes
```

```
## 1                3.13                      0               37
## 2                3.13                      0               37
## 3                3.13                      0               37
## 4                3.13                      0               37
## 5                3.13                      0               37
## 6                3.13                      0               37
##   fairlyactiveminutes lightlyactiveminutes sedentaryminutes calories     date.y
## 1                  46                  175              833     1821 2016-04-12
## 2                  46                  175              833     1821 2016-04-13
## 3                  46                  175              833     1821 2016-04-15
## 4                  46                  175              833     1821 2016-04-16
## 5                  46                  175              833     1821 2016-04-17
## 6                  46                  175              833     1821 2016-04-19
##   totalsleeprecords totalminutesasleep totaltimeinbed
## 1                 1                327            346
## 2                 2                384            407
## 3                 1                412            442
## 4                 2                340            367
## 5                 1                700            712
## 6                 1                304            320
```

Now that our data has been verified and formatted, we can begin to work with it.

Phase 5: Analyze

First, we want to get a summary of some of the important values in each dataset before merging.

Summarizing Data

```
# Activity
daily_activity %>%
  select(totalsteps,
         totaldistance,
         sedentaryminutes) %>%
    summary()
```

```
##    totalsteps    totaldistance    sedentaryminutes
##  Min.   :    0   Min.   : 0.000   Min.   :   0.0
##  1st Qu.: 3790   1st Qu.: 2.620   1st Qu.: 729.8
##  Median : 7406   Median : 5.245   Median :1057.5
##  Mean   : 7638   Mean   : 5.490   Mean   : 991.2
##  3rd Qu.:10727   3rd Qu.: 7.713   3rd Qu.:1229.5
##  Max.   :36019   Max.   :28.030   Max.   :1440.0
```

```
# Sleep
sleep_day %>%
  select(totalsleeprecords,
         totalminutesasleep,
         totaltimeinbed) %>%
  summary()
```

```
##  totalsleeprecords totalminutesasleep totaltimeinbed
##  Min.   :1.00      Min.   : 58.0      Min.   : 61.0
##  1st Qu.:1.00      1st Qu.:361.0      1st Qu.:403.8
##  Median :1.00      Median :432.5      Median :463.0
```

```
##  Mean   :1.12      Mean   :419.2      Mean   :458.5
##  3rd Qu.:1.00      3rd Qu.:490.0      3rd Qu.:526.0
##  Max.   :3.00      Max.   :796.0      Max.   :961.0
```

From the summary statistics, we can see that the average distance covered and steps taken, is far off the maximum. We can further group users according to their activity level, so as to be able to correctly determine the average type of user. #### Type of users

```
daily_average <- daily_activity_sleep %>%
  group_by(id) %>%
  summarise (mean_daily_steps = mean(totalsteps), mean_daily_calories = mean(calories), mean_daily_slee

head(daily_average)
```

```
## # A tibble: 6 x 4
##           id mean_daily_steps mean_daily_calories mean_daily_sleep
##        <dbl>            <dbl>               <dbl>            <dbl>
## 1 1503960366           12117.               1816.             360.
## 2 1644430081            7283.               2811.             294
## 3 1844505072            2580.               1573.             652
## 4 1927972279             916.               2173.             417
## 5 2026352035            5567.               1541.             506.
## 6 2320127002            4717.               1724.              61
```

```
user_type <- daily_average %>%
  mutate(user_type = case_when(
    mean_daily_steps < 5000 ~ "sedentary",
    mean_daily_steps >= 5000 & mean_daily_steps < 7499 ~ "lightly active",
    mean_daily_steps >= 7500 & mean_daily_steps < 9999 ~ "fairly active",
    mean_daily_steps >= 10000 ~ "very active"
  ))

head(user_type)
```

```
## # A tibble: 6 x 5
##           id mean_daily_steps mean_daily_calories mean_daily_sleep user_type
##        <dbl>            <dbl>               <dbl>            <dbl> <chr>
## 1 1503960366           12117.               1816.             360. very active
## 2 1644430081            7283.               2811.             294  lightly acti~
## 3 1844505072            2580.               1573.             652  sedentary
## 4 1927972279             916.               2173.             417  sedentary
## 5 2026352035            5567.               1541.             506. lightly acti~
## 6 2320127002            4717.               1724.              61  sedentary
```

We can further determine the percentage of users based on their activity level.

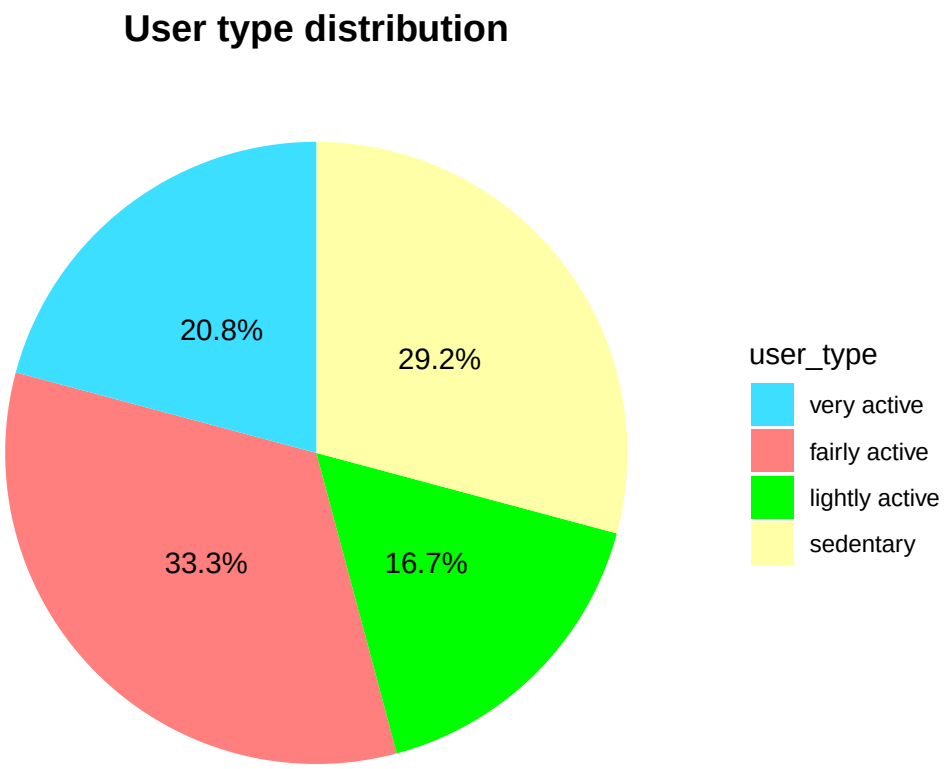
```
user_type_percent <- user_type %>%
  group_by(user_type) %>%
  summarise(total = n()) %>%
  mutate(totals = sum(total)) %>%
  group_by(user_type) %>%
  summarise(total_percent = total / totals) %>%
  mutate(labels = scales::percent(total_percent))

user_type_percent$user_type <- factor(user_type_percent$user_type , levels = c("very active", "fairly a
```

```
head(user_type_percent)
```

```
## # A tibble: 4 x 3
##   user_type      total_percent labels
##   <fct>                  <dbl> <chr>
## 1 fairly active          0.333 33.3%
## 2 lightly active         0.167 16.7%
## 3 sedentary              0.292 29.2%
## 4 very active            0.208 20.8%
```

```
user_type_percent %>%
  ggplot(aes(x="",y=total_percent, fill=user_type)) +
  geom_bar(stat = "identity", width = 1)+
  coord_polar("y", start=0)+
  theme_minimal()+
  theme(axis.title.x= element_blank(),
        axis.title.y = element_blank(),
        panel.border = element_blank(),
        panel.grid = element_blank(),
        axis.ticks = element_blank(),
        axis.text.x = element_blank(),
        plot.title = element_text(hjust = 0.5, size=14, face = "bold")) +
  scale_fill_manual(values = c("#3CDFFF","#FF7F7F", "#00FF00", "#ffffa7")) +
  geom_text(aes(label = labels),
            position = position_stack(vjust = 0.5))+
  labs(title="User type distribution")
```



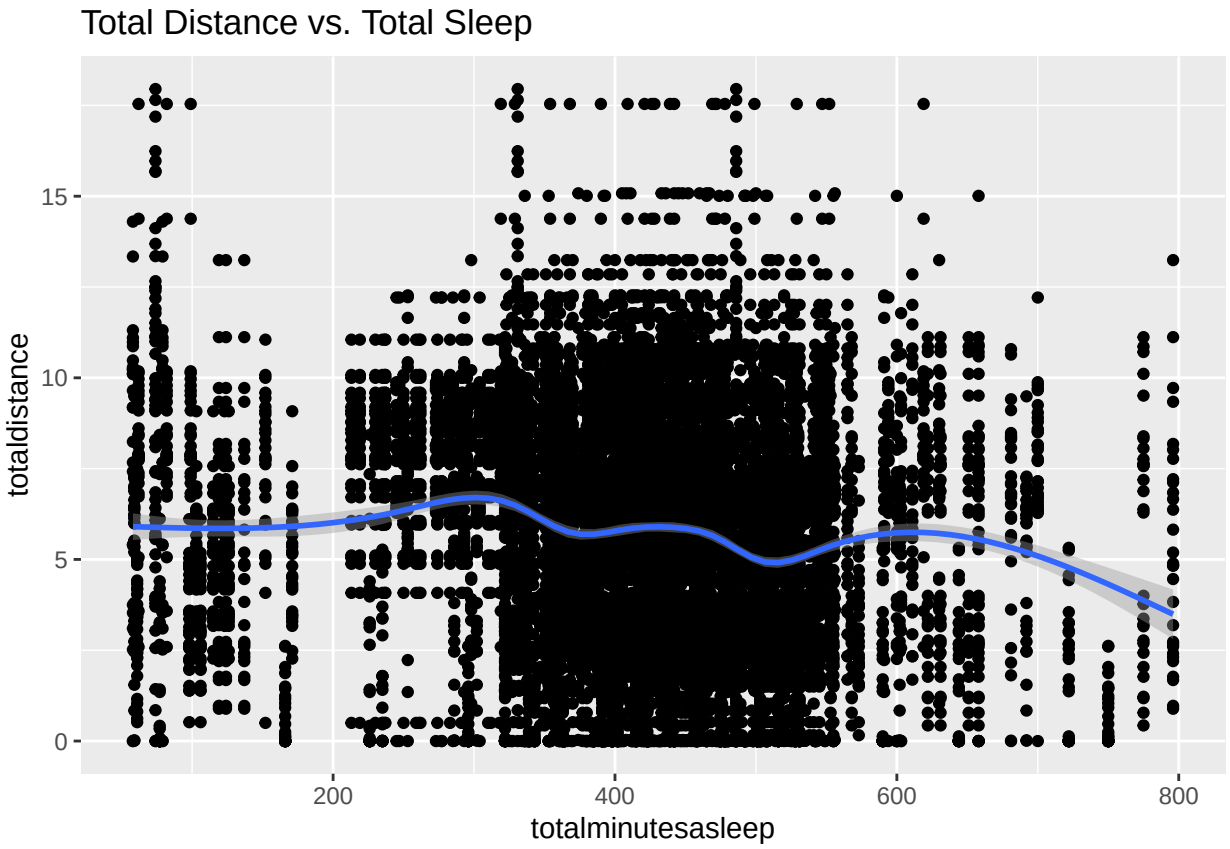
From our visualization, we can see that a sizable number of users are fairly active, lightly active and sedentary. Which accounts for the huge difference between the mean steps taken and the maximum.

Visualization

To help analyze our data, we'll go ahead and visualize our data.

```
ggplot(data=daily_activity_sleep, aes(x=totalminutesasleep, y=totaldistance)) +
  geom_point() + geom_smooth() + labs(title="Total Distance vs. Total Sleep")
```

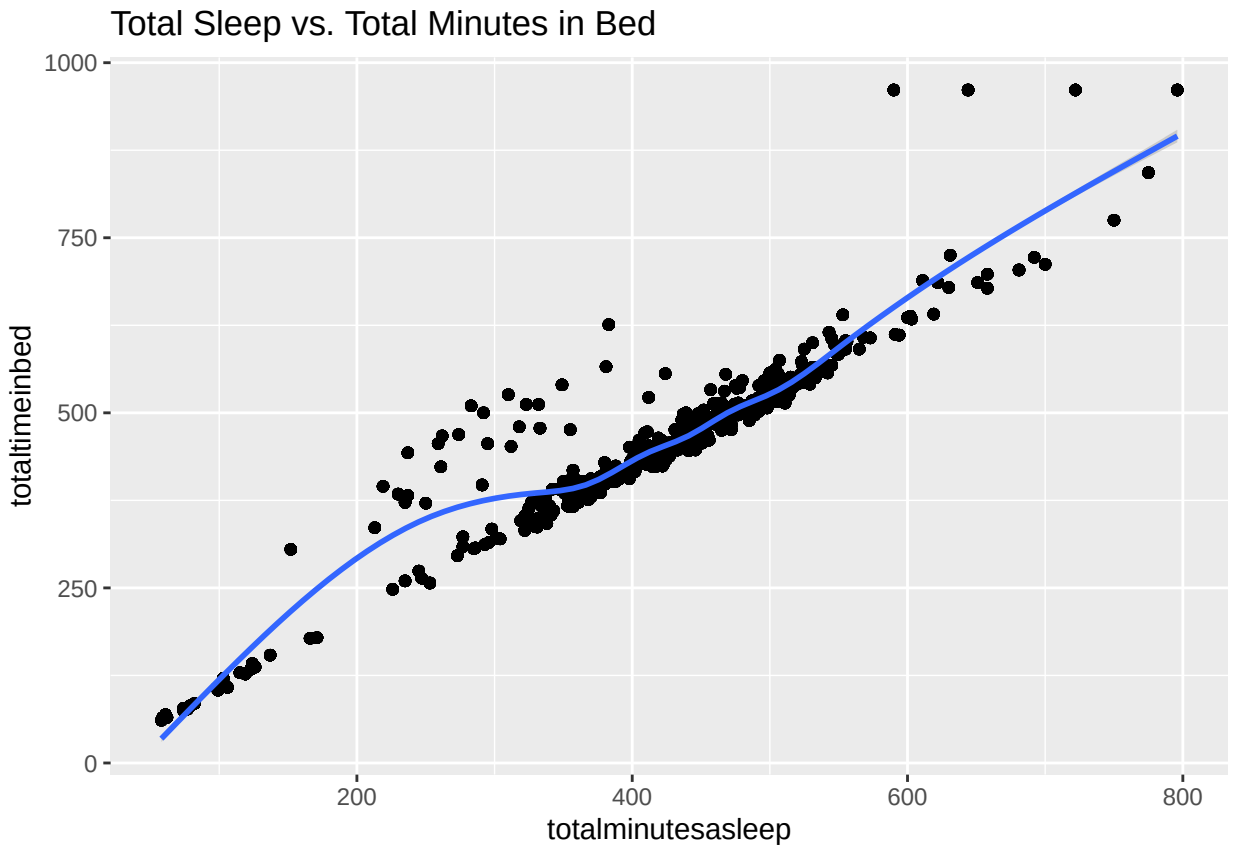
```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```



It seems that there is no positive correlation between the total amount of time users spent in bed and the total distance of activity.

```
ggplot(data=daily_activity_sleep, aes(x=totalminutesasleep, y=totaltimeinbed)) +
  geom_point() + geom_smooth() + labs(title="Total Sleep vs. Total Minutes in Bed")
```

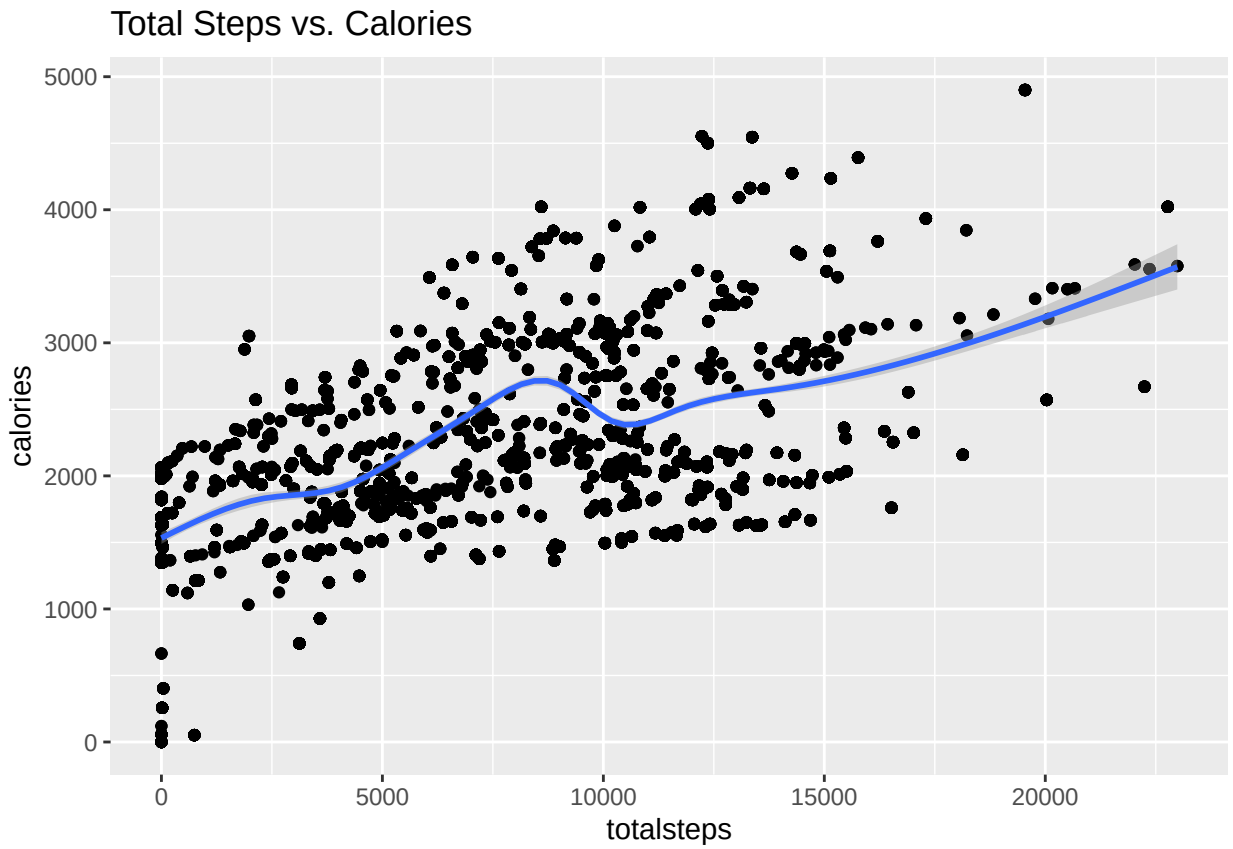
```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```



Further analysis shows that the more time spent in bed, the more sleep users were able to get. A very useful insight, which can help effect recommendations.

```
ggplot(data=daily_activity_sleep, aes(x=totalsteps, y=calories)) +
  geom_point() + geom_smooth() + labs(title="Total Steps vs. Calories")
```

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```



And an obvious correlation that the more steps users took, the more calories got burned. A very useful insight could be that for every average distance covered by the user, motivating notifications can be given so as to help users be more active, and in turn make their activity more productive. Further recommendations will be given after further analysis.

```
weekday_steps_sleep <- daily_activity_sleep %>%
  mutate(weekday = weekdays(date.x))

weekday_steps_sleep$weekday <-ordered(weekday_steps_sleep$weekday, levels=c("Monday", "Tuesday", "Wednes
                                                                            "Friday", "Saturday", "Sunda

weekday_steps_sleep <-weekday_steps_sleep%>%
  group_by(weekday) %>%
  summarize (daily_steps = mean(totalsteps), daily_distance = mean(totaldistance), daily_sleep = mean(to
```

```
head(weekday_steps_sleep)
```

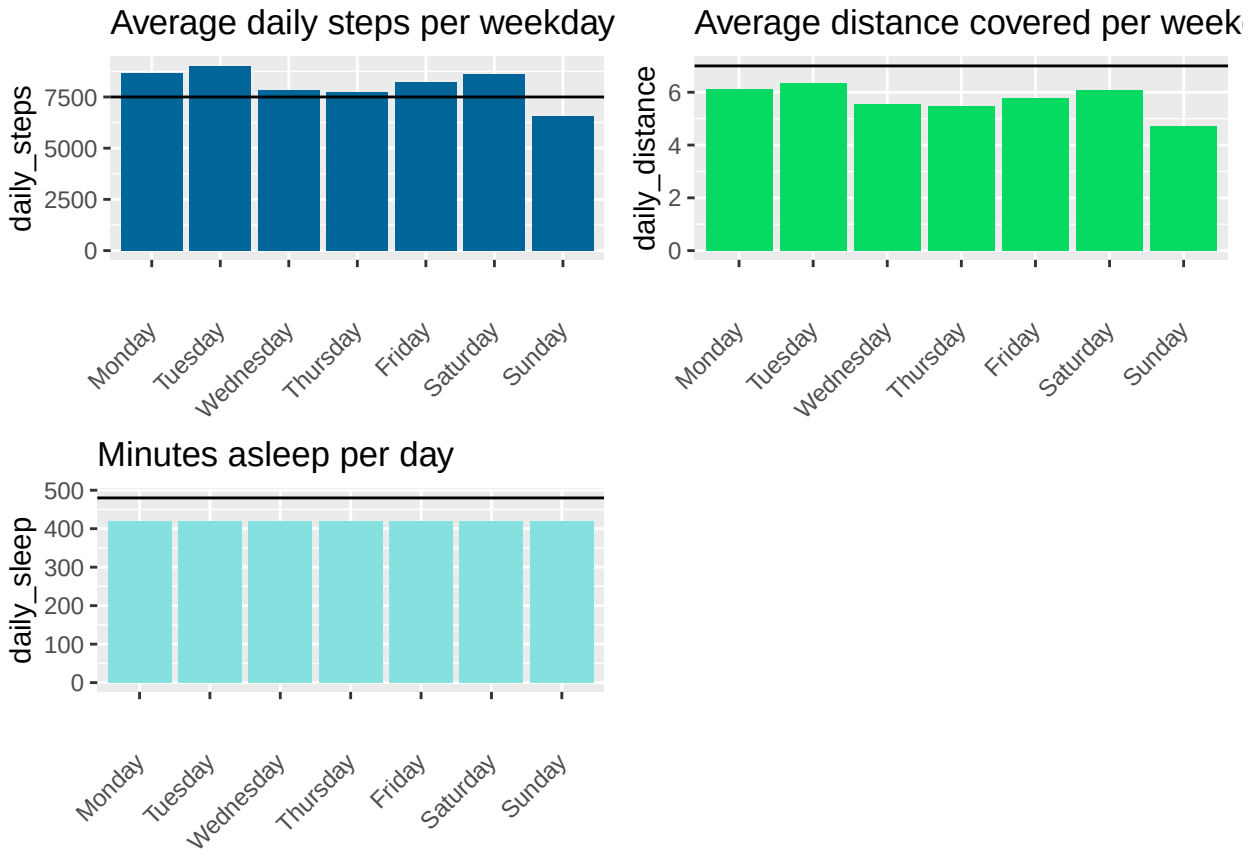
Weekly Averages

```
## # A tibble: 6 x 4
##   weekday   daily_steps daily_distance daily_sleep
##   <ord>           <dbl>          <dbl>       <dbl>
## 1 Monday          8644.           6.10        419.
## 2 Tuesday         9017.           6.34        419.
## 3 Wednesday       7833.           5.54        419.
## 4 Thursday        7736.           5.46        420.
```

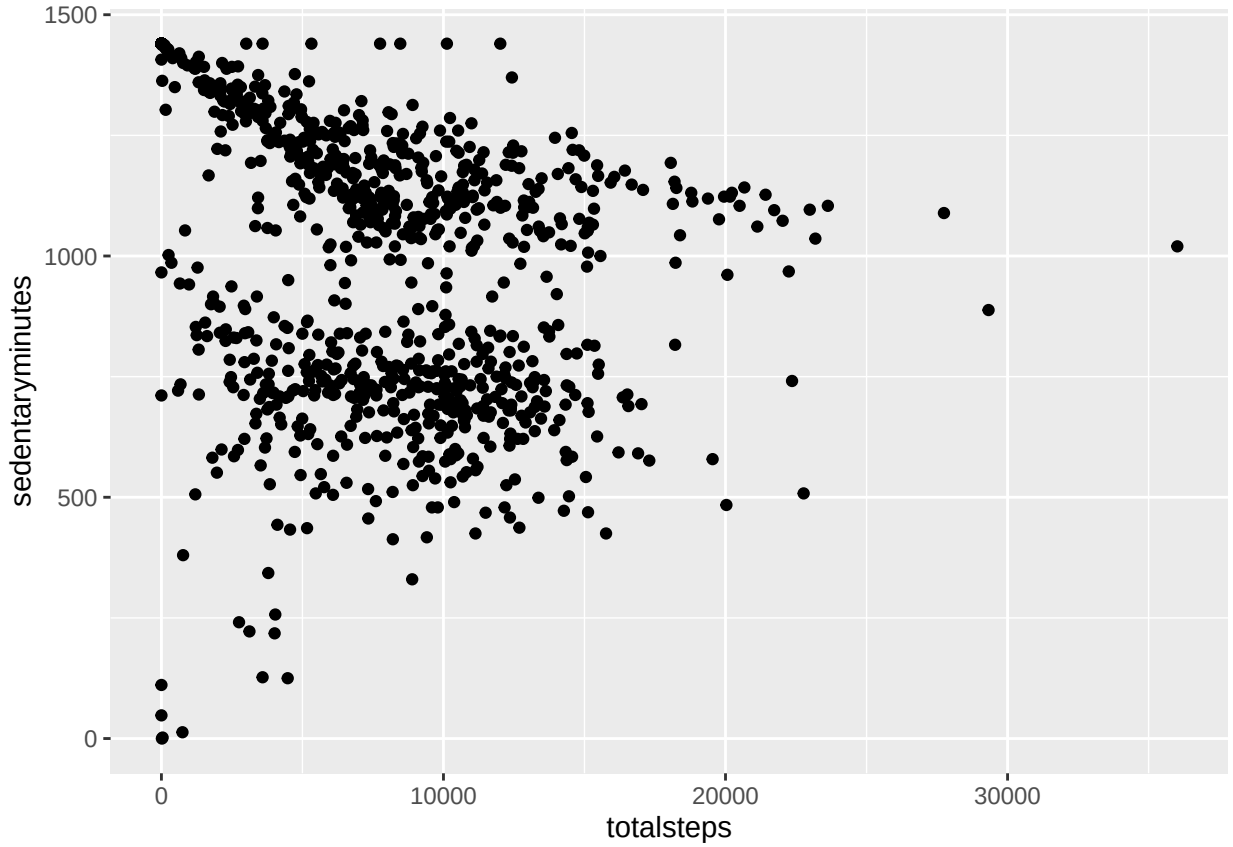
```
## 5 Friday          8231.          5.77        419.
## 6 Saturday        8622.          6.07        419.
```

Calculating the average time that users spend asleep for each day of the week, and the amount of steps per days of the week, we can see that it seems that users tend to be most active on Saturdays, and on Mondays and Tuesdays.

```
ggarrange(
  ggplot(weekday_steps_sleep) +
    geom_col(aes(weekday, daily_steps), fill = "#006699") +
    geom_hline(yintercept = 7500) +
    labs(title = "Average daily steps per weekday", x= "") +
    theme(axis.text.x = element_text(angle = 45,vjust = 0.5, hjust = 1)),
  ggplot(weekday_steps_sleep) +
    geom_col(aes(weekday, daily_distance), fill = "#07DA63") +
    geom_hline(yintercept = 7) +
    labs(title = "Average distance covered per weekday", x= "") +
    theme(axis.text.x = element_text(angle = 45,vjust = 0.5, hjust = 1)),
  ggplot(weekday_steps_sleep, aes(weekday, daily_sleep)) +
    geom_col(fill = "#85e0e0") +
    geom_hline(yintercept = 480) +
    labs(title = "Minutes asleep per day", x= "") +
    theme(axis.text.x = element_text(angle = 45,vjust = 0.5, hjust = 1))
)
```



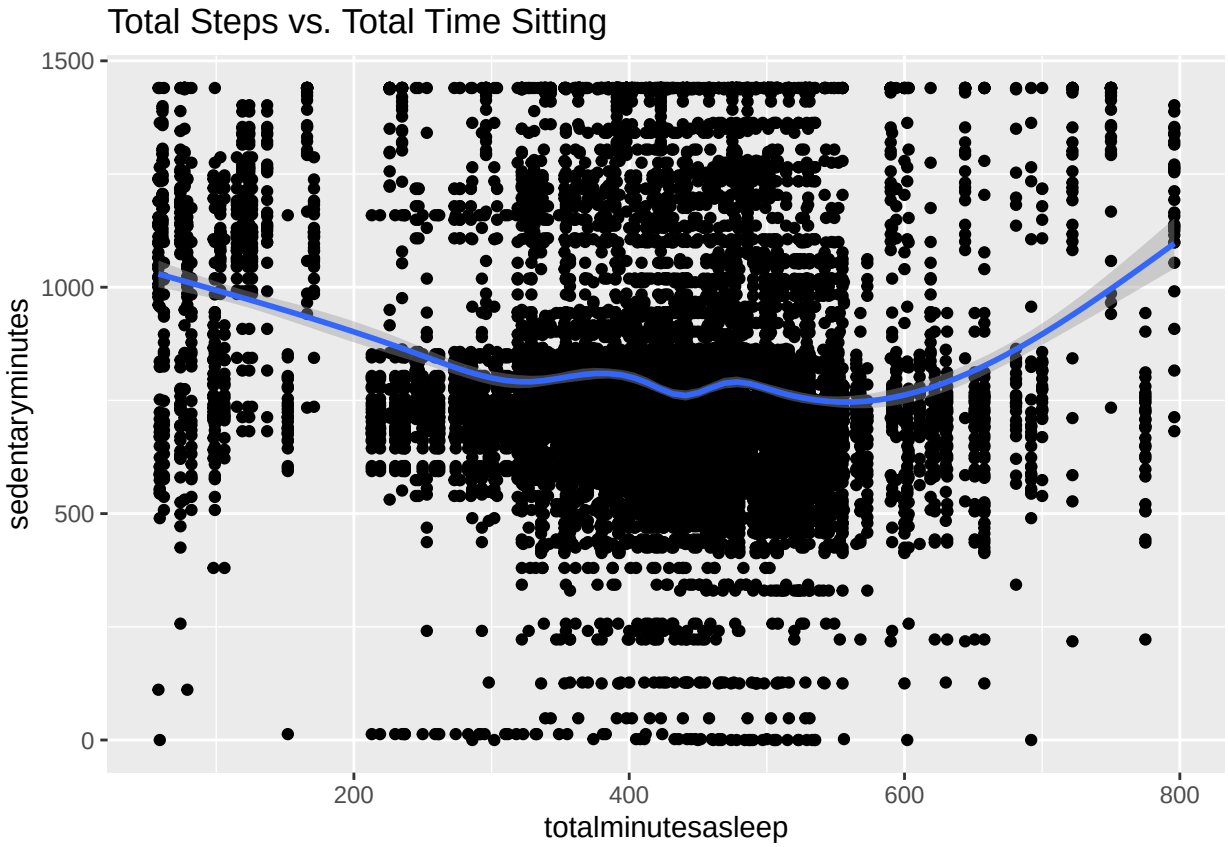

```
ggplot(data=daily_activity, aes(x=totalsteps, y=sedentaryminutes)) + geom_point()
```



It seems there is a possible negative correlation between the total sedentary time and the total steps taken, but further analysis is needed to confirm said correlation.

```
ggplot(data=daily_activity_sleep, aes(x=totalminutesasleep, y=sedentaryminutes)) + geom_point() + geom_s
```

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```



Further analysis shows that there is negative correlation between time in bed vs sedentary minutes. This could inform a choice of having users receive a notification for sleep time, so that users can get more sleep rather than being sedentary.

Phase 6: Share & Act

Recommendations

Returning to the business task, our goal is to help unlock new growth opportunities for the business using our data. And bellabeat's mission is to empower women by providing them with data to discover themselves.

In order for us to properly respond to our business task, further data for analysis is required because the data used for analysis is limited. Likewise, because the business is focused on women, trends and data specifically related to omen has to be collected and mapped for a strong marketing strategy to be achieved.

That being said, a couple of trends from our analysis can help bolster business campaigns and improve users' reliance on the Bellabeat app, and Bellabeat as a whole.

Notification Recommendations

- In order for users to get more productivity out of their activities, the app can be set to give reminders to users to be more active on Saturdays and Mondays, since our analysis showed those were the days users were more active.
- Likewise, our analysis discovered trends that show that majority of users tend to be more sedentary than active, and that the average amount of steps put in/ distance covered is well below the CDC's recommendation, which is for 8000 steps a day. A useful addition can be put into the Bellabeat device, to monitor and aggregate users' average steps, and show notifications when users pass their average daily steps, so as to motivate them to be more active during the day.

Campaign Recommendations

- From our analysis, we can see that a tiny minority of users are very active users of fitness devices. Bellabeat can therefore go further and market specifically to attract more active users by positioning itself as not just another fitness product, but a self-help guide and partner, that helps it users achieve their goal with continuous monitoring and response.

Thank you for going through my first Case Study.

Recommendations and comments will be appreciated.