Knitr.R

kisha

Mon May 14 02:58:50 2018

```
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 3.4.4
```

```
library(scales)
```

```
## Warning: package 'scales' was built under R version 3.4.4
```

```
library(Hmisc)
```

```
## Warning: package 'Hmisc' was built under R version 3.4.4
```

```
## Loading required package: lattice
```

```
## Loading required package: survival
```

```
## Loading required package: Formula
```

```
## Warning: package 'Formula' was built under R version 3.4.4
```

```
##
## Attaching package: 'Hmisc'
```

```
## The following objects are masked from 'package:base':
##
##     format.pval, units
```

```
library(knitr)
```

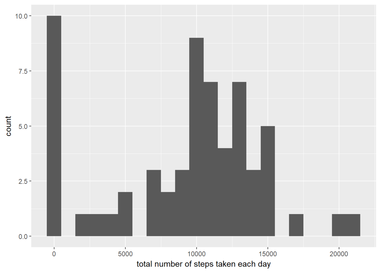
```
## Warning: package 'knitr' was built under R version 3.4.4
```

```
unzip(zipfile="activity.zip")
```

```
## Warning in unzip(zipfile = "activity.zip"): error 1 in extracting from zip
## file
```

```
data <- read.csv("activity.csv")
```

```
library(ggplot2)
total.steps <- tapply(data$steps, data$date, FUN=sum, na.rm=TRUE)
qplot(total.steps, binwidth=1000, xlab="total number of steps taken each day")
```



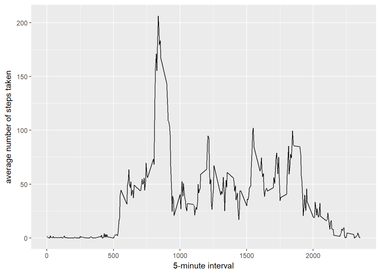

```
mean(total.steps, na.rm=TRUE)
```

```
## [1] 9354.23
```

```
median(total.steps, na.rm=TRUE)
```

```
## [1] 10395
```

```
library(ggplot2)
averages <- aggregate(x=list(steps=data$steps), by=list(interval=data$interval),
                      FUN=mean, na.rm=TRUE)
ggplot(data=averages, aes(x=interval, y=steps)) +
  geom_line() +
  xlab("5-minute interval") +
  ylab("average number of steps taken")
```




```
averages[which.max(averages$steps),]
```

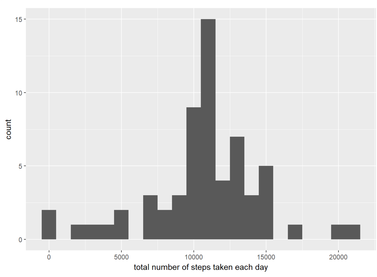
```
##     interval    steps
## 104      835 206.1698
```

```
missing <- is.na(data$steps)
# How many missing
table(missing)
```

```
## missing
## FALSE  TRUE
## 15264  2304
```

```
# Replace each missing value with the mean value of its 5-minute intervai
fill.value <- function(steps, interval) {
  filled <- NA
  if (!is.na(steps))
    filled <- c(steps)
  else
    filled <- (averages[averages$interval==interval, "steps"])
  return(filled)
}
filled.data <- data
filled.data$steps <- mapply(fill.value, filled.data$steps, filled.data$interval)
```

```
total.steps <- tapply(filled.data$steps, filled.data$date, FUN=sum)
qplot(total.steps, binwidth=1000, xlab="total number of steps taken each day")
```




```
mean(total.steps)
```

```
## [1] 10766.19
```

```
median(total.steps)
```

```
## [1] 10766.19
```

```
weekday.or.weekend <- function(date) {
  day <- weekdays(date)
  if (day %in% c("Monday", "Tuesday", "Wednesday", "Thursday", "Friday"))
    return("weekday")
  else if (day %in% c("Saturday", "Sunday"))
    return("weekend")
  else
    stop("invalid date")
}
filled.data$date <- as.Date(filled.data$date)
filled.data$day <- sapply(filled.data$date, FUN=weekday.or.weekend)
```

```
averages <- aggregate(steps ~ interval + day, data=filled.data, mean)
ggplot(averages, aes(interval, steps)) + geom_line() + facet_grid(day ~ .) +
  xlab("5-minute interval") + ylab("Number of steps")
```