

Reproducible Research: Peer Assessment 1

1. Loading and preprocessing the data

What is mean total number of steps taken per day?

#group by date and calculate sum of steps date wise # 2.calculate Mean and median number of steps taken each day

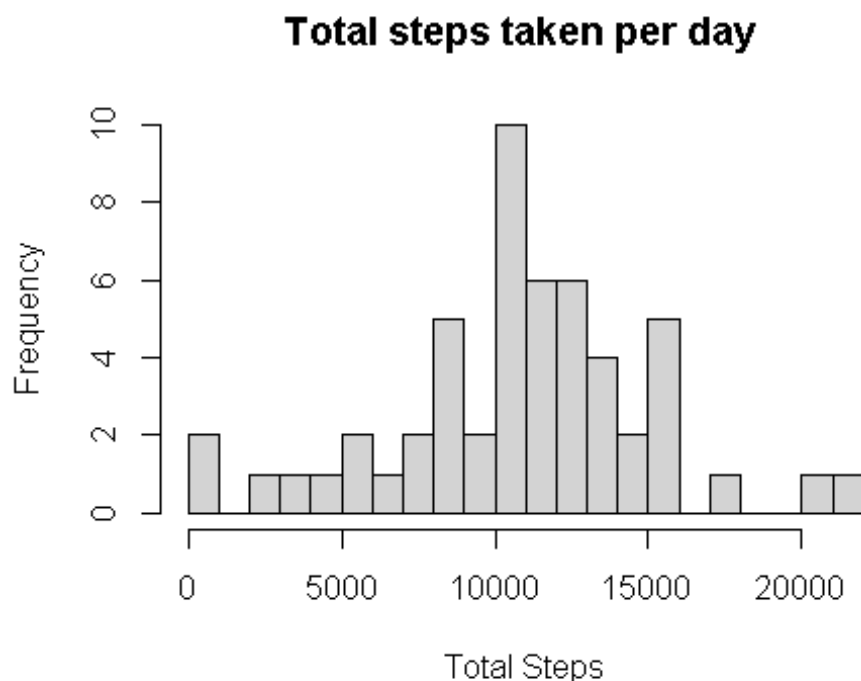
```
datewisesteps <- activitydata %>% select(date,steps) %>% na.omit() %>%  
group_by(date) %>% summarise(totalsteps=sum(steps))  
mean(datewisesteps$totalsteps)
```

```
[1] 10766.19
```

```
median(datewisesteps$totalsteps)
```

```
[1] 10765 ## 3.Histogram of the total number of steps taken each day
```

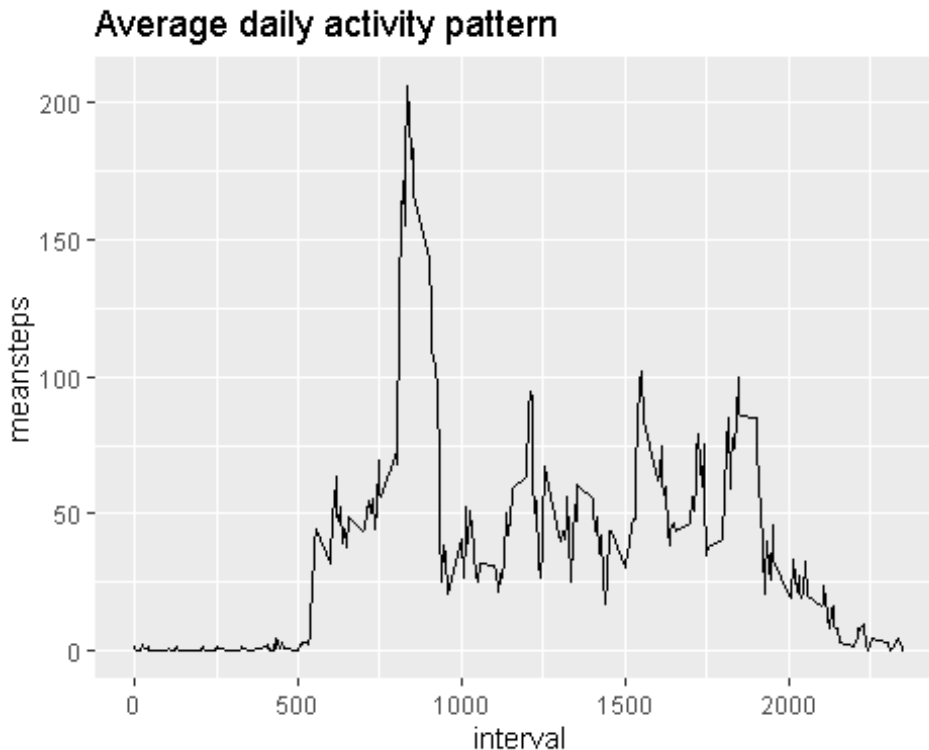
```
hist(datewisesteps$totalsteps, xlab="Total Steps",main="Total steps taken per  
day ", breaks = 20)
```



4.What is the average daily activity pattern?

```
dailyactivityinterval <- activitydata %>% select(interval,steps) %>%  
na.omit() %>% group_by(interval) %>% summarize(meansteps=mean(steps))
```

```
ggplot(dailyactivityinterval,aes(x=interval,
y=meansteps))+geom_line()+ggtitle("Average daily activity pattern")
```



5.The 5-minute interval that, on average, contains the maximum number of steps

```
dailyactivityinterval[which(dailyactivityinterval$meansteps ==
max(dailyactivityinterval$meansteps)),]
```

A tibble: 1 x 2

interval meansteps 1 835 206. ## 6.Imputing missing values #6.1.Calculate and report the total number of missing values in the dataset

```
sum(is.na(activitydata$steps))
```

[1] 2304 #6.2.strategy:fill all of the missing values in the dataset by the mean for that 5-minute interval. # cbind dataframe with missing steps data and meansteps calculated dataframe

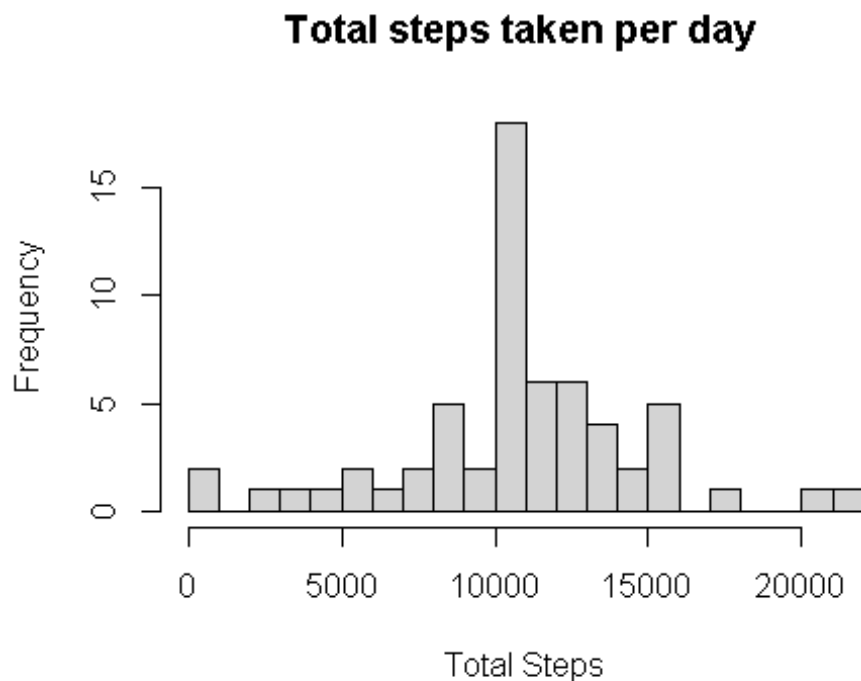
```
mergeActivity <- cbind(activitydata,dailyactivityinterval)
```

#6.3.Create a new dataset that is equal to the original dataset but with the missing data filled in.

```
mergeActivity$steps[is.na(mergeActivity$steps)]<-
mergeActivity$meansteps[is.na(mergeActivity$steps)]
```

#6.4.histogram of the total number of steps taken each day and Calculate and report the mean and median total number of steps taken per day

```
imputedatewisesteps <- mergeActivity %>% select(date,steps) %>%  
group_by(date) %>% summarise(totalsteps=sum(steps))  
  
hist(imputedatewisesteps$totalsteps, xlab="Total Steps",main="Total steps  
taken per day ", breaks = 20)
```



#6.4.1.Calculate

and report the mean and median total number of steps taken per day

```
mean(imputedatewisesteps$totalsteps)
```

```
[1] 10766.19
```

```
median(imputedatewisesteps$totalsteps)
```

```
[1] 10766.19 ## Are there differences in activity patterns between weekdays and  
weekends?
```

```
weekdetails <- subset(mergeActivity[,c("steps","date","interval")])
```

```
weekdetails <- transform(weekdetails, date=as.Date(date))
```

```
weekdetails$weekday <- weekdays(weekdetails$date)
```

```
weekdetails$week <- ifelse(weekdetails$weekday=="Saturday"  
|weekdetails$weekday=="Sunday", "Weekend", "Weekday")
```

```
ggplot(weekdetails,aes(x=interval,y=steps,color=week)) +
geom_line()+facet_grid(week~.)+xlab("Interval")+ylab("Steps")+ggtitle("Activity patterns in weekdays and weekends")
```

