COURSERA - Reproducible Research: Peer Assessment 1

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Loading and preprocessing the data

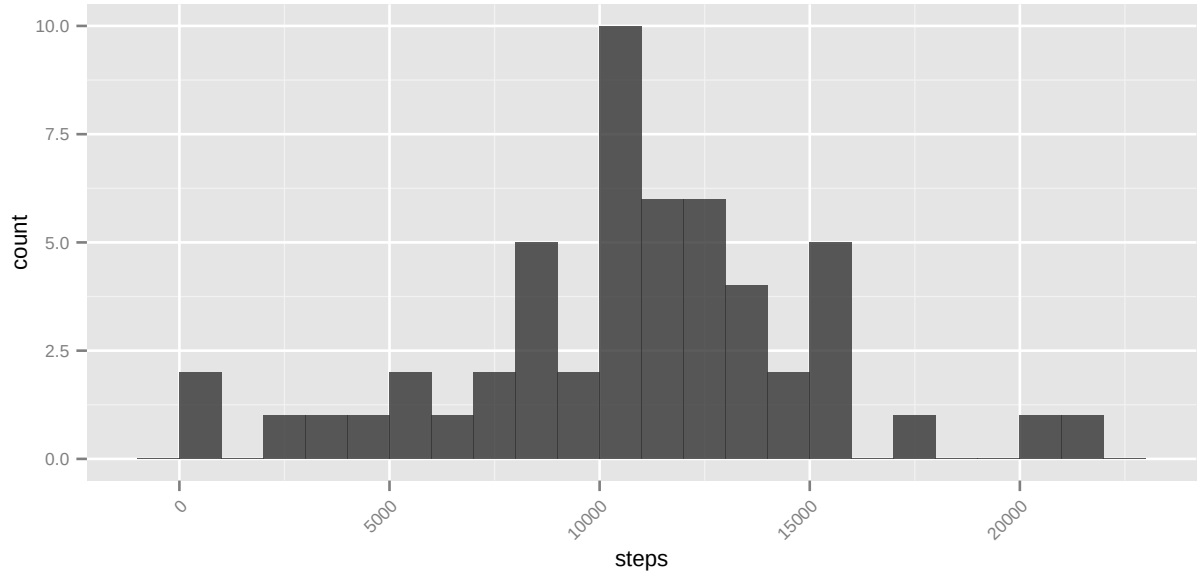
Load required packages:

```
require(dplyr)
require(ggplot2)
require(gridExtra)
```

Set the working directory (**should be customised by the user**) and read the data into R:

What is mean total number of steps taken per day?

Calculate and graph the total steps walked during each day and make a histogram:



Median value of steps walked during a day is:

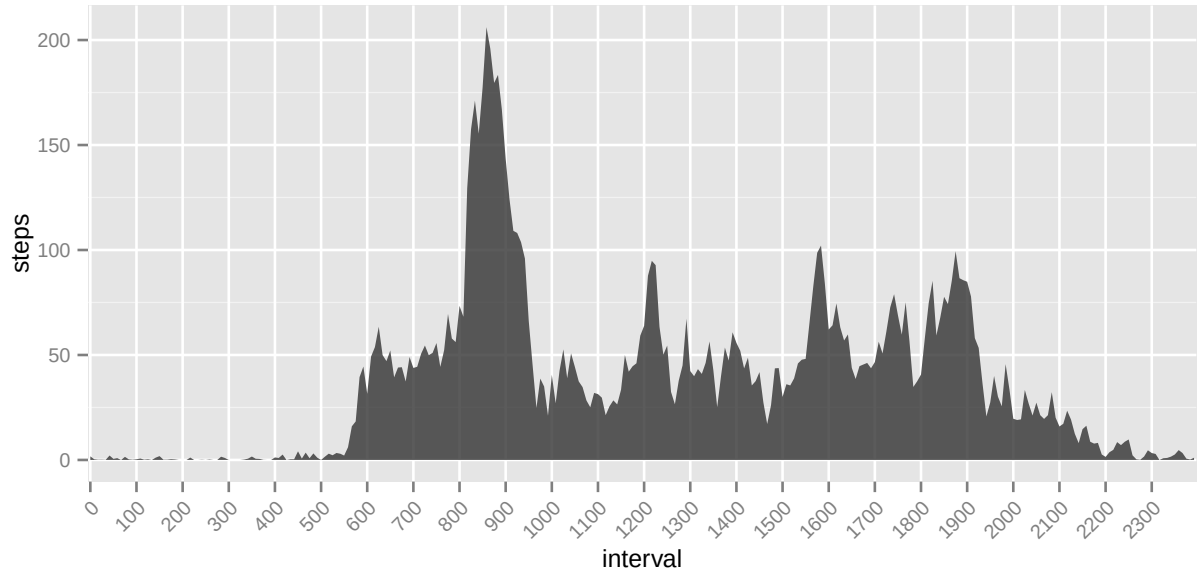
```
## Source: local data frame [1 x 1]
##
##   steps
## 1 10765
```

Mean value of steps walked during a day is:

```
## Source: local data frame [1 x 1]
##
##      steps
## 1 10766.19
```

What is the average daily activity pattern?

Calculate and plot the mean steps walked during each interval over the whole period:



Find the interval with maximum steps walked on average:

```
## Source: local data frame [1 x 2]
##
##   interval    steps
## 1      835 206.1698
```

Imputing missing values

Calculate the number of missing values before imputing the missing values:

```
##   count
## 1  2304
```

Impute the missing values with average values for the corresponding interval:

Calculate the number of missing values after imputing missing values:

```
##   count
## 1     0
```

Calculate and graph the total steps walked during each day after imputing the missing values:

Median value of steps walked during a day after imputing the missing values is:

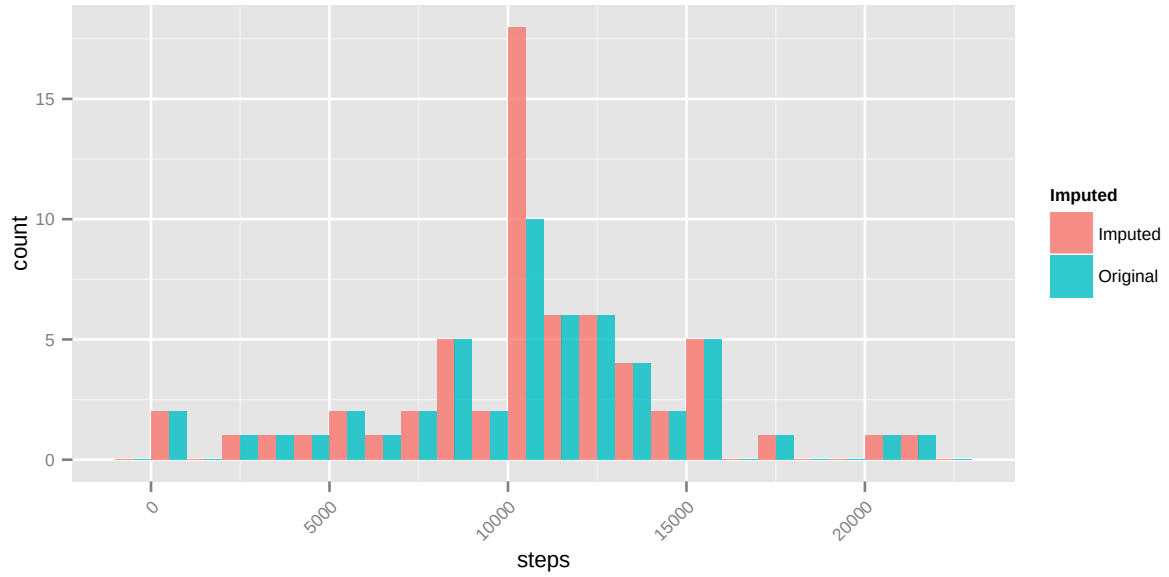
```
## Source: local data frame [1 x 1]
##
##      steps
## 1 10766.19
```

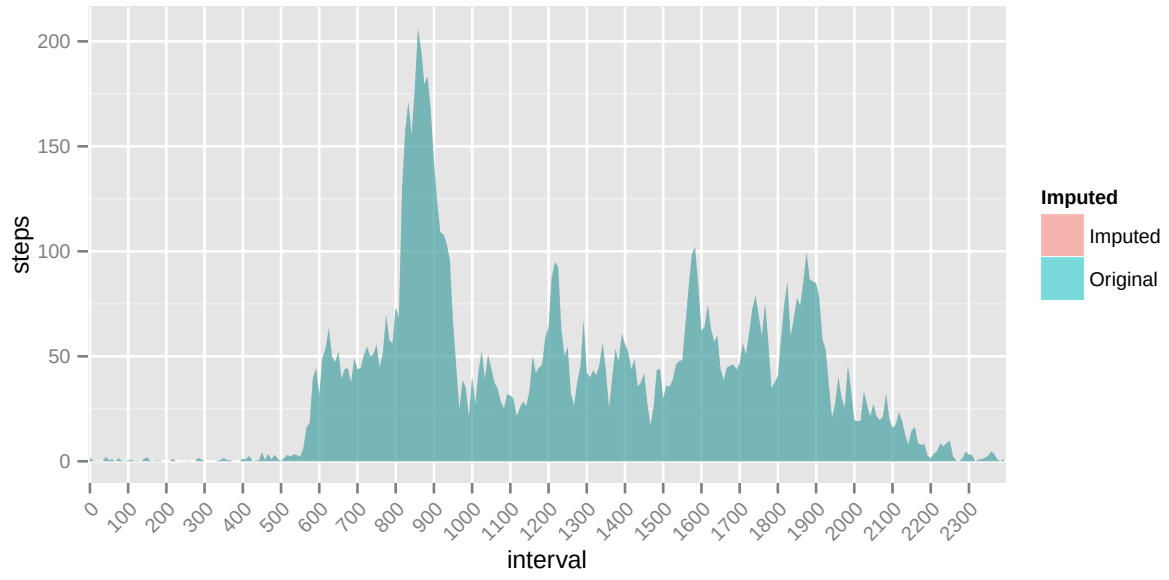
Mean value of steps walked during a day after imputing the missing values is:

```
## Source: local data frame [1 x 1]
##
##      steps
## 1 10766.19
```

Calculate and plot the mean steps walked during each interval over the whole period after imputing missing values:

Join original and imputed tables for convenient graphing in one plot and see the comparison on the plot:





Are there differences in activity patterns between weekdays and weekends?

Create a factor with values WorkingDay/Weekend:

```
## [1] "C"
```

Calculate and plot the mean steps walked during each interval over WorkingDay/ Weekend periods after imputing missing values: