# **Rep\_Data Peer Assesment 1**

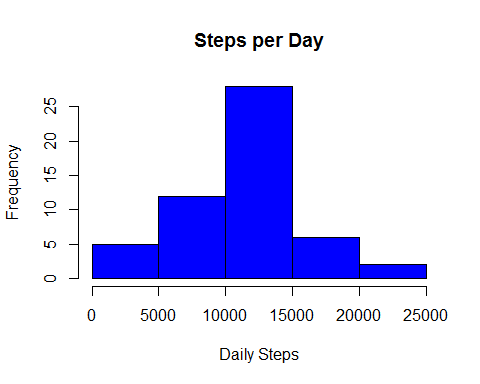
*Kamal*

Here is the Code to Load the data

activity <- read.table("./data/activity.csv",sep=",",header = T)  
### We can ignore the missing values  
c\_activity <- activity[complete.cases(activity),]

What is mean total number of steps taken per day?

##aggregate of daily steps  
d\_steps <- aggregate(steps~date,data=c\_activity, sum)  
  
##Create a histogram of the total number of steps taken each day  
hist(d\_steps$steps, col = "blue", main = "Steps per Day",xlab ="Daily Steps")

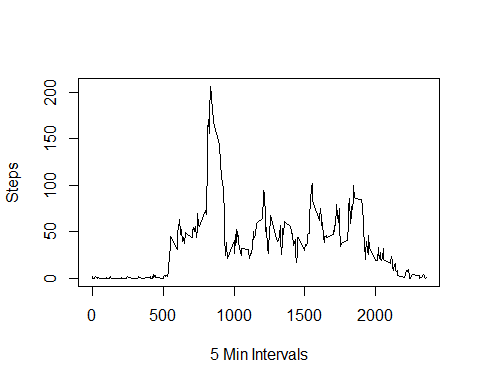


## Mean and Maidan  
meansteps<-as.integer(mean(d\_steps$steps))  
mediansteps<-median(d\_steps$steps)

The mean total of steps per day is 10766. The median total of steps per day is 10765.

What is the average daily activity pattern?

#i\_steps <- aggregate(steps~interval,data=c\_activity, mean)  
i\_steps <- aggregate(c\_activity$steps,list(interval = c\_activity$interval),mean)  
  
plot (i\_steps$interval,  
 i\_steps$x,  
 ylab ="Steps",   
 xlab ="5 Min Intervals",   
 type="l")

 Which 5-minute interval, on average across all the days in the dataset, contains the maximum number of steps?

max<-i\_steps[  
 (i\_steps$steps==max(i\_steps$steps)) ## row that has the max value  
 ,] ## Return the Interval

## Warning: no non-missing arguments to max; returning -Inf

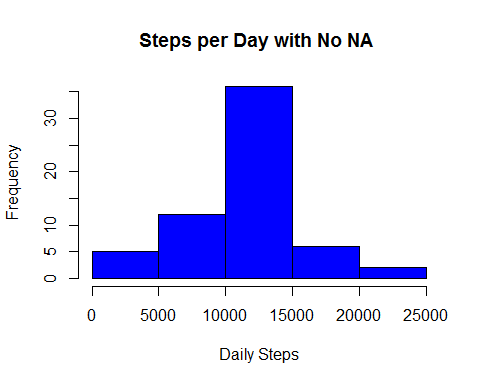
Maximum number of steps are and date is .

Imputing missing values

NAs <- sum(is.na(activity$steps))  
NAs

## [1] 2304

#data without NA  
## Merging with Interval data to get mean of 5 intervals  
nonNA\_activity <- merge(activity,i\_steps)  
  
##Replacing the NAs with corresponding 5minutes interval Steps Mean value   
nonNA\_activity$steps <- ifelse(is.na(nonNA\_activity$steps),nonNA\_activity$x  
 ,nonNA\_activity$steps)  
  
  
fd\_steps <- aggregate(steps~date,data=nonNA\_activity, sum)  
hist(fd\_steps$steps, col = "blue", main = "Steps per Day with No NA ",xlab ="Daily Steps")



#Calculate the Mean and Median of the new datatset.  
  
meansteps<-as.integer(mean(fd\_steps$steps))  
mediansteps<-as.integer(median(fd\_steps$steps))

The mean total of steps per day is 10766. The median total of steps per day is 10766.

Are there differences in activity patterns between weekdays and weekends? Compare weekend vs weekday data. Are there any differences?

nonNA\_activity$day <- ifelse( weekdays(as.Date(nonNA\_activity$date)) %in% c("Saturday","Sunday"),"weekend","weekday")  
  
weekend\_df <- nonNA\_activity[  
 (nonNA\_activity$day == "weekend"),  
 ]  
  
weekday\_df <- nonNA\_activity[  
 (nonNA\_activity$day == "weekday"),  
 ]  
  
i\_steps\_we <- aggregate(weekend\_df$steps,list(interval = weekend\_df$interval), mean)  
i\_steps\_wd <- aggregate(weekday\_df$steps,list(interval = weekday\_df$interval), mean)  
#Now plot weekend and weekday activity patterns.  
  
par(mfcol = c(2,1))  
  
plot (i\_steps\_we$interval,  
 i\_steps\_we$x,  
 ylab ="Steps",   
 xlab ="5 Min Intervals",  
 main = "Weekend Average Steps",  
 type="l")  
  
plot (i\_steps\_wd$interval,  
 i\_steps\_wd$x,  
 ylab ="Steps",   
 xlab ="5 Min Intervals",  
 main = "Weekday Average Steps",  
 type="l")

