

To Download the data

```
library(data.table)

fileurl =
'https://d396qusza40orc.cloudfront.net/getdata%2Fprojectfiles%2FUCI%20HAR%20D
ataset.zip'

if (!file.exists('./UCI HAR Dataset.zip')){
  download.file(fileurl, './UCI HAR Dataset.zip', mode = 'wb')
  unzip("UCI HAR Dataset.zip", exdir = getwd())
}
```

Convert into single frame

```
features <- read.csv('./UCI HAR Dataset/features.txt', header = FALSE, sep =
' ')
features <- as.character(features[,2])

data.train.x <- read.table('./UCI HAR Dataset/train/X_train.txt')
data.train.activity <- read.csv('./UCI HAR Dataset/train/y_train.txt', header
= FALSE, sep = ' ')
data.train.subject <- read.csv('./UCI HAR
Dataset/train/subject_train.txt',header = FALSE, sep = ' ')
data.train <- data.frame(data.train.subject, data.train.activity,
data.train.x)
names(data.train) <- c(c('subject', 'activity'), features)

data.test.x <- read.table('./UCI HAR Dataset/test/X_test.txt')
data.test.activity <- read.csv('./UCI HAR Dataset/test/y_test.txt', header =
FALSE, sep = ' ')
data.test.subject <- read.csv('./UCI HAR Dataset/test/subject_test.txt',
header = FALSE, sep = ' ')
data.test <- data.frame(data.test.subject, data.test.activity, data.test.x)
names(data.test) <- c(c('subject', 'activity'), features)
```

Merging

```
data.all <- rbind(data.train, data.test)
```

Mean and standard deviation

```
mean_std.select <- grep('mean|std', features)
data.sub <- data.all[,c(1,2,mean_std.select + 2)]
```

activities

```
activity.labels <- read.table('./UCI HAR Dataset/activity_labels.txt', header
= FALSE)
activity.labels <- as.character(activity.labels[,2])
data.sub$activity <- activity.labels[data.sub$activity]
```

Labeling

```
name.new <- names(data.sub)
name.new <- gsub("[()]", "", name.new)
name.new <- gsub("^t", "TimeDomain_", name.new)
name.new <- gsub("^f", "FrequencyDomain_", name.new)
name.new <- gsub("Acc", "Accelerometer", name.new)
name.new <- gsub("Gyro", "Gyroscope", name.new)
name.new <- gsub("Mag", "Magnitude", name.new)
name.new <- gsub("-mean-", "_Mean_", name.new)
name.new <- gsub("-std-", "_StandardDeviation_", name.new)
name.new <- gsub("-", "_", name.new)
names(data.sub) <- name.new
```

output

```
data.tidy <- aggregate(data.sub[,3:81], by = list(activity =  
data.sub$activity, subject = data.sub$subject), FUN = mean)  
write.table(x = data.tidy, file = "data_tidy.txt", row.names = FALSE)
```