# run\_analysis.R

# This script performs the following steps:

# 1. Merges the training and test datasets

# 2. Extracts only measurements on mean and standard deviation

# 3. Uses descriptive activity names

# 4. Appropriately labels dataset with descriptive variable names

# 5. Creates tidy dataset with the average of each variable for each activity and subject

Library(dplyr)

# Path to dataset

Path <- “UCI HAR Dataset”

# Load metadata

Features <- read.table(file.path(path, “features.txt”))

Activity\_labels <- read.table(file.path(path, “activity\_labels.txt”))

# Load training data

Subject\_train <- read.table(file.path(path, “train”, “subject\_train.txt”))

X\_train <- read.table(file.path(path, “train”, “X\_train.txt”))

Y\_train <- read.table(file.path(path, “train”, “y\_train.txt”))

# Load test data

Subject\_test <- read.table(file.path(path, “test”, “subject\_test.txt”))

X\_test <- read.table(file.path(path, “test”, “X\_test.txt”))

Y\_test <- read.table(file.path(path, “test”, “y\_test.txt”))

# Merge datasets

Subject <- rbind(subject\_train, subject\_test)

X <- rbind(x\_train, x\_test)

Y <- rbind(y\_train, y\_test)

# Label columns

Colnames(X) <- features[,2]

Colnames(subject) <- “subject”

Colnames(Y) <- “activity”

# Combine all data

Data <- cbind(subject, Y, X)

# Extract only mean and std variables

Data\_extract <- data %>%

Select(subject, activity, contains(“mean”), contains(“std”))

# Use descriptive activity names

Data\_extract$activity <- factor(data\_extract$activity,

Levels = activity\_labels[,1],

Labels = activity\_labels[,2])

# Label dataset with descriptive variable names

Names(data\_extract) <- gsub(“^t”, “Time”, names(data\_extract))

Names(data\_extract) <- gsub(“^f”, “Frequency”, names(data\_extract))

Names(data\_extract) <- gsub(“Acc”, “Accelerometer”, names(data\_extract))

Names(data\_extract) <- gsub(“Gyro”, “Gyroscope”, names(data\_extract))

Names(data\_extract) <- gsub(“Mag”, “Magnitude”, names(data\_extract))

Names(data\_extract) <- gsub(“BodyBody”, “Body”, names(data\_extract))

# Create tidy dataset with the average of each variable for each activity and subject

Tidy\_data <- data\_extract %>%

Group\_by(subject, activity) %>%

Summarise\_all(mean)

# Save tidy dataset

Write.table(tidy\_data, “tidy\_dataset.txt”, row.name=FALSE)