```r
# return_tidy_data flag is used to return a tbl_df of the tidy data.
# re_prepare flags rebuild of "prepared_data.csv" file.
# re_tidy flags rebuild of "tidy_data.csv" file.
# Both flags false by default, script will attempt to use existing local files.
run_analysis <- function(return_tidy_data = FALSE, re_prepare = FALSE,
                         re_tidy = FALSE) {

    # Load libraries.
    library(dplyr)
    library(tidyr)

    # Source scripts.
    source("prepare_data.R")
    source("tidy_data.R")

    # Setup the filenames.
    filename_prepared_data <- "prepared_data.csv"
    filename_tidy_data <- "tidy_data.csv"

    # Check if the prepared data file exists.
    if(file.exists(filename_prepared_data) == FALSE | re_prepare == TRUE) {
        re_prepare = TRUE
        message("Info: File prepared_data.csv will be rebuilt.")
    }

    # Check if the tidy data file exists.
    if(file.exists(filename_tidy_data) == FALSE | re_tidy == TRUE) {
        re_tidy = TRUE
        message("Info: File tidy_data.csv will be rebuilt.")
    }

    # If we are re-preparing, then we should also re-tidy with the newly
    # prepared data
    if(re_prepare == TRUE & re_tidy == FALSE) {
        re_tidy = TRUE
        message("Info: File tidy_data.csv will therefore also be rebuilt.")
    }

    if(re_prepare) {
        # Prepare and load the data.
        test_data <- prepare_data("test")
        train_data <- prepare_data("train")

        # Join the datasets.
        prepared_data <- bind_rows(test_data, train_data)

        # Check there are 10,299 observations.
        if(nrow(prepared_data) != 10299) {
            stop("Observations count is not 10,299.")
        }

        # Write a CSV with the prepared data, ready for further processing.
        write.csv(prepared_data, file.path(filename_prepared_data),
                  row.names = FALSE)

        message("Info: File prepared_data.csv has been rebuilt.")
    }

    if(re_tidy) {
        # Read and tidy the prepared data.
        tidy_df <- tidy_data(tbl_df(read.csv(filename_prepared_data)))

        # Write a CSV with the tidy data.
        write.csv(tidy_df, file.path(filename_tidy_data), row.names = FALSE)

        message("Info: File tidy_data.csv has been rebuilt.")
    }

    if(re_prepare == FALSE & re_tidy == FALSE) {
        message("Warning: No processing was performed.")
        message("Info: prepared_data.csv and tidy_data.csv already exist.")
        message("Info: Set parameter re_prepare = TRUE to re-prepare data.")
        message("Info: Set parameter re_tidy = TRUE to re-tidy data.")
    }

    if(return_tidy_data) {
        cols = c(subject = "integer",
                 activity = "character",
                 domain = "character",
                 signal_type = "character",
                 signal_source = "character",
                 signal_form = "character",
                 calculation = "character",
                 axis = "character",
                 value = "double")
        return(tbl_df(read.csv(filename_tidy_data,
                               colClasses = cols)))
    }

}
```