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# This is a sample R script which takes a list of 23 of the
independent variables selected through
# the variable trimming process explained in Section 4.2.2 of the
report. This process of taking a "Set"
# of the variables and running correlations on them was completed
for each Set # until all of the
# variables were exhausted.

# Import the Set of variables in question. Set 4 is the set of 23
independent var. used in this example.

library(readr)
QuantVar23_Set_4 <- read_csv("QuantVar23 - Set 4.csv")
View(QuantVar23_Set_4)

# Check that the imported data frame matches the data properly.

# Rename and run a correlation to crate a correlation matrix,
excluding the cycling rate variable.
set4 <- QuantVar23_Set_4
corset4 <- cor(set4[,2:24])

# Write the correlation matrix to a .CSV file

write.csv((corset4), file = "Set4_CorMatrix.csv")

# Produce the plots of the correlation matrix.

library(corrplot)
corrplot(corset4, method = "number")
corrplot(corset4, method = "circle")

# With the matrix and the plots, the levels of collinearity
between the variables can be easily identified.

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