Soil Texture Processing File

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## Reading .csv Data into R

reading <- "/home/CAMPUS/mwl04747/github/SOPs/Soil\_Texture\_Analysis/Data/reading.csv"  
sample <- "/home/CAMPUS/mwl04747/github/SOPs/Soil\_Texture\_Analysis/Data/sample.csv"  
reading.df <- read.csv(reading)  
sample.df <- read.csv(sample)

## Check Data Importing

#View(reading.df)  
head(reading.df)

## sampleKEY time timeElapsed actual correct temp K depth diameter  
## 1 17 1:47 3 min 1.0020 2.004 23.2 0 0 0  
## 2 17 1:50 3 min 1.0120 2.047 23.4 0 0 0  
## 3 17 1:54 4 min 1.0010 2.033 25.0 0 0 0  
## 4 20 13:09 40s 1.0190 0.000 0.0 0 0 0  
## 5 20 13:10 2m 1.0170 0.000 22.3 0 0 0  
## 6 20 13:13 5m 1.0145 0.000 0.0 0 0 0  
## PFpartial PFtotal  
## 1 0 0  
## 2 0 0  
## 3 0 0  
## 4 0 0  
## 5 0 0  
## 6 0 0

head(sample.df)

## sampleKEY project sampleID date researcher computed checked  
## 1 17 Test 1 7/16/16 Shimoda Shimoda Los Huertos  
## 2 19 USDA TOSA 4-7F 05/27/16 Bailey Lai   
## 3 20 USDA JACS 15-30 05/27/16 Bailey Lai   
## 4 21 USDA TOSA 15-30 05/27/16 Bailey Lai   
## 5 22 USDA TOMR 0-15 05/27/16 Bailey Lai   
## 6 23 USDA TOSA 0-15 05/27/16 Bailey Lai   
## hydrometer pretreat disperse gsp pass10 retain10 tinNum tinTare tinAir  
## 1 R-3 A none none 0 147.47 47.47 T-1 47.47 147.47  
## 2 151H #258890 0 127.65 0.00 24 30.67 45.67  
## 3 151H #258878 0 133.69 0.00 26 30.71 45.71  
## 4 151H #258890 0 0.00 0.00 21 30.72 45.72  
## 5 151H #258878 0 137.10 0.00 32 0.00 45.66  
## 6 151H #258890 0 140.40 0.00 25 30.57 45.57  
## tinOven passPercent hygroPercent ovenDesired ovenEquiv  
## 1 100.47 47.2 0.47 47.47 47.47  
## 2 44.43 99.8 0.00 0.00 0.00  
## 3 43.95 98.5 0.00 0.00 0.00  
## 4 44.62 100.0 0.00 0.00 0.00  
## 5 44.96 99.5 0.00 0.00 0.00  
## 6 44.90 99.9 0.00 0.00 0.00

## Preprocess Data

library(mosaic)

## Loading required package: dplyr

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

## Loading required package: lattice

## Loading required package: ggplot2

## Loading required package: car

## Loading required package: mosaicData

##   
## Attaching package: 'mosaic'

## The following object is masked from 'package:car':  
##   
## logit

## The following objects are masked from 'package:dplyr':  
##   
## count, do, tally

## The following objects are masked from 'package:stats':  
##   
## binom.test, cor, cov, D, fivenum, IQR, median, prop.test,  
## quantile, sd, t.test, var

## The following objects are masked from 'package:base':  
##   
## max, mean, min, prod, range, sample, sum

## Join Data with Key.

First, I created two files that have only a few columns each so we can test the join function.

reading.tmp <- select(reading.df, sampleKEY, timeElapsed)  
sample.tmp <- select(sample.df, sampleKEY, researcher)  
  
left\_join(sample.tmp, reading.tmp, by = "sampleKEY")

## sampleKEY researcher timeElapsed  
## 1 17 Shimoda 3 min  
## 2 17 Shimoda 3 min  
## 3 17 Shimoda 4 min  
## 4 19 Bailey Lai 40s  
## 5 19 Bailey Lai 2m  
## 6 19 Bailey Lai 5m  
## 7 19 Bailey Lai 15m  
## 8 19 Bailey Lai 30m  
## 9 19 Bailey Lai 60m  
## 10 19 Bailey Lai 90m  
## 11 19 Bailey Lai 2h  
## 12 19 Bailey Lai 3h  
## 13 19 Bailey Lai 7h  
## 14 19 Bailey Lai 24h  
## 15 20 Bailey Lai 40s  
## 16 20 Bailey Lai 2m  
## 17 20 Bailey Lai 5m  
## 18 20 Bailey Lai 15m  
## 19 20 Bailey Lai 30m  
## 20 20 Bailey Lai 60m  
## 21 20 Bailey Lai 90m  
## 22 20 Bailey Lai 2h  
## 23 20 Bailey Lai 4h  
## 24 20 Bailey Lai 24h  
## 25 21 Bailey Lai 40s  
## 26 21 Bailey Lai 2m  
## 27 21 Bailey Lai 5m  
## 28 21 Bailey Lai 15m  
## 29 21 Bailey Lai 30m  
## 30 21 Bailey Lai 60m  
## 31 21 Bailey Lai 90m  
## 32 21 Bailey Lai 2h  
## 33 21 Bailey Lai 3h  
## 34 21 Bailey Lai 6h  
## 35 21 Bailey Lai 24h  
## 36 22 Bailey Lai 40s  
## 37 22 Bailey Lai 2m  
## 38 22 Bailey Lai 5m  
## 39 22 Bailey Lai 15m  
## 40 22 Bailey Lai 30m  
## 41 22 Bailey Lai 60m  
## 42 22 Bailey Lai 90m  
## 43 22 Bailey Lai 2h  
## 44 22 Bailey Lai 3h  
## 45 22 Bailey Lai 6h  
## 46 22 Bailey Lai 24h  
## 47 23 Bailey Lai 40s  
## 48 23 Bailey Lai 2m  
## 49 23 Bailey Lai 5m  
## 50 23 Bailey Lai 15m  
## 51 23 Bailey Lai 30m  
## 52 23 Bailey Lai 60m  
## 53 23 Bailey Lai 90m  
## 54 23 Bailey Lai 2h  
## 55 23 Bailey Lai 3h  
## 56 23 Bailey Lai 6h  
## 57 23 Bailey Lai 24h  
## 58 24 Bailey Lai 40s  
## 59 24 Bailey Lai 2m  
## 60 24 Bailey Lai 5m  
## 61 24 Bailey Lai 15m  
## 62 24 Bailey Lai 30m  
## 63 24 Bailey Lai 60m  
## 64 24 Bailey Lai 90m  
## 65 24 Bailey Lai 2h  
## 66 24 Bailey Lai 3h  
## 67 24 Bailey Lai 6h  
## 68 24 Bailey Lai 24h  
## 69 25 Dmaia Curry 40s  
## 70 25 Dmaia Curry 2m  
## 71 25 Dmaia Curry 5m  
## 72 25 Dmaia Curry 15m  
## 73 25 Dmaia Curry 30m  
## 74 25 Dmaia Curry 60m  
## 75 25 Dmaia Curry 90m  
## 76 25 Dmaia Curry 2h  
## 77 25 Dmaia Curry 3h  
## 78 25 Dmaia Curry 6h  
## 79 25 Dmaia Curry 24h  
## 80 26 Dmaia Curry 40s  
## 81 26 Dmaia Curry 2m  
## 82 26 Dmaia Curry 5m  
## 83 26 Dmaia Curry 15m  
## 84 26 Dmaia Curry 30m  
## 85 26 Dmaia Curry 60m  
## 86 26 Dmaia Curry 90m  
## 87 26 Dmaia Curry 2h  
## 88 26 Dmaia Curry 3h  
## 89 26 Dmaia Curry 6h  
## 90 26 Dmaia Curry 24h  
## 91 27 Dmaia Curry 40s  
## 92 27 Dmaia Curry 2m  
## 93 27 Dmaia Curry 5m  
## 94 27 Dmaia Curry 15m  
## 95 27 Dmaia Curry 30m  
## 96 27 Dmaia Curry 60m  
## 97 27 Dmaia Curry 90m  
## 98 27 Dmaia Curry 2h  
## 99 27 Dmaia Curry 3h  
## 100 27 Dmaia Curry 6h  
## 101 27 Dmaia Curry 24h  
## 102 28 Dmaia Curry 40s  
## 103 28 Dmaia Curry 2m  
## 104 28 Dmaia Curry 5m  
## 105 28 Dmaia Curry 15m  
## 106 28 Dmaia Curry 30m  
## 107 28 Dmaia Curry 60m  
## 108 28 Dmaia Curry 90m  
## 109 28 Dmaia Curry 2h  
## 110 28 Dmaia Curry 3h  
## 111 28 Dmaia Curry 6h  
## 112 28 Dmaia Curry 24h  
## 113 29 Dmaia Curry 40s  
## 114 29 Dmaia Curry 2m  
## 115 29 Dmaia Curry 5m  
## 116 29 Dmaia Curry 15m  
## 117 29 Dmaia Curry 30m  
## 118 29 Dmaia Curry 60m  
## 119 29 Dmaia Curry 90m  
## 120 29 Dmaia Curry 2h  
## 121 29 Dmaia Curry 3h  
## 122 29 Dmaia Curry 6h  
## 123 29 Dmaia Curry 24h  
## 124 30 Dmaia Curry 40s  
## 125 30 Dmaia Curry 2m  
## 126 30 Dmaia Curry 5m  
## 127 30 Dmaia Curry 15m  
## 128 30 Dmaia Curry 30m  
## 129 30 Dmaia Curry 60m  
## 130 30 Dmaia Curry 90m  
## 131 30 Dmaia Curry 2h  
## 132 30 Dmaia Curry 3h  
## 133 30 Dmaia Curry 6h  
## 134 30 Dmaia Curry 24h

## Merge function used to combine two tables with common variable(s)

test <- merge(reading, sample)