Assignement 2

2024-01-10

Introduction :

This assignment consists of performing data cleaning and manipulation, and then some statistical analysis.

Dataset:

The dataset is retrieved from Rwanda DHS (Demographic and Health Survey) 2020. The type of dataset used here is Household member. You will get data in two files: main SPSS File and Map File (for descriptions).

Your Assignments steps:

1. Read the dataset in R.

```
options(warn = -1)
# required package
library(haven)

# import data
houseH <- read_sav("DHS2020/RWPR81FL.sav")


# data dimension
(dims <-dim(houseH))
```

```
## [1] 55920   581
```

The dataset has 55920 observations and 581 features

- Visualize, inspect and get familiar with the data

```
# your code here
View(houseH)
str(houseH) # Understanding the data structure (types, dimensions, column details).
```

```
## tibble [55,920 x 581] (S3: tbl_df/tbl/data.frame)
##  $ HHID      : chr [1:55920] "       1   1" "       1   3" "       1   3" "       1   3" ...
##   ..- attr(*, "label")= chr "Case Identification"
##   ..- attr(*, "format.spss")= chr "A12"
##   ..- attr(*, "display_width")= int 14
##  $ HVIDX     : num [1:55920] 1 1 2 3 4 5 1 1 2 3 ...
##   ..- attr(*, "label")= chr "Line number"
```

```
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV000     : chr [1:55920] "RW7" "RW7" "RW7" "RW7" ...
##   ..- attr(*, "label")= chr "Country code and phase"
##   ..- attr(*, "format.spss")= chr "A3"
##   ..- attr(*, "display_width")= int 7
##  $ HV001     : num [1:55920] 1 1 1 1 1 1 1 1 1 1 ...
##   ..- attr(*, "label")= chr "Cluster number"
##   ..- attr(*, "format.spss")= chr "F6.0"
##  $ HV002     : num [1:55920] 1 3 3 3 3 3 4 5 5 5 ...
##   ..- attr(*, "label")= chr "Household number"
##   ..- attr(*, "format.spss")= chr "F6.0"
##  $ HV003     : dbl+lbl [1:55920] 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 1, 1, 1, 1, 1, 1, 1...
##    ..@ label        : chr "Respondent's line number (answering Household questionnaire)"
##    ..@ format.spss  : chr "F3.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num 0
##    .. ..- attr(*, "names")= chr "Incomplete household"
##  $ HV004     : num [1:55920] 1 1 1 1 1 1 1 1 1 1 ...
##   ..- attr(*, "label")= chr "Ultimate area unit"
##   ..- attr(*, "format.spss")= chr "F4.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV005     : num [1:55920] 1454022 1454022 1454022 1454022 1454022 ...
##   ..- attr(*, "label")= chr "Household sample weight (6 decimals)"
##   ..- attr(*, "format.spss")= chr "F8.0"
##   ..- attr(*, "display_width")= int 10
##  $ HV006     : num [1:55920] 6 6 6 6 6 6 6 6 6 6 ...
##   ..- attr(*, "label")= chr "Month of interview"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV007     : num [1:55920] 2020 2020 2020 2020 2020 2020 2020 2020 2020 2020 ...
##   ..- attr(*, "label")= chr "Year of interview"
##   ..- attr(*, "format.spss")= chr "F4.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV008     : num [1:55920] 1446 1446 1446 1446 1446 ...
##   ..- attr(*, "label")= chr "Date of interview (CMC)"
##   ..- attr(*, "format.spss")= chr "F4.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV008A    : num [1:55920] 43994 43993 43993 43993 43993 ...
##   ..- attr(*, "label")= chr "Date of interview Century Day Code (CDC)"
##   ..- attr(*, "format.spss")= chr "F5.0"
##  $ HV009     : num [1:55920] 1 5 5 5 5 5 1 4 4 4 ...
##   ..- attr(*, "label")= chr "Number of household members"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV010     : num [1:55920] 0 1 1 1 1 1 1 1 1 1 ...
##   ..- attr(*, "label")= chr "Number of eligible women in household"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV011     : num [1:55920] 0 1 1 1 1 1 0 1 1 1 ...
##   ..- attr(*, "label")= chr "Number of eligible men in household"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV012     : num [1:55920] 1 3 3 3 3 3 1 4 4 4 ...
```

```
##   ..- attr(*, "label")= chr "Number of de jure members"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV013     : num [1:55920] 1 5 5 5 5 5 1 4 4 4 ...
##   ..- attr(*, "label")= chr "Number of de facto members"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV014     : num [1:55920] 0 0 0 0 0 0 0 1 1 1 ...
##   ..- attr(*, "label")= chr "Number of children 5 and under (de jure)"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV015     : dbl+lbl [1:55920] 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
##    ..@ label        : chr "Result of household interview"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:9] 1 2 3 4 5 6 7 8 9
##    .. ..- attr(*, "names")= chr [1:9] "Completed" "No Household member/no competent member at home" "
##  $ HV016     : num [1:55920] 12 11 11 11 11 11 10 11 11 11 ...
##   ..- attr(*, "label")= chr "Day of interview"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV017     : num [1:55920] 1 1 1 1 1 1 1 1 1 1 ...
##   ..- attr(*, "label")= chr "Number of visits"
##   ..- attr(*, "format.spss")= chr "F1.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV018     : num [1:55920] 804 804 804 804 804 804 804 804 804 804 ...
##   ..- attr(*, "label")= chr "Interviewer identification"
##   ..- attr(*, "format.spss")= chr "F5.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV019     : num [1:55920] NA NA NA NA NA NA NA NA NA NA ...
##   ..- attr(*, "label")= chr "NA - Keyer identification"
##   ..- attr(*, "format.spss")= chr "F3.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV020     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label        : chr "Ever-married sample"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "All woman sample" "Ever married sample"
##  $ HV021     : num [1:55920] 1 1 1 1 1 1 1 1 1 1 ...
##   ..- attr(*, "label")= chr "Primary sampling unit"
##   ..- attr(*, "format.spss")= chr "F4.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV022     : dbl+lbl [1:55920] 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4...
##    ..@ label        : chr "Sample strata for sampling errors"
##    ..@ format.spss  : chr "F4.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:60] 1 2 3 4 5 6 7 8 9 10 ...
##    .. ..- attr(*, "names")= chr [1:60] "Nyarugenge" "Nyarugenge" "Gasabo" "Gasabo" ...
##  $ HV023     : dbl+lbl [1:55920] 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4...
##    ..@ label        : chr "Stratification used in sample design"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:60] 1 2 3 4 5 6 7 8 9 10 ...
```

```
##    .. ..- attr(*, "names")= chr [1:60] "Nyarugenge" "Nyarugenge" "Gasabo" "Gasabo" ...
##  $ HV024     : dbl+lbl [1:55920] 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
##    ..@ label        : chr "Region"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:5] 1 2 3 4 5
##    .. ..- attr(*, "names")= chr [1:5] "Kigali" "South" "West" "North" ...
##  $ HV025     : dbl+lbl [1:55920] 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2...
##    ..@ label        : chr "Type of place of residence"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 1 2
##    .. ..- attr(*, "names")= chr [1:2] "Urban" "Rural"
##  $ HV026     : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label        : chr "NA - Place of residence"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:4] 0 1 2 3
##    .. ..- attr(*, "names")= chr [1:4] "Capital, large city" "Small city" "Town" "Countryside"
##  $ HV027     : dbl+lbl [1:55920] 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
##    ..@ label        : chr "Household selected for male interview"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:3] 0 1 2
##    .. ..- attr(*, "names")= chr [1:3] "Not selected" "Men's survey" "Husband's survey"
##  $ HV028     : num [1:55920] 0 1453468 1453468 1453468 1453468 ...
##   ..- attr(*, "label")= chr "Household weight for male subsample (6 decimals)"
##   ..- attr(*, "format.spss")= chr "F8.0"
##   ..- attr(*, "display_width")= int 10
##  $ HV030     : num [1:55920] 800 800 800 800 800 800 800 800 800 800 ...
##   ..- attr(*, "label")= chr "Field supervisor"
##   ..- attr(*, "format.spss")= chr "F5.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV031     : num [1:55920] NA NA NA NA NA NA NA NA NA NA ...
##   ..- attr(*, "label")= chr "NA - Field editor"
##   ..- attr(*, "format.spss")= chr "F5.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV032     : num [1:55920] NA NA NA NA NA NA NA NA NA NA ...
##   ..- attr(*, "label")= chr "NA - Office editor"
##   ..- attr(*, "format.spss")= chr "F3.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV035     : num [1:55920] 0 1 1 1 1 1 0 0 0 0 ...
##   ..- attr(*, "label")= chr "Number of eligible children for height and weight"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV040     : num [1:55920] 1831 1831 1831 1831 1831 ...
##   ..- attr(*, "label")= chr "Cluster altitude in meters"
##   ..- attr(*, "format.spss")= chr "F4.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV041     : num [1:55920] 0 2 2 2 2 2 1 2 2 2 ...
##   ..- attr(*, "label")= chr "Total adults measured"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV042     : dbl+lbl [1:55920] 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
```

```
##    ..@ label        : chr "Household selected for hemoglobin"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:3] 0 1 2
##    .. ..- attr(*, "names")= chr [1:3] "Not selected" "Selected (DHS subsample)" "Selected (Micronutri
##  $ HV044     : dbl+lbl [1:55920] 0, 2, 2, 2, 2, 2, 2, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2...
##    ..@ label        : chr "Household selected for Domestic Violence module"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:3] 0 1 2
##    .. ..- attr(*, "names")= chr [1:3] "Household not selected" "Household selected: DV men" "Household
##  $ HV045A    : dbl+lbl [1:55920] 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2...
##    ..@ label      : chr "Language of questionnaire"
##    ..@ format.spss: chr "F3.0"
##    ..@ labels     : Named num [1:6] 1 2 3 4 5 6
##    .. ..- attr(*, "names")= chr [1:6] "English" "Language 2" "Language 3" "Language 4" ...
##  $ HV045B    : dbl+lbl [1:55920] 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2...
##    ..@ label      : chr "Language of interview"
##    ..@ format.spss: chr "F3.0"
##    ..@ labels     : Named num [1:6] 1 2 3 4 5 6
##    .. ..- attr(*, "names")= chr [1:6] "English" "Language 2" "Language 3" "Language 4" ...
##  $ HV045C    : dbl+lbl [1:55920] 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2...
##    ..@ label      : chr "Native language of respondent"
##    ..@ format.spss: chr "F3.0"
##    ..@ labels     : Named num [1:6] 1 2 3 4 5 6
##    .. ..- attr(*, "names")= chr [1:6] "English" "Language 2" "Language 3" "Language 4" ...
##  $ HV046     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label        : chr "Translator used"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV801     : num [1:55920] 1052 1218 1218 1218 1218 ...
##   ..- attr(*, "label")= chr "Time interview started (hhmm - 24 hour clock)"
##   ..- attr(*, "format.spss")= chr "F4.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV802     : num [1:55920] 1104 1256 1256 1256 1256 ...
##   ..- attr(*, "label")= chr "Time interview ended (hhmm - 24 hour clock)"
##   ..- attr(*, "format.spss")= chr "F4.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV803     : dbl+lbl [1:55920] 12, 38, 38, 38, 38, 38,  9, 17, 17, 17, 17, 24, 24, ...
##    ..@ label        : chr "Length of interview in minutes"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:3] 95 96 97
##    .. ..- attr(*, "names")= chr [1:3] "95+" "2+ visits" "Inconsistent"
##  $ HV804     : num [1:55920] NA 2 2 2 2 2 1 1 1 1 ...
##   ..- attr(*, "label")= chr "Number of visits for biomarker"
##   ..- attr(*, "format.spss")= chr "F1.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV807D    : num [1:55920] NA 17 17 17 17 17 11 17 17 17 ...
##   ..- attr(*, "label")= chr "Day of biomarker visit"
##   ..- attr(*, "format.spss")= chr "F2.0"
##  $ HV807M    : num [1:55920] NA 6 6 6 6 6 6 6 6 6 ...
```

```
##   ..- attr(*, "label")= chr "Month of biomarker visit"
##   ..- attr(*, "format.spss")= chr "F2.0"
##  $ HV807Y    : num [1:55920] NA 2020 2020 2020 2020 2020 2020 2020 2020 2020 ...
##   ..- attr(*, "label")= chr "Year of biomarker visit"
##   ..- attr(*, "format.spss")= chr "F4.0"
##  $ HV807C    : num [1:55920] NA 1446 1446 1446 1446 ...
##   ..- attr(*, "label")= chr "Date of biomarker (CMC)"
##   ..- attr(*, "format.spss")= chr "F4.0"
##  $ HV807A    : num [1:55920] NA 43999 43999 43999 43999 ...
##   ..- attr(*, "label")= chr "Date of biomarker Century Day Code (CDC)"
##   ..- attr(*, "format.spss")= chr "F5.0"
##  $ HV201     : dbl+lbl [1:55920] 14, 14, 14, 14, 14, 14, 14, 14, 14, 14, 14, 14, 14, 14, ...
##    ..@ label        : chr "Source of drinking water"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:19] 10 11 12 13 14 20 21 30 31 32 ...
##    .. ..- attr(*, "names")= chr [1:19] "PIPED WATER" "Piped into dwelling" "Piped to yard/plot" "Pip
##  $ HV202     : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label        : chr "Source of non-drinking water"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:19] 10 11 12 13 14 20 21 30 31 32 ...
##    .. ..- attr(*, "names")= chr [1:19] "PIPED WATER" "Piped into dwelling" "Piped to yard/plot" "Pip
##  $ HV201A    : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label      : chr "NA - Water not available for at least a day last two weeks"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No, not interrupted for a full day" "Yes, interrupted for a fu
##  $ HV204     : dbl+lbl [1:55920] 90, 60, 60, 60, 60, 60, 30, 60, 60, 60, 60, 10, 10, ...
##    ..@ label        : chr "Time to get to water source (minutes)"
##    ..@ format.spss  : chr "F3.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 996 998
##    .. ..- attr(*, "names")= chr [1:2] "On premises" "Don't know"
##  $ HV205     : dbl+lbl [1:55920] 22, 22, 22, 22, 22, 22, 22, 22, 22, 22, 22, 22, 22, 22, ...
##    ..@ label        : chr "Type of toilet facility"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:16] 10 11 12 13 14 15 20 21 22 23 ...
##    .. ..- attr(*, "names")= chr [1:16] "FLUSH TOILET" "Flush to piped sewer system" "Flush to septic
##  $ HV206     : dbl+lbl [1:55920] 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
##    ..@ label        : chr "Has electricity"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV207     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0...
##    ..@ label        : chr "Has radio"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV208     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label        : chr "Has television"
```

```
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV209     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label        : chr "Has refrigerator"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV210     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label        : chr "Has bicycle"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV211     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label        : chr "Has motorcycle/scooter"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV212     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label        : chr "Has car/truck"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV213     : dbl+lbl [1:55920] 11, 34, 34, 34, 34, 34, 11, 34, 34, 34, 34, 11, 11, ...
##    ..@ label        : chr "Main floor material"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:13] 10 11 12 20 21 22 30 31 32 33 ...
##    .. ..- attr(*, "names")= chr [1:13] "NATURAL" "Earth/sand" "Dung" "RUDIMENTARY" ...
##  $ HV214     : dbl+lbl [1:55920] 36, 31, 31, 31, 31, 31, 21, 36, 36, 36, 36, 21, 21, ...
##    ..@ label        : chr "Main wall material"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:17] 10 11 20 21 22 23 24 25 30 31 ...
##    .. ..- attr(*, "names")= chr [1:17] "NATURAL" "Cane/palm/trunks" "RUDIMENTARY" "Bamboo/tree trunks
##  $ HV215     : dbl+lbl [1:55920] 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, ...
##    ..@ label        : chr "Main roof material"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:12] 10 11 12 20 21 30 31 32 33 34 ...
##    .. ..- attr(*, "names")= chr [1:12] "NATURAL" "No roof" "Thatch/palm leaf" "RUDIMENTARY" ...
##  $ HV216     : num [1:55920] 1 2 2 2 2 2 3 5 5 5 ...
##   ..- attr(*, "label")= chr "Number of rooms used for sleeping"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV217     : dbl+lbl [1:55920] 1, 4, 4, 4, 4, 4, 1, 2, 2, 2, 2, 4, 4, 4, 4, 2, 2, 2...
##    ..@ label        : chr "Relationship structure"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
```

```
##    ..@ labels       : Named num [1:6] 0 1 2 3 4 5
##    .. ..- attr(*, "names")= chr [1:6] "No adults" "One adult" "Two adults, opposite sex" "Two adults
##  $ HV218     : num [1:55920] 1 1 1 1 1 1 1 1 1 1 ...
##   ..- attr(*, "label")= chr "Line number of head of household"
##   ..- attr(*, "format.spss")= chr "F2.0"
##   ..- attr(*, "display_width")= int 7
##  $ HV219     : dbl+lbl [1:55920] 2, 2, 2, 2, 2, 2, 2, 1, 1, 1, 1, 2, 2, 2, 2, 1, 1, 1...
##    ..@ label        : chr "Sex of head of household"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 1 2
##    .. ..- attr(*, "names")= chr [1:2] "Male" "Female"
##  $ HV220     : dbl+lbl [1:55920] 70, 58, 58, 58, 58, 58, 42, 34, 34, 34, 34, 68, 68, ...
##    ..@ label        : chr "Age of head of household"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 97 98
##    .. ..- attr(*, "names")= chr [1:2] "97+" "Don't know"
##  $ HV221     : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label        : chr "Has telephone (land-line)"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV225     : dbl+lbl [1:55920] 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1...
##    ..@ label        : chr "Share toilet with other households"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV226     : dbl+lbl [1:55920] 9, 9, 9, 9, 9, 9, 9, 8, 8, 8, 8, 9, 9, 9, 9, 9, 9, 9...
##    ..@ label        : chr "Type of cooking fuel"
##    ..@ format.spss  : chr "F2.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:15] 1 2 3 4 5 6 7 8 9 10 ...
##    .. ..- attr(*, "names")= chr [1:15] "Electricity" "LPG / natural gas" "Natural gas" "Biogas" ...
##  $ HV227     : dbl+lbl [1:55920] 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
##    ..@ label        : chr "Has mosquito bed net for sleeping"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV228     : dbl+lbl [1:55920] NA,  1,  1,  1,  1,  1, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label        : chr "Children under 5 slept under mosquito bed net last night"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:4] 0 1 2 3
##    .. ..- attr(*, "names")= chr [1:4] "No" "All children" "Some children" "No net in household"
##  $ HV230A    : dbl+lbl [1:55920] 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2...
##    ..@ label      : chr "Place where household members wash their hands"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:5] 1 2 3 4 5
##    .. ..- attr(*, "names")= chr [1:5] "Observed, fixed place" "Observed, mobile place" "Not observed
##  $ HV230B    : dbl+lbl [1:55920]  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0, ...
```

```
##    ..@ label      : chr "Presence of water at hand washing place"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "Water not available" "Water is available"
##  $ HV232     : dbl+lbl [1:55920]  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0, ...
##    ..@ label        : chr "Items present: Soap or detergent"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV232B    : dbl+lbl [1:55920]  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0, ...
##    ..@ label      : chr "Items present: Ash, mud, sand"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV232C    : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label      : chr "NA - Items present: CS"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV232D    : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label      : chr "NA - Items present: CS"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV232E    : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label      : chr "NA - Items present: CS"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes"
##  $ HV232Y    : dbl+lbl [1:55920]  1,  1,  1,  1,  1,  1,  1,  1,  1,  1,  1,  1,  1, ...
##    ..@ label      : chr "Items present: None"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:2] 0 1
##    .. ..- attr(*, "names")= chr [1:2] "No" "Yes: no cleansing agent observed"
##  $ HV234     : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label        : chr "NA - Result of salt test for iodine (PPM)"
##    ..@ format.spss  : chr "F3.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:6] 0 7 15 30 994 995
##    .. ..- attr(*, "names")= chr [1:6] "0 PPM (no iodine)" "Below 15 PPM" "15 PPM and above" "30 PPM"
##  $ HV234A    : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label      : chr "NA - Result of salt test for iodine"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:4] 0 1 3 6
##    .. ..- attr(*, "names")= chr [1:4] "No iodine" "Iodine present" "No salt in household" "Salt not
##  $ HV235     : dbl+lbl [1:55920] 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3...
##    ..@ label        : chr "Location of source for water"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:3] 1 2 3
##    .. ..- attr(*, "names")= chr [1:3] "In own dwelling" "In own yard/plot" "Elsewhere"
##  $ HV236     : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label        : chr "NA - Person fetching water"
```

```
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:5] 1 2 3 4 6
##    .. ..- attr(*, "names")= chr [1:5] "Adult woman" "Adult man" "Female child under 15 years old" "Ma
##  $ HV237     : dbl+lbl [1:55920] 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0...
##    ..@ label        : chr "Anything done to water to make safe to drink"
##    ..@ format.spss  : chr "F1.0"
##    ..@ display_width: int 7
##    ..@ labels       : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##  $ HV237A    : dbl+lbl [1:55920] 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0...
##    ..@ label      : chr "Water usually treated by: boil"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##  $ HV237B    : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label      : chr "Water usually treated by: add bleach/chlorine"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##  $ HV237C    : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label      : chr "Water usually treated by: strain through a cloth"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##  $ HV237D    : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0...
##    ..@ label      : chr "Water usually treated by: use water filter"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##  $ HV237E    : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label      : chr "Water usually treated by: solar disinfection"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##  $ HV237F    : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label      : chr "Water usually treated by: let it stand and settle"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##  $ HV237G    : dbl+lbl [1:55920] 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
##    ..@ label      : chr "Water usually treated by: battled water (CS)"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##  $ HV237H    : dbl+lbl [1:55920] NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
##    ..@ label      : chr "NA - Water usually treated by: CS"
##    ..@ format.spss: chr "F1.0"
##    ..@ labels     : Named num [1:3] 0 1 8
##    .. ..- attr(*, "names")= chr [1:3] "No" "Yes" "Don't know"
##   [list output truncated]
```

```
data.frame(summary(houseH))  # summary statistics for each column
```

```
##      Var1         Var2                Freq
## 1                 HHID  Length:55920
## 2                 HHID  Class :character
## 3                 HHID  Mode  :character
## 4                 HHID                <NA>
## 5                 HHID                <NA>
## 6                 HHID                <NA>
## 7                 HHID                <NA>
## 8                HVIDX    Min.   : 1.000
## 9                HVIDX    1st Qu.: 2.000
## 10               HVIDX    Median : 3.000
## 11               HVIDX    Mean   : 3.126
## 12               HVIDX    3rd Qu.: 4.000
## 13               HVIDX    Max.   :16.000
## 14               HVIDX                <NA>
## 15               HV000  Length:55920
## 16               HV000  Class :character
## 17               HV000  Mode  :character
## 18               HV000                <NA>
## 19               HV000                <NA>
## 20               HV000                <NA>
## 21               HV000                <NA>
## 22               HV001     Min.   :  1.0
## 23               HV001     1st Qu.:124.0
## 24               HV001     Median :251.0
## 25               HV001     Mean   :249.9
## 26               HV001     3rd Qu.:374.0
## 27               HV001     Max.   :500.0
## 28               HV001                <NA>
## 29               HV002     Min.   : 1.00
## 30               HV002     1st Qu.: 7.00
## 31               HV002     Median :14.00
## 32               HV002     Mean   :13.96
## 33               HV002     3rd Qu.:21.00
## 34               HV002     Max.   :27.00
## 35               HV002                <NA>
## 36               HV003     Min.   :1.000
## 37               HV003     1st Qu.:1.000
## 38               HV003     Median :1.000
## 39               HV003     Mean   :1.422
## 40               HV003     3rd Qu.:2.000
## 41               HV003     Max.   :9.000
## 42               HV003                <NA>
## 43               HV004     Min.   :  1.0
## 44               HV004     1st Qu.:124.0
## 45               HV004     Median :251.0
## 46               HV004     Mean   :249.9
## 47               HV004     3rd Qu.:374.0
## 48               HV004     Max.   :500.0
## 49               HV004                <NA>
## 50               HV005   Min.   :  99458
## 51               HV005   1st Qu.: 839858
## 52               HV005   Median : 971238
## 53               HV005   Mean   :1002685
```

```
## 54              HV005   3rd Qu.:1129589
## 55              HV005   Max.   :3323115
## 56              HV005                <NA>
## 57              HV006    Min.   : 1.000
## 58              HV006    1st Qu.: 2.000
## 59              HV006    Median : 6.000
## 60              HV006    Mean   : 5.768
## 61              HV006    3rd Qu.:11.000
## 62              HV006    Max.   :12.000
## 63              HV006                <NA>
## 64              HV007      Min.   :2019
## 65              HV007      1st Qu.:2019
## 66              HV007      Median :2020
## 67              HV007      Mean   :2020
## 68              HV007      3rd Qu.:2020
## 69              HV007      Max.   :2020
## 70              HV007                 <NA>
## 71              HV008      Min.   :1439
## 72              HV008      1st Qu.:1440
## 73              HV008      Median :1442
## 74              HV008      Mean   :1443
## 75              HV008      3rd Qu.:1446
## 76              HV008      Max.   :1447
## 77              HV008                 <NA>
## 78             HV008A     Min.   :43780
## 79             HV008A     1st Qu.:43826
## 80             HV008A     Median :43872
## 81             HV008A     Mean   :43891
## 82             HV008A     3rd Qu.:43992
## 83             HV008A     Max.   :44031
## 84             HV008A                 <NA>
## 85              HV009    Min.   : 1.000
## 86              HV009    1st Qu.: 4.000
## 87              HV009    Median : 5.000
## 88              HV009    Mean   : 5.251
## 89              HV009    3rd Qu.: 6.000
## 90              HV009    Max.   :16.000
## 91              HV009                <NA>
## 92              HV010     Min.   :0.000
## 93              HV010     1st Qu.:1.000
## 94              HV010     Median :1.000
## 95              HV010     Mean   :1.365
## 96              HV010     3rd Qu.:2.000
## 97              HV010     Max.   :6.000
## 98              HV010                <NA>
## 99              HV011    Min.   :0.0000
## 100             HV011    1st Qu.:0.0000
## 101             HV011    Median :0.0000
## 102             HV011    Mean   :0.5996
## 103             HV011    3rd Qu.:1.0000
## 104             HV011    Max.   :6.0000
## 105             HV011                <NA>
## 106             HV012    Min.   : 0.000
## 107             HV012    1st Qu.: 4.000
```

```
## 108             HV012    Median : 5.000
## 109             HV012    Mean   : 5.178
## 110             HV012    3rd Qu.: 6.000
## 111             HV012    Max.   :16.000
## 112             HV012                <NA>
## 113             HV013    Min.   : 0.000
## 114             HV013    1st Qu.: 4.000
## 115             HV013    Median : 5.000
## 116             HV013    Mean   : 5.194
## 117             HV013    3rd Qu.: 6.000
## 118             HV013    Max.   :16.000
## 119             HV013                <NA>
## 120             HV014    Min.   :0.0000
## 121             HV014    1st Qu.:0.0000
## 122             HV014    Median :1.0000
## 123             HV014    Mean   :0.9224
## 124             HV014    3rd Qu.:2.0000
## 125             HV014    Max.   :6.0000
## 126             HV014                <NA>
## 127             HV015         Min.   :1
## 128             HV015         1st Qu.:1
## 129             HV015         Median :1
## 130             HV015         Mean   :1
## 131             HV015         3rd Qu.:1
## 132             HV015         Max.   :1
## 133             HV015                <NA>
## 134             HV016     Min.   : 1.00
## 135             HV016     1st Qu.: 9.00
## 136             HV016     Median :15.00
## 137             HV016     Mean   :15.44
## 138             HV016     3rd Qu.:22.00
## 139             HV016     Max.   :31.00
## 140             HV016                <NA>
## 141             HV017      Min.   :1.00
## 142             HV017      1st Qu.:1.00
## 143             HV017      Median :1.00
## 144             HV017      Mean   :1.07
## 145             HV017      3rd Qu.:1.00
## 146             HV017      Max.   :5.00
## 147             HV017                <NA>
## 148             HV018    Min.   : 100.0
## 149             HV018    1st Qu.: 501.0
## 150             HV018    Median : 902.0
## 151             HV018    Mean   : 889.3
## 152             HV018    3rd Qu.:1303.0
## 153             HV018    Max.   :1704.0
## 154             HV018                <NA>
## 155             HV019       Min.   : NA
## 156             HV019       1st Qu.: NA
## 157             HV019       Median : NA
## 158             HV019       Mean   :NaN
## 159             HV019       3rd Qu.: NA
## 160             HV019       Max.   : NA
## 161             HV019     NA's   :55920
```

```
## 162             HV020         Min.   :0
## 163             HV020         1st Qu.:0
## 164             HV020         Median :0
## 165             HV020         Mean   :0
## 166             HV020         3rd Qu.:0
## 167             HV020         Max.   :0
## 168             HV020                <NA>
## 169             HV021     Min.   :  1.0
## 170             HV021     1st Qu.:124.0
## 171             HV021     Median :251.0
## 172             HV021     Mean   :249.9
## 173             HV021     3rd Qu.:374.0
## 174             HV021     Max.   :500.0
## 175             HV021                <NA>
## 176             HV022     Min.   : 1.00
## 177             HV022     1st Qu.:16.00
## 178             HV022     Median :30.00
## 179             HV022     Mean   :30.84
## 180             HV022     3rd Qu.:46.00
## 181             HV022     Max.   :60.00
## 182             HV022                <NA>
## 183             HV023     Min.   : 1.00
## 184             HV023     1st Qu.:16.00
## 185             HV023     Median :30.00
## 186             HV023     Mean   :30.84
## 187             HV023     3rd Qu.:46.00
## 188             HV023     Max.   :60.00
## 189             HV023                <NA>
## 190             HV024     Min.   :1.000
## 191             HV024     1st Qu.:2.000
## 192             HV024     Median :3.000
## 193             HV024     Mean   :3.166
## 194             HV024     3rd Qu.:4.000
## 195             HV024     Max.   :5.000
## 196             HV024                <NA>
## 197             HV025     Min.   :1.000
## 198             HV025     1st Qu.:2.000
## 199             HV025     Median :2.000
## 200             HV025     Mean   :1.787
## 201             HV025     3rd Qu.:2.000
## 202             HV025     Max.   :2.000
## 203             HV025                <NA>
## 204             HV026       Min.   : NA
## 205             HV026       1st Qu.: NA
## 206             HV026       Median : NA
## 207             HV026       Mean   :NaN
## 208             HV026       3rd Qu.: NA
## 209             HV026       Max.   : NA
## 210             HV026     NA's   :55920
## 211             HV027    Min.   :0.0000
## 212             HV027    1st Qu.:0.0000
## 213             HV027    Median :0.0000
## 214             HV027    Mean   :0.4995
## 215             HV027    3rd Qu.:1.0000
```

```
## 216              HV027    Max.   :1.0000
## 217              HV027                <NA>
## 218              HV028   Min.   :      0
## 219              HV028   1st Qu.:      0
## 220              HV028   Median :      0
## 221              HV028   Mean   : 499383
## 222              HV028   3rd Qu.: 970868
## 223              HV028   Max.   :3321849
## 224              HV028                <NA>
## 225              HV030    Min.   : 100.0
## 226              HV030    1st Qu.: 400.0
## 227              HV030    Median : 900.0
## 228              HV030    Mean   : 884.9
## 229              HV030    3rd Qu.:1300.0
## 230              HV030    Max.   :1700.0
## 231              HV030                <NA>
## 232              HV031       Min.   : NA
## 233              HV031       1st Qu.: NA
## 234              HV031       Median : NA
## 235              HV031       Mean   :NaN
## 236              HV031       3rd Qu.: NA
## 237              HV031       Max.   : NA
## 238              HV031     NA's   :55920
## 239              HV032       Min.   : NA
## 240              HV032       1st Qu.: NA
## 241              HV032       Median : NA
## 242              HV032       Mean   :NaN
## 243              HV032       3rd Qu.: NA
## 244              HV032       Max.   : NA
## 245              HV032     NA's   :55920
## 246              HV035    Min.   :0.0000
## 247              HV035    1st Qu.:0.0000
## 248              HV035    Median :0.0000
## 249              HV035    Mean   :0.3953
## 250              HV035    3rd Qu.:1.0000
## 251              HV035    Max.   :5.0000
## 252              HV035                <NA>
## 253              HV040      Min.   : 968
## 254              HV040      1st Qu.:1489
## 255              HV040      Median :1640
## 256              HV040      Mean   :1709
## 257              HV040      3rd Qu.:1860
## 258              HV040      Max.   :3095
## 259              HV040                <NA>
## 260              HV041     Min.   :0.000
## 261              HV041     1st Qu.:0.000
## 262              HV041     Median :0.000
## 263              HV041     Mean   :1.301
## 264              HV041     3rd Qu.:2.000
## 265              HV041     Max.   :9.000
## 266              HV041                 <NA>
## 267              HV042     Min.   :0.000
## 268              HV042     1st Qu.:1.000
## 269              HV042     Median :1.000
```

```
## 270             HV042     Mean   :1.043
## 271             HV042     3rd Qu.:2.000
## 272             HV042     Max.   :2.000
## 273             HV042                <NA>
## 274             HV044    Min.   :0.0000
## 275             HV044    1st Qu.:0.0000
## 276             HV044    Median :0.0000
## 277             HV044    Mean   :0.7688
## 278             HV044    3rd Qu.:2.0000
## 279             HV044    Max.   :2.0000
## 280             HV044                <NA>
## 281            HV045A     Min.   :1.000
## 282            HV045A     1st Qu.:2.000
## 283            HV045A     Median :2.000
## 284            HV045A     Mean   :1.998
## 285            HV045A     3rd Qu.:2.000
## 286            HV045A     Max.   :2.000
## 287            HV045A                <NA>
## 288            HV045B     Min.   :1.000
## 289            HV045B     1st Qu.:2.000
## 290            HV045B     Median :2.000
## 291            HV045B     Mean   :1.999
## 292            HV045B     3rd Qu.:2.000
## 293            HV045B     Max.   :2.000
## 294            HV045B                <NA>
## 295            HV045C     Min.   :1.000
## 296            HV045C     1st Qu.:2.000
## 297            HV045C     Median :2.000
## 298            HV045C     Mean   :1.999
## 299            HV045C     3rd Qu.:2.000
## 300            HV045C     Max.   :2.000
## 301            HV045C                <NA>
## 302             HV046   Min.   :0.00000
## 303             HV046   1st Qu.:0.00000
## 304             HV046   Median :0.00000
## 305             HV046   Mean   :0.01545
## 306             HV046   3rd Qu.:0.00000
## 307             HV046   Max.   :1.00000
## 308             HV046                <NA>
## 309             HV801      Min.   : 603
## 310             HV801      1st Qu.:1024
## 311             HV801      Median :1146
## 312             HV801      Mean   :1183
## 313             HV801      3rd Qu.:1324
## 314             HV801      Max.   :2340
## 315             HV801                 <NA>
## 316             HV802      Min.   : 615
## 317             HV802      1st Qu.:1054
## 318             HV802      Median :1214
## 319             HV802      Mean   :1230
## 320             HV802      3rd Qu.:1350
## 321             HV802      Max.   :2355
## 322             HV802                 <NA>
## 323             HV803     Min.   : 3.00
```

```
## 324              HV803     1st Qu.:21.00
## 325              HV803     Median :28.00
## 326              HV803     Mean   :33.44
## 327              HV803     3rd Qu.:38.00
## 328              HV803     Max.   :96.00
## 329              HV803                <NA>
## 330              HV804     Min.   :1.000
## 331              HV804     1st Qu.:1.000
## 332              HV804     Median :1.000
## 333              HV804     Mean   :1.128
## 334              HV804     3rd Qu.:1.000
## 335              HV804     Max.   :3.000
## 336              HV804     NA's   :14696
## 337            HV807D      Min.   : 1.00
## 338            HV807D      1st Qu.: 9.00
## 339            HV807D      Median :15.00
## 340            HV807D      Mean   :15.58
## 341            HV807D      3rd Qu.:22.00
## 342            HV807D      Max.   :31.00
## 343            HV807D      NA's   :14696
## 344            HV807M      Min.   : 1.00
## 345            HV807M      1st Qu.: 2.00
## 346            HV807M      Median : 6.00
## 347            HV807M      Mean   : 5.78
## 348            HV807M      3rd Qu.:11.00
## 349            HV807M      Max.   :12.00
## 350            HV807M      NA's   :14696
## 351            HV807Y       Min.   :2019
## 352            HV807Y       1st Qu.:2019
## 353            HV807Y       Median :2020
## 354            HV807Y       Mean   :2020
## 355            HV807Y       3rd Qu.:2020
## 356            HV807Y       Max.   :2020
## 357            HV807Y      NA's   :14696
## 358            HV807C       Min.   :1439
## 359            HV807C       1st Qu.:1440
## 360            HV807C       Median :1442
## 361            HV807C       Mean   :1443
## 362            HV807C       3rd Qu.:1446
## 363            HV807C       Max.   :1447
## 364            HV807C      NA's   :14696
## 365            HV807A      Min.   :43780
## 366            HV807A      1st Qu.:43827
## 367            HV807A      Median :43873
## 368            HV807A      Mean   :43893
## 369            HV807A      3rd Qu.:43993
## 370            HV807A      Max.   :44031
## 371            HV807A      NA's   :14696
## 372             HV201      Min.   :11.00
## 373             HV201      1st Qu.:14.00
## 374             HV201      Median :41.00
## 375             HV201      Mean   :29.25
## 376             HV201      3rd Qu.:41.00
## 377             HV201      Max.   :96.00
```

```
## 378             HV201               <NA>
## 379             HV202      Min.   :11.0
## 380             HV202      1st Qu.:12.0
## 381             HV202      Median :12.0
## 382             HV202      Mean   :14.8
## 383             HV202      3rd Qu.:12.0
## 384             HV202      Max.   :71.0
## 385             HV202     NA's   :54619
## 386            HV201A       Min.   : NA
## 387            HV201A       1st Qu.: NA
## 388            HV201A       Median : NA
## 389            HV201A       Mean   :NaN
## 390            HV201A       3rd Qu.: NA
## 391            HV201A       Max.   : NA
## 392            HV201A     NA's   :55920
## 393             HV204     Min.   :  0.0
## 394             HV204     1st Qu.: 20.0
## 395             HV204     Median : 40.0
## 396             HV204     Mean   :212.4
## 397             HV204     3rd Qu.: 90.0
## 398             HV204     Max.   :998.0
## 399             HV204               <NA>
## 400             HV205     Min.   :11.00
## 401             HV205     1st Qu.:22.00
## 402             HV205     Median :22.00
## 403             HV205     Mean   :21.95
## 404             HV205     3rd Qu.:23.00
## 405             HV205     Max.   :41.00
## 406             HV205               <NA>
## 407             HV206    Min.   :0.0000
## 408             HV206    1st Qu.:0.0000
## 409             HV206    Median :0.0000
## 410             HV206    Mean   :0.4626
## 411             HV206    3rd Qu.:1.0000
## 412             HV206    Max.   :1.0000
## 413             HV206               <NA>
## 414             HV207    Min.   :0.0000
## 415             HV207    1st Qu.:0.0000
## 416             HV207    Median :0.0000
## 417             HV207    Mean   :0.4249
## 418             HV207    3rd Qu.:1.0000
## 419             HV207    Max.   :1.0000
## 420             HV207               <NA>
## 421             HV208    Min.   :0.0000
## 422             HV208    1st Qu.:0.0000
## 423             HV208    Median :0.0000
## 424             HV208    Mean   :0.1563
## 425             HV208    3rd Qu.:0.0000
## 426             HV208    Max.   :1.0000
## 427             HV208               <NA>
## 428             HV209   Min.   :0.00000
## 429             HV209   1st Qu.:0.00000
## 430             HV209   Median :0.00000
## 431             HV209   Mean   :0.02897
```

```
## 432             HV209   3rd Qu.:0.00000
## 433             HV209   Max.   :1.00000
## 434             HV209               <NA>
## 435             HV210    Min.   :0.0000
## 436             HV210    1st Qu.:0.0000
## 437             HV210    Median :0.0000
## 438             HV210    Mean   :0.1539
## 439             HV210    3rd Qu.:0.0000
## 440             HV210    Max.   :1.0000
## 441             HV210               <NA>
## 442             HV211   Min.   :0.00000
## 443             HV211   1st Qu.:0.00000
## 444             HV211   Median :0.00000
## 445             HV211   Mean   :0.02697
## 446             HV211   3rd Qu.:0.00000
## 447             HV211   Max.   :1.00000
## 448             HV211               <NA>
## 449             HV212   Min.   :0.00000
## 450             HV212   1st Qu.:0.00000
## 451             HV212   Median :0.00000
## 452             HV212   Mean   :0.02273
## 453             HV212   3rd Qu.:0.00000
## 454             HV212   Max.   :1.00000
## 455             HV212               <NA>
## 456             HV213     Min.   :11.00
## 457             HV213     1st Qu.:11.00
## 458             HV213     Median :11.00
## 459             HV213     Mean   :18.78
## 460             HV213     3rd Qu.:34.00
## 461             HV213     Max.   :96.00
## 462             HV213               <NA>
## 463             HV214     Min.   :11.00
## 464             HV214     1st Qu.:23.00
## 465             HV214     Median :23.00
## 466             HV214     Mean   :27.99
## 467             HV214     3rd Qu.:36.00
## 468             HV214     Max.   :96.00
## 469             HV214               <NA>
## 470             HV215     Min.   :11.00
## 471             HV215     1st Qu.:31.00
## 472             HV215     Median :31.00
## 473             HV215     Mean   :31.65
## 474             HV215     3rd Qu.:33.00
## 475             HV215     Max.   :96.00
## 476             HV215               <NA>
## 477             HV216    Min.   : 1.000
## 478             HV216    1st Qu.: 2.000
## 479             HV216    Median : 3.000
## 480             HV216    Mean   : 2.588
## 481             HV216    3rd Qu.: 3.000
## 482             HV216    Max.   :12.000
## 483             HV216               <NA>
## 484             HV217     Min.   :0.000
## 485             HV217     1st Qu.:2.000
```

```
## 486             HV217     Median :4.000
## 487             HV217     Mean   :3.039
## 488             HV217     3rd Qu.:4.000
## 489             HV217     Max.   :5.000
## 490             HV217                <NA>
## 491             HV218         Min.   :1
## 492             HV218         1st Qu.:1
## 493             HV218         Median :1
## 494             HV218         Mean   :1
## 495             HV218         3rd Qu.:1
## 496             HV218         Max.   :1
## 497             HV218                <NA>
## 498             HV219     Min.   :1.000
## 499             HV219     1st Qu.:1.000
## 500             HV219     Median :1.000
## 501             HV219     Mean   :1.268
## 502             HV219     3rd Qu.:2.000
## 503             HV219     Max.   :2.000
## 504             HV219                <NA>
## 505             HV220     Min.   :16.00
## 506             HV220     1st Qu.:35.00
## 507             HV220     Median :43.00
## 508             HV220     Mean   :45.69
## 509             HV220     3rd Qu.:55.00
## 510             HV220     Max.   :98.00
## 511             HV220                <NA>
## 512             HV221  Min.   :0.000000
## 513             HV221  1st Qu.:0.000000
## 514             HV221  Median :0.000000
## 515             HV221  Mean   :0.003129
## 516             HV221  3rd Qu.:0.000000
## 517             HV221  Max.   :1.000000
## 518             HV221                <NA>
## 519             HV225    Min.   :0.0000
## 520             HV225    1st Qu.:0.0000
## 521             HV225    Median :0.0000
## 522             HV225    Mean   :0.1473
## 523             HV225    3rd Qu.:0.0000
## 524             HV225    Max.   :1.0000
## 525             HV225      NA's   :1465
## 526             HV226     Min.   : 1.00
## 527             HV226     1st Qu.: 8.00
## 528             HV226     Median : 8.00
## 529             HV226     Mean   : 7.89
## 530             HV226     3rd Qu.: 8.00
## 531             HV226     Max.   :96.00
## 532             HV226                <NA>
## 533             HV227    Min.   :0.0000
## 534             HV227    1st Qu.:0.0000
## 535             HV227    Median :1.0000
## 536             HV227    Mean   :0.6826
## 537             HV227    3rd Qu.:1.0000
## 538             HV227    Max.   :1.0000
## 539             HV227                <NA>
```

```
## 540              HV228     Min.   :0.000
## 541              HV228     1st Qu.:1.000
## 542              HV228     Median :1.000
## 543              HV228     Mean   :1.513
## 544              HV228     3rd Qu.:3.000
## 545              HV228     Max.   :3.000
## 546              HV228     NA's   :23924
## 547             HV230A     Min.   :1.000
## 548             HV230A     1st Qu.:2.000
## 549             HV230A     Median :2.000
## 550             HV230A     Mean   :2.051
## 551             HV230A     3rd Qu.:2.000
## 552             HV230A     Max.   :5.000
## 553             HV230A                <NA>
## 554             HV230B     Min.   :0.000
## 555             HV230B     1st Qu.:0.000
## 556             HV230B     Median :0.000
## 557             HV230B     Mean   :0.405
## 558             HV230B     3rd Qu.:1.000
## 559             HV230B     Max.   :1.000
## 560             HV230B      NA's   :9227
## 561              HV232     Min.   :0.000
## 562              HV232     1st Qu.:0.000
## 563              HV232     Median :0.000
## 564              HV232     Mean   :0.317
## 565              HV232     3rd Qu.:1.000
## 566              HV232     Max.   :1.000
## 567              HV232      NA's   :9227
## 568             HV232B     Min.   :0.000
## 569             HV232B     1st Qu.:0.000
## 570             HV232B     Median :0.000
## 571             HV232B     Mean   :0.001
## 572             HV232B     3rd Qu.:0.000
## 573             HV232B     Max.   :1.000
## 574             HV232B      NA's   :9227
## 575             HV232C       Min.   : NA
## 576             HV232C       1st Qu.: NA
## 577             HV232C       Median : NA
## 578             HV232C       Mean   :NaN
## 579             HV232C       3rd Qu.: NA
## 580             HV232C       Max.   : NA
## 581             HV232C     NA's   :55920
## 582             HV232D       Min.   : NA
## 583             HV232D       1st Qu.: NA
## 584             HV232D       Median : NA
## 585             HV232D       Mean   :NaN
## 586             HV232D       3rd Qu.: NA
## 587             HV232D       Max.   : NA
## 588             HV232D     NA's   :55920
## 589             HV232E       Min.   : NA
## 590             HV232E       1st Qu.: NA
## 591             HV232E       Median : NA
## 592             HV232E       Mean   :NaN
## 593             HV232E       3rd Qu.: NA
```

```
## 594            HV232E       Max.   : NA
## 595            HV232E     NA's   :55920
## 596            HV232Y     Min.   :0.000
## 597            HV232Y     1st Qu.:0.000
## 598            HV232Y     Median :1.000
## 599            HV232Y     Mean   :0.682
## 600            HV232Y     3rd Qu.:1.000
## 601            HV232Y     Max.   :1.000
## 602            HV232Y      NA's   :9227
## 603             HV234       Min.   : NA
## 604             HV234       1st Qu.: NA
## 605             HV234       Median : NA
## 606             HV234       Mean   :NaN
## 607             HV234       3rd Qu.: NA
## 608             HV234       Max.   : NA
## 609             HV234     NA's   :55920
## 610            HV234A       Min.   : NA
## 611            HV234A       1st Qu.: NA
## 612            HV234A       Median : NA
## 613            HV234A       Mean   :NaN
## 614            HV234A       3rd Qu.: NA
## 615            HV234A       Max.   : NA
## 616            HV234A     NA's   :55920
## 617             HV235     Min.   :1.000
## 618             HV235     1st Qu.:3.000
## 619             HV235     Median :3.000
## 620             HV235     Mean   :2.987
## 621             HV235     3rd Qu.:3.000
## 622             HV235     Max.   :3.000
## 623             HV235      NA's   :9543
## 624             HV236       Min.   : NA
## 625             HV236       1st Qu.: NA
## 626             HV236       Median : NA
## 627             HV236       Mean   :NaN
## 628             HV236       3rd Qu.: NA
## 629             HV236       Max.   : NA
## 630             HV236     NA's   :55920
## 631             HV237    Min.   :0.0000
## 632             HV237    1st Qu.:0.0000
## 633             HV237    Median :0.0000
## 634             HV237    Mean   :0.3697
## 635             HV237    3rd Qu.:1.0000
## 636             HV237    Max.   :8.0000
## 637             HV237                <NA>
## 638            HV237A    Min.   :0.0000
## 639            HV237A    1st Qu.:0.0000
## 640            HV237A    Median :0.0000
## 641            HV237A    Mean   :0.3413
## 642            HV237A    3rd Qu.:1.0000
## 643            HV237A    Max.   :8.0000
## 644            HV237A                <NA>
## 645            HV237B    Min.   :0.0000
## 646            HV237B    1st Qu.:0.0000
## 647            HV237B    Median :0.0000
```

```
## 648            HV237B    Mean   :0.0147
## 649            HV237B    3rd Qu.:0.0000
## 650            HV237B    Max.   :8.0000
## 651            HV237B                <NA>
## 652            HV237C   Min.   :0.00000
## 653            HV237C   1st Qu.:0.00000
## 654            HV237C   Median :0.00000
## 655            HV237C   Mean   :0.00329
## 656            HV237C   3rd Qu.:0.00000
## 657            HV237C   Max.   :8.00000
## 658            HV237C                <NA>
## 659            HV237D   Min.   :0.00000
## 660            HV237D   1st Qu.:0.00000
## 661            HV237D   Median :0.00000
## 662            HV237D   Mean   :0.02107
## 663            HV237D   3rd Qu.:0.00000
## 664            HV237D   Max.   :8.00000
## 665            HV237D                <NA>
## 666            HV237E  Min.   :0.000000
## 667            HV237E  1st Qu.:0.000000
## 668            HV237E  Median :0.000000
## 669            HV237E  Mean   :0.001323
## 670            HV237E  3rd Qu.:0.000000
## 671            HV237E  Max.   :8.000000
## 672            HV237E                <NA>
## 673            HV237F  Min.   :0.000000
## 674            HV237F  1st Qu.:0.000000
## 675            HV237F  Median :0.000000
## 676            HV237F  Mean   :0.002039
## 677            HV237F  3rd Qu.:0.000000
## 678            HV237F  Max.   :8.000000
## 679            HV237F                <NA>
## 680            HV237G  Min.   :0.000000
## 681            HV237G  1st Qu.:0.000000
## 682            HV237G  Median :0.000000
## 683            HV237G  Mean   :0.004828
## 684            HV237G  3rd Qu.:0.000000
## 685            HV237G  Max.   :8.000000
## 686            HV237G                <NA>
## 687            HV237H       Min.   : NA
## 688            HV237H       1st Qu.: NA
## 689            HV237H       Median : NA
## 690            HV237H       Mean   :NaN
## 691            HV237H       3rd Qu.: NA
## 692            HV237H       Max.   : NA
## 693            HV237H     NA's   :55920
## 694            HV237I       Min.   : NA
## 695            HV237I       1st Qu.: NA
## 696            HV237I       Median : NA
## 697            HV237I       Mean   :NaN
## 698            HV237I       3rd Qu.: NA
## 699            HV237I       Max.   : NA
## 700            HV237I     NA's   :55920
## 701            HV237J       Min.   : NA
```

```
## 702            HV237J       1st Qu.: NA
## 703            HV237J       Median : NA
## 704            HV237J       Mean   :NaN
## 705            HV237J       3rd Qu.: NA
## 706            HV237J       Max.   : NA
## 707            HV237J     NA's   :55920
## 708            HV237K       Min.   : NA
## 709            HV237K       1st Qu.: NA
## 710            HV237K       Median : NA
## 711            HV237K       Mean   :NaN
## 712            HV237K       3rd Qu.: NA
## 713            HV237K       Max.   : NA
## 714            HV237K     NA's   :55920
## 715            HV237X  Min.   :0.000000
## 716            HV237X  1st Qu.:0.000000
## 717            HV237X  Median :0.000000
## 718            HV237X  Mean   :0.001556
## 719            HV237X  3rd Qu.:0.000000
## 720            HV237X  Max.   :8.000000
## 721            HV237X                <NA>
## 722            HV237Z  Min.   :0.000000
## 723            HV237Z  1st Qu.:0.000000
## 724            HV237Z  Median :0.000000
## 725            HV237Z  Mean   :0.001001
## 726            HV237Z  3rd Qu.:0.000000
## 727            HV237Z  Max.   :8.000000
## 728            HV237Z                <NA>
## 729             HV238     Min.   : 2.00
## 730             HV238     1st Qu.: 2.00
## 731             HV238     Median : 2.00
## 732             HV238     Mean   : 4.84
## 733             HV238     3rd Qu.: 4.00
## 734             HV238     Max.   :95.00
## 735             HV238     NA's   :47901
## 736            HV238A     Min.   :1.000
## 737            HV238A     1st Qu.:2.000
## 738            HV238A     Median :2.000
## 739            HV238A     Mean   :2.344
## 740            HV238A     3rd Qu.:3.000
## 741            HV238A     Max.   :3.000
## 742            HV238A      NA's   :1465
## 743             HV239       Min.   : NA
## 744             HV239       1st Qu.: NA
## 745             HV239       Median : NA
## 746             HV239       Mean   :NaN
## 747             HV239       3rd Qu.: NA
## 748             HV239       Max.   : NA
## 749             HV239     NA's   :55920
## 750             HV240       Min.   : NA
## 751             HV240       1st Qu.: NA
## 752             HV240       Median : NA
## 753             HV240       Mean   :NaN
## 754             HV240       3rd Qu.: NA
## 755             HV240       Max.   : NA
```

```
## 756              HV240     NA's   :55920
## 757              HV241     Min.   :1.000
## 758              HV241     1st Qu.:2.000
## 759              HV241     Median :2.000
## 760              HV241     Mean   :1.958
## 761              HV241     3rd Qu.:2.000
## 762              HV241     Max.   :6.000
## 763              HV241        NA's   :51
## 764              HV242       Min.   :0.0
## 765              HV242       1st Qu.:0.0
## 766              HV242       Median :1.0
## 767              HV242       Mean   :0.7
## 768              HV242       3rd Qu.:1.0
## 769              HV242       Max.   :1.0
## 770              HV242     NA's   :44280
## 771             HV243A    Min.   :0.0000
## 772             HV243A    1st Qu.:0.0000
## 773             HV243A    Median :1.0000
## 774             HV243A    Mean   :0.7471
## 775             HV243A    3rd Qu.:1.0000
## 776             HV243A    Max.   :1.0000
## 777             HV243A                <NA>
## 778             HV243B    Min.   :0.0000
## 779             HV243B    1st Qu.:0.0000
## 780             HV243B    Median :0.0000
## 781             HV243B    Mean   :0.1872
## 782             HV243B    3rd Qu.:0.0000
## 783             HV243B    Max.   :1.0000
## 784             HV243B                <NA>
## 785             HV243C Min.   :0.0000000
## 786             HV243C 1st Qu.:0.0000000
## 787             HV243C Median :0.0000000
## 788             HV243C Mean   :0.0008405
## 789             HV243C 3rd Qu.:0.0000000
## 790             HV243C Max.   :1.0000000
## 791             HV243C                <NA>
## 792             HV243D  Min.   :0.000000
## 793             HV243D  1st Qu.:0.000000
## 794             HV243D  Median :0.000000
## 795             HV243D  Mean   :0.001055
## 796             HV243D  3rd Qu.:0.000000
## 797             HV243D  Max.   :1.000000
## 798             HV243D                <NA>
## 799             HV243E   Min.   :0.00000
## 800             HV243E   1st Qu.:0.00000
## 801             HV243E   Median :0.00000
## 802             HV243E   Mean   :0.05211
## 803             HV243E   3rd Qu.:0.00000
## 804             HV243E   Max.   :1.00000
## 805             HV243E                <NA>
## 806              HV244    Min.   :0.0000
## 807              HV244    1st Qu.:0.0000
## 808              HV244    Median :1.0000
## 809              HV244    Mean   :0.6363
```

```
## 810             HV244    3rd Qu.:1.0000
## 811             HV244    Max.   :1.0000
## 812             HV244                <NA>
## 813             HV245    Min.   :  0.00
## 814             HV245    1st Qu.:  1.00
## 815             HV245    Median :  4.00
## 816             HV245    Mean   : 14.48
## 817             HV245    3rd Qu.: 10.00
## 818             HV245    Max.   :998.00
## 819             HV245     NA's   :20337
## 820             HV246    Min.   :0.0000
## 821             HV246    1st Qu.:0.0000
## 822             HV246    Median :1.0000
## 823             HV246    Mean   :0.5249
## 824             HV246    3rd Qu.:1.0000
## 825             HV246    Max.   :1.0000
## 826             HV246                <NA>
## 827            HV246A   Min.   : 0.0000
## 828            HV246A   1st Qu.: 0.0000
## 829            HV246A   Median : 0.0000
## 830            HV246A   Mean   : 0.2225
## 831            HV246A   3rd Qu.: 0.0000
## 832            HV246A   Max.   :95.0000
## 833            HV246A                <NA>
## 834            HV246B  Min.   : 0.00000
## 835            HV246B  1st Qu.: 0.00000
## 836            HV246B  Median : 0.00000
## 837            HV246B  Mean   : 0.08199
## 838            HV246B  3rd Qu.: 0.00000
## 839            HV246B  Max.   :20.00000
## 840            HV246B                <NA>
## 841            HV246C  Min.   :0.000000
## 842            HV246C  1st Qu.:0.000000
## 843            HV246C  Median :0.000000
## 844            HV246C  Mean   :0.004292
## 845            HV246C  3rd Qu.:0.000000
## 846            HV246C  Max.   :8.000000
## 847            HV246C                <NA>
## 848            HV246D   Min.   : 0.0000
## 849            HV246D   1st Qu.: 0.0000
## 850            HV246D   Median : 0.0000
## 851            HV246D   Mean   : 0.5044
## 852            HV246D   3rd Qu.: 0.0000
## 853            HV246D   Max.   :95.0000
## 854            HV246D                <NA>
## 855            HV246E   Min.   : 0.0000
## 856            HV246E   1st Qu.: 0.0000
## 857            HV246E   Median : 0.0000
## 858            HV246E   Mean   : 0.1136
## 859            HV246E   3rd Qu.: 0.0000
## 860            HV246E   Max.   :95.0000
## 861            HV246E                <NA>
## 862            HV246F   Min.   : 0.0000
## 863            HV246F   1st Qu.: 0.0000
```

```
## 864            HV246F   Median : 0.0000
## 865            HV246F   Mean   : 0.8975
## 866            HV246F   3rd Qu.: 0.0000
## 867            HV246F   Max.   :95.0000
## 868            HV246F               <NA>
## 869            HV246G   Min.   : 0.0000
## 870            HV246G   1st Qu.: 0.0000
## 871            HV246G   Median : 0.0000
## 872            HV246G   Mean   : 0.3079
## 873            HV246G   3rd Qu.: 0.0000
## 874            HV246G   Max.   :95.0000
## 875            HV246G               <NA>
## 876            HV246H   Min.   : 0.0000
## 877            HV246H   1st Qu.: 0.0000
## 878            HV246H   Median : 0.0000
## 879            HV246H   Mean   : 0.2341
## 880            HV246H   3rd Qu.: 0.0000
## 881            HV246H   Max.   :51.0000
## 882            HV246H               <NA>
## 883            HV246I   Min.   : 0.0000
## 884            HV246I   1st Qu.: 0.0000
## 885            HV246I   Median : 0.0000
## 886            HV246I   Mean   : 0.1803
## 887            HV246I   3rd Qu.: 0.0000
## 888            HV246I   Max.   :95.0000
## 889            HV246I               <NA>
## 890            HV246J       Min.   : NA
## 891            HV246J       1st Qu.: NA
## 892            HV246J       Median : NA
## 893            HV246J       Mean   :NaN
## 894            HV246J       3rd Qu.: NA
## 895            HV246J       Max.   : NA
## 896            HV246J     NA's   :55920
## 897            HV246K       Min.   : NA
## 898            HV246K       1st Qu.: NA
## 899            HV246K       Median : NA
## 900            HV246K       Mean   :NaN
## 901            HV246K       3rd Qu.: NA
## 902            HV246K       Max.   : NA
## 903            HV246K     NA's   :55920
## 904             HV247    Min.   :0.0000
## 905             HV247    1st Qu.:0.0000
## 906             HV247    Median :1.0000
## 907             HV247    Mean   :0.5333
## 908             HV247    3rd Qu.:1.0000
## 909             HV247    Max.   :1.0000
## 910             HV247                <NA>
## 911             HV252    Min.   :0.0000
## 912             HV252    1st Qu.:0.0000
## 913             HV252    Median :0.0000
## 914             HV252    Mean   :0.2288
## 915             HV252    3rd Qu.:0.0000
## 916             HV252    Max.   :4.0000
## 917             HV252                <NA>
```

```
## 918              HV253       Min.   : NA
## 919              HV253       1st Qu.: NA
## 920              HV253       Median : NA
## 921              HV253       Mean   :NaN
## 922              HV253       3rd Qu.: NA
## 923              HV253       Max.   : NA
## 924              HV253     NA's   :55920
## 925             HV253A       Min.   : NA
## 926             HV253A       1st Qu.: NA
## 927             HV253A       Median : NA
## 928             HV253A       Mean   :NaN
## 929             HV253A       3rd Qu.: NA
## 930             HV253A       Max.   : NA
## 931             HV253A     NA's   :55920
## 932             HV253B       Min.   : NA
## 933             HV253B       1st Qu.: NA
## 934             HV253B       Median : NA
## 935             HV253B       Mean   :NaN
## 936             HV253B       3rd Qu.: NA
## 937             HV253B       Max.   : NA
## 938             HV253B     NA's   :55920
## 939             HV253C       Min.   : NA
## 940             HV253C       1st Qu.: NA
## 941             HV253C       Median : NA
## 942             HV253C       Mean   :NaN
## 943             HV253C       3rd Qu.: NA
## 944             HV253C       Max.   : NA
## 945             HV253C     NA's   :55920
## 946             HV253D       Min.   : NA
## 947             HV253D       1st Qu.: NA
## 948             HV253D       Median : NA
## 949             HV253D       Mean   :NaN
## 950             HV253D       3rd Qu.: NA
## 951             HV253D       Max.   : NA
## 952             HV253D     NA's   :55920
## 953             HV253E       Min.   : NA
## 954             HV253E       1st Qu.: NA
## 955             HV253E       Median : NA
## 956             HV253E       Mean   :NaN
## 957             HV253E       3rd Qu.: NA
## 958             HV253E       Max.   : NA
## 959             HV253E     NA's   :55920
## 960             HV253F       Min.   : NA
## 961             HV253F       1st Qu.: NA
## 962             HV253F       Median : NA
## 963             HV253F       Mean   :NaN
## 964             HV253F       3rd Qu.: NA
## 965             HV253F       Max.   : NA
## 966             HV253F     NA's   :55920
## 967             HV253G       Min.   : NA
## 968             HV253G       1st Qu.: NA
## 969             HV253G       Median : NA
## 970             HV253G       Mean   :NaN
## 971             HV253G       3rd Qu.: NA
```

```
## 972             HV253G       Max.   : NA
## 973             HV253G     NA's   :55920
## 974             HV253H       Min.   : NA
## 975             HV253H       1st Qu.: NA
## 976             HV253H       Median : NA
## 977             HV253H       Mean   :NaN
## 978             HV253H       3rd Qu.: NA
## 979             HV253H       Max.   : NA
## 980             HV253H     NA's   :55920
## 981             HV253X       Min.   : NA
## 982             HV253X       1st Qu.: NA
## 983             HV253X       Median : NA
## 984             HV253X       Mean   :NaN
## 985             HV253X       3rd Qu.: NA
## 986             HV253X       Max.   : NA
## 987             HV253X     NA's   :55920
## 988             HV253Z       Min.   : NA
## 989             HV253Z       1st Qu.: NA
## 990             HV253Z       Median : NA
## 991             HV253Z       Mean   :NaN
## 992             HV253Z       3rd Qu.: NA
## 993             HV253Z       Max.   : NA
## 994             HV253Z     NA's   :55920
## 995              HV270      Min.   :1.00
## 996              HV270      1st Qu.:2.00
## 997              HV270      Median :3.00
## 998              HV270      Mean   :2.99
## 999              HV270      3rd Qu.:4.00
## 1000             HV270      Max.   :5.00
## 1001             HV270                 <NA>
## 1002             HV271   Min.   :-157468
## 1003             HV271   1st Qu.: -66020
## 1004             HV271   Median : -30996
## 1005             HV271   Mean   :   4523
## 1006             HV271   3rd Qu.:  42481
## 1007             HV271   Max.   : 470060
## 1008             HV271                 <NA>
## 1009            HV270A     Min.   :1.000
## 1010            HV270A     1st Qu.:2.000
## 1011            HV270A     Median :3.000
## 1012            HV270A     Mean   :2.927
## 1013            HV270A     3rd Qu.:4.000
## 1014            HV270A     Max.   :5.000
## 1015            HV270A                 <NA>
## 1016            HV271A   Min.   :-207421
## 1017            HV271A   1st Qu.: -62687
## 1018            HV271A   Median : -17646
## 1019            HV271A   Mean   :   7122
## 1020            HV271A   3rd Qu.:  52267
## 1021            HV271A   Max.   : 657859
## 1022            HV271A                 <NA>
## 1023              HML1     Min.   :0.000
## 1024              HML1     1st Qu.:0.000
## 1025              HML1     Median :1.000
```

```
## 1026             HML1     Mean   :1.455
## 1027             HML1     3rd Qu.:2.000
## 1028             HML1     Max.   :7.000
## 1029             HML1                <NA>
## 1030            HML1A     Min.   :0.000
## 1031            HML1A     1st Qu.:0.000
## 1032            HML1A     Median :1.000
## 1033            HML1A     Mean   :1.455
## 1034            HML1A     3rd Qu.:2.000
## 1035            HML1A     Max.   :7.000
## 1036            HML1A                <NA>
## 1037             HML2    Min.   :0.0000
## 1038             HML2    1st Qu.:0.0000
## 1039             HML2    Median :0.0000
## 1040             HML2    Mean   :0.4249
## 1041             HML2    3rd Qu.:1.0000
## 1042             HML2    Max.   :5.0000
## 1043             HML2                <NA>
## 1044             CHL0       Min.   : NA
## 1045             CHL0       1st Qu.: NA
## 1046             CHL0       Median : NA
## 1047             CHL0       Mean   :NaN
## 1048             CHL0       3rd Qu.: NA
## 1049             CHL0       Max.   : NA
## 1050             CHL0     NA's   :55920
## 1051       SHDISTRICT     Min.   :11.00
## 1052       SHDISTRICT     1st Qu.:25.00
## 1053       SHDISTRICT     Median :34.00
## 1054       SHDISTRICT     Mean   :35.42
## 1055       SHDISTRICT     3rd Qu.:45.00
## 1056       SHDISTRICT     Max.   :57.00
## 1057       SHDISTRICT                <NA>
## 1058         SHELIGMB     Min.   :0.000
## 1059         SHELIGMB     1st Qu.:0.000
## 1060         SHELIGMB     Median :0.000
## 1061         SHELIGMB     Mean   :0.272
## 1062         SHELIGMB     3rd Qu.:1.000
## 1063         SHELIGMB     Max.   :1.000
## 1064         SHELIGMB                <NA>
## 1065           SH104A     Min.   :1.000
## 1066           SH104A     1st Qu.:1.000
## 1067           SH104A     Median :2.000
## 1068           SH104A     Mean   :2.113
## 1069           SH104A     3rd Qu.:3.000
## 1070           SH104A     Max.   :8.000
## 1071           SH104A     NA's   :10075
## 1072           SH108A      Min.   :0.00
## 1073           SH108A      1st Qu.:1.00
## 1074           SH108A      Median :1.00
## 1075           SH108A      Mean   :0.95
## 1076           SH108A      3rd Qu.:1.00
## 1077           SH108A      Max.   :1.00
## 1078           SH108A     NA's   :35301
## 1079           SH108B     Min.   : 1.00
```

```
## 1080           SH108B     1st Qu.: 1.00
## 1081           SH108B     Median : 1.00
## 1082           SH108B     Mean   : 4.81
## 1083           SH108B     3rd Qu.: 1.00
## 1084           SH108B     Max.   :98.00
## 1085           SH108B     NA's   :36260
## 1086           SH108C      Min.   :1.00
## 1087           SH108C      1st Qu.:2.00
## 1088           SH108C      Median :2.00
## 1089           SH108C      Mean   :2.53
## 1090           SH108C      3rd Qu.:3.00
## 1091           SH108C      Max.   :8.00
## 1092           SH108C     NA's   :36260
## 1093          SH112AA    Min.   :0.0000
## 1094          SH112AA    1st Qu.:0.0000
## 1095          SH112AA    Median :1.0000
## 1096          SH112AA    Mean   :0.5264
## 1097          SH112AA    3rd Qu.:1.0000
## 1098          SH112AA    Max.   :1.0000
## 1099          SH112AA               <NA>
## 1100          SH112AB    Min.   :0.0000
## 1101          SH112AB    1st Qu.:0.0000
## 1102          SH112AB    Median :0.0000
## 1103          SH112AB    Mean   :0.3516
## 1104          SH112AB    3rd Qu.:1.0000
## 1105          SH112AB    Max.   :1.0000
## 1106          SH112AB               <NA>
## 1107          SH112AC    Min.   :0.0000
## 1108          SH112AC    1st Qu.:0.0000
## 1109          SH112AC    Median :0.0000
## 1110          SH112AC    Mean   :0.2145
## 1111          SH112AC    3rd Qu.:0.0000
## 1112          SH112AC    Max.   :1.0000
## 1113          SH112AC               <NA>
## 1114          SH112AY  Min.   :0.000000
## 1115          SH112AY  1st Qu.:0.000000
## 1116          SH112AY  Median :0.000000
## 1117          SH112AY  Mean   :0.003004
## 1118          SH112AY  3rd Qu.:0.000000
## 1119          SH112AY  Max.   :1.000000
## 1120          SH112AY               <NA>
## 1121           SH121G    Min.   :0.0000
## 1122           SH121G    1st Qu.:0.0000
## 1123           SH121G    Median :1.0000
## 1124           SH121G    Mean   :0.7012
## 1125           SH121G    3rd Qu.:1.0000
## 1126           SH121G    Max.   :1.0000
## 1127           SH121G               <NA>
## 1128           SH121H    Min.   :0.0000
## 1129           SH121H    1st Qu.:1.0000
## 1130           SH121H    Median :1.0000
## 1131           SH121H    Mean   :0.8508
## 1132           SH121H    3rd Qu.:1.0000
## 1133           SH121H    Max.   :1.0000
```

```
## 1134           SH121H                <NA>
## 1135           SH121I    Min.   :0.0000
## 1136           SH121I    1st Qu.:0.0000
## 1137           SH121I    Median :1.0000
## 1138           SH121I    Mean   :0.6903
## 1139           SH121I    3rd Qu.:1.0000
## 1140           SH121I    Max.   :1.0000
## 1141           SH121I                <NA>
## 1142           SH121J    Min.   :0.0000
## 1143           SH121J    1st Qu.:0.0000
## 1144           SH121J    Median :1.0000
## 1145           SH121J    Mean   :0.7045
## 1146           SH121J    3rd Qu.:1.0000
## 1147           SH121J    Max.   :1.0000
## 1148           SH121J                <NA>
## 1149           SH121K    Min.   :0.0000
## 1150           SH121K    1st Qu.:0.0000
## 1151           SH121K    Median :0.0000
## 1152           SH121K    Mean   :0.1768
## 1153           SH121K    3rd Qu.:0.0000
## 1154           SH121K    Max.   :1.0000
## 1155           SH121K                <NA>
## 1156           SH121L    Min.   :0.0000
## 1157           SH121L    1st Qu.:0.0000
## 1158           SH121L    Median :0.0000
## 1159           SH121L    Mean   :0.2715
## 1160           SH121L    3rd Qu.:1.0000
## 1161           SH121L    Max.   :1.0000
## 1162           SH121L                <NA>
## 1163           SH121M   Min.   :0.00000
## 1164           SH121M   1st Qu.:0.00000
## 1165           SH121M   Median :0.00000
## 1166           SH121M   Mean   :0.02262
## 1167           SH121M   3rd Qu.:0.00000
## 1168           SH121M   Max.   :1.00000
## 1169           SH121M                <NA>
## 1170           SH121N    Min.   :0.0000
## 1171           SH121N    1st Qu.:0.0000
## 1172           SH121N    Median :0.0000
## 1173           SH121N    Mean   :0.1399
## 1174           SH121N    3rd Qu.:0.0000
## 1175           SH121N    Max.   :1.0000
## 1176           SH121N                <NA>
## 1177           SH121O    Min.   :0.0000
## 1178           SH121O    1st Qu.:0.0000
## 1179           SH121O    Median :0.0000
## 1180           SH121O    Mean   :0.1026
## 1181           SH121O    3rd Qu.:0.0000
## 1182           SH121O    Max.   :1.0000
## 1183           SH121O                <NA>
## 1184           SH121P    Min.   :0.0000
## 1185           SH121P    1st Qu.:0.0000
## 1186           SH121P    Median :0.0000
## 1187           SH121P    Mean   :0.1797
```

```
## 1188           SH121P    3rd Qu.:0.0000
## 1189           SH121P    Max.   :1.0000
## 1190           SH121P                <NA>
## 1191           SH121Q  Min.   :0.000000
## 1192           SH121Q  1st Qu.:0.000000
## 1193           SH121Q  Median :0.000000
## 1194           SH121Q  Mean   :0.002951
## 1195           SH121Q  3rd Qu.:0.000000
## 1196           SH121Q  Max.   :1.000000
## 1197           SH121Q                <NA>
## 1198           SH121R   Min.   :0.00000
## 1199           SH121R   1st Qu.:0.00000
## 1200           SH121R   Median :0.00000
## 1201           SH121R   Mean   :0.09675
## 1202           SH121R   3rd Qu.:0.00000
## 1203           SH121R   Max.   :1.00000
## 1204           SH121R                <NA>
## 1205           SH122H  Min.   :0.000000
## 1206           SH122H  1st Qu.:0.000000
## 1207           SH122H  Median :0.000000
## 1208           SH122H  Mean   :0.002021
## 1209           SH122H  3rd Qu.:0.000000
## 1210           SH122H  Max.   :1.000000
## 1211           SH122H                <NA>
## 1212           SH122I  Min.   :0.000000
## 1213           SH122I  1st Qu.:0.000000
## 1214           SH122I  Median :0.000000
## 1215           SH122I  Mean   :0.006366
## 1216           SH122I  3rd Qu.:0.000000
## 1217           SH122I  Max.   :1.000000
## 1218           SH122I                <NA>
## 1219           SH124B      Min.   :0.00
## 1220           SH124B      1st Qu.:0.00
## 1221           SH124B      Median :1.00
## 1222           SH124B      Mean   :0.69
## 1223           SH124B      3rd Qu.:1.00
## 1224           SH124B      Max.   :1.00
## 1225           SH124B     NA's   :40051
## 1226           SH144A     Min.   :0.000
## 1227           SH144A     1st Qu.:0.000
## 1228           SH144A     Median :0.000
## 1229           SH144A     Mean   :0.272
## 1230           SH144A     3rd Qu.:1.000
## 1231           SH144A     Max.   :1.000
## 1232           SH144A                <NA>
## 1233           SH145A      Min.   :1.00
## 1234           SH145A      1st Qu.:1.00
## 1235           SH145A      Median :1.00
## 1236           SH145A      Mean   :1.42
## 1237           SH145A      3rd Qu.:2.00
## 1238           SH145A      Max.   :6.00
## 1239           SH145A     NA's   :40955
## 1240            HV101    Min.   : 1.000
## 1241            HV101    1st Qu.: 2.000
```

```
## 1242            HV101    Median : 3.000
## 1243            HV101    Mean   : 3.131
## 1244            HV101    3rd Qu.: 3.000
## 1245            HV101    Max.   :98.000
## 1246            HV101                <NA>
## 1247            HV102    Min.   :0.0000
## 1248            HV102    1st Qu.:1.0000
## 1249            HV102    Median :1.0000
## 1250            HV102    Mean   :0.9873
## 1251            HV102    3rd Qu.:1.0000
## 1252            HV102    Max.   :1.0000
## 1253            HV102                <NA>
## 1254            HV103    Min.   :0.0000
## 1255            HV103    1st Qu.:1.0000
## 1256            HV103    Median :1.0000
## 1257            HV103    Mean   :0.9887
## 1258            HV103    3rd Qu.:1.0000
## 1259            HV103    Max.   :1.0000
## 1260            HV103                <NA>
## 1261            HV104     Min.   :1.000
## 1262            HV104     1st Qu.:1.000
## 1263            HV104     Median :2.000
## 1264            HV104     Mean   :1.532
## 1265            HV104     3rd Qu.:2.000
## 1266            HV104     Max.   :2.000
## 1267            HV104                <NA>
## 1268            HV105     Min.   : 0.00
## 1269            HV105     1st Qu.: 8.00
## 1270            HV105     Median :18.00
## 1271            HV105     Mean   :23.62
## 1272            HV105     3rd Qu.:36.00
## 1273            HV105     Max.   :98.00
## 1274            HV105                <NA>
## 1275            HV106    Min.   :0.0000
## 1276            HV106    1st Qu.:0.0000
## 1277            HV106    Median :1.0000
## 1278            HV106    Mean   :0.9278
## 1279            HV106    3rd Qu.:1.0000
## 1280            HV106    Max.   :8.0000
## 1281            HV106                <NA>
## 1282            HV107    Min.   : 0.000
## 1283            HV107    1st Qu.: 2.000
## 1284            HV107    Median : 4.000
## 1285            HV107    Mean   : 3.645
## 1286            HV107    3rd Qu.: 5.000
## 1287            HV107    Max.   :98.000
## 1288            HV107     NA's   :15512
## 1289            HV108    Min.   : 0.000
## 1290            HV108    1st Qu.: 0.000
## 1291            HV108    Median : 3.000
## 1292            HV108    Mean   : 3.884
## 1293            HV108    3rd Qu.: 6.000
## 1294            HV108    Max.   :98.000
## 1295            HV108                <NA>
```

```
## 1296            HV109     Min.   :0.000
## 1297            HV109     1st Qu.:0.000
## 1298            HV109     Median :1.000
## 1299            HV109     Mean   :1.309
## 1300            HV109     3rd Qu.:2.000
## 1301            HV109     Max.   :8.000
## 1302            HV109                <NA>
## 1303            HV110       Min.   : NA
## 1304            HV110       1st Qu.: NA
## 1305            HV110       Median : NA
## 1306            HV110       Mean   :NaN
## 1307            HV110       3rd Qu.: NA
## 1308            HV110       Max.   : NA
## 1309            HV110     NA's   :55920
## 1310            HV111     Min.   :0.000
## 1311            HV111     1st Qu.:1.000
## 1312            HV111     Median :1.000
## 1313            HV111     Mean   :0.995
## 1314            HV111     3rd Qu.:1.000
## 1315            HV111     Max.   :8.000
## 1316            HV111     NA's   :28842
## 1317            HV112    Min.   : 0.000
## 1318            HV112    1st Qu.: 1.000
## 1319            HV112    Median : 2.000
## 1320            HV112    Mean   : 1.584
## 1321            HV112    3rd Qu.: 2.000
## 1322            HV112    Max.   :10.000
## 1323            HV112     NA's   :28842
## 1324            HV113     Min.   :0.000
## 1325            HV113     1st Qu.:1.000
## 1326            HV113     Median :1.000
## 1327            HV113     Mean   :1.033
## 1328            HV113     3rd Qu.:1.000
## 1329            HV113     Max.   :8.000
## 1330            HV113     NA's   :28842
## 1331            HV114    Min.   : 0.000
## 1332            HV114    1st Qu.: 0.000
## 1333            HV114    Median : 1.000
## 1334            HV114    Mean   : 0.672
## 1335            HV114    3rd Qu.: 1.000
## 1336            HV114    Max.   :10.000
## 1337            HV114     NA's   :28842
## 1338            HV115     Min.   :0.000
## 1339            HV115     1st Qu.:0.000
## 1340            HV115     Median :1.000
## 1341            HV115     Mean   :0.897
## 1342            HV115     3rd Qu.:1.000
## 1343            HV115     Max.   :4.000
## 1344            HV115     NA's   :22897
## 1345            HV116     Min.   :0.000
## 1346            HV116     1st Qu.:0.000
## 1347            HV116     Median :1.000
## 1348            HV116     Mean   :0.745
## 1349            HV116     3rd Qu.:1.000
```

```
## 1350            HV116     Max.   :2.000
## 1351            HV116     NA's   :22897
## 1352            HV117    Min.   :0.0000
## 1353            HV117    1st Qu.:0.0000
## 1354            HV117    Median :0.0000
## 1355            HV117    Mean   :0.2624
## 1356            HV117    3rd Qu.:1.0000
## 1357            HV117    Max.   :1.0000
## 1358            HV117                <NA>
## 1359            HV118     Min.   :0.000
## 1360            HV118     1st Qu.:0.000
## 1361            HV118     Median :0.000
## 1362            HV118     Mean   :0.117
## 1363            HV118     3rd Qu.:0.000
## 1364            HV118     Max.   :1.000
## 1365            HV118                <NA>
## 1366            HV120    Min.   :0.0000
## 1367            HV120    1st Qu.:0.0000
## 1368            HV120    Median :0.0000
## 1369            HV120    Mean   :0.1127
## 1370            HV120    3rd Qu.:0.0000
## 1371            HV120    Max.   :1.0000
## 1372            HV120                <NA>
## 1373            HV121    Min.   :0.0000
## 1374            HV121    1st Qu.:0.0000
## 1375            HV121    Median :0.0000
## 1376            HV121    Mean   :0.6608
## 1377            HV121    3rd Qu.:2.0000
## 1378            HV121    Max.   :2.0000
## 1379            HV121                <NA>
## 1380            HV122    Min.   :0.0000
## 1381            HV122    1st Qu.:0.0000
## 1382            HV122    Median :0.0000
## 1383            HV122    Mean   :0.3709
## 1384            HV122    3rd Qu.:1.0000
## 1385            HV122    Max.   :3.0000
## 1386            HV122                <NA>
## 1387            HV123      Min.   :1.00
## 1388            HV123      1st Qu.:2.00
## 1389            HV123      Median :3.00
## 1390            HV123      Mean   :3.14
## 1391            HV123      3rd Qu.:5.00
## 1392            HV123      Max.   :6.00
## 1393            HV123     NA's   :39492
## 1394            HV124    Min.   : 0.000
## 1395            HV124    1st Qu.: 0.000
## 1396            HV124    Median : 0.000
## 1397            HV124    Mean   : 1.384
## 1398            HV124    3rd Qu.: 1.000
## 1399            HV124    Max.   :18.000
## 1400            HV124                <NA>
## 1401            HV125       Min.   : NA
## 1402            HV125       1st Qu.: NA
## 1403            HV125       Median : NA
```

```
## 1404            HV125       Mean   :NaN
## 1405            HV125       3rd Qu.: NA
## 1406            HV125       Max.   : NA
## 1407            HV125     NA's   :55920
## 1408            HV126       Min.   : NA
## 1409            HV126       1st Qu.: NA
## 1410            HV126       Median : NA
## 1411            HV126       Mean   :NaN
## 1412            HV126       3rd Qu.: NA
## 1413            HV126       Max.   : NA
## 1414            HV126     NA's   :55920
## 1415            HV127       Min.   : NA
## 1416            HV127       1st Qu.: NA
## 1417            HV127       Median : NA
## 1418            HV127       Mean   :NaN
## 1419            HV127       3rd Qu.: NA
## 1420            HV127       Max.   : NA
## 1421            HV127     NA's   :55920
## 1422            HV128       Min.   : NA
## 1423            HV128       1st Qu.: NA
## 1424            HV128       Median : NA
## 1425            HV128       Mean   :NaN
## 1426            HV128       3rd Qu.: NA
## 1427            HV128       Max.   : NA
## 1428            HV128     NA's   :55920
## 1429            HV129       Min.   : NA
## 1430            HV129       1st Qu.: NA
## 1431            HV129       Median : NA
## 1432            HV129       Mean   :NaN
## 1433            HV129       3rd Qu.: NA
## 1434            HV129       Max.   : NA
## 1435            HV129     NA's   :55920
## 1436            HV140      Min.   :0.00
## 1437            HV140      1st Qu.:1.00
## 1438            HV140      Median :2.00
## 1439            HV140      Mean   :1.59
## 1440            HV140      3rd Qu.:2.00
## 1441            HV140      Max.   :8.00
## 1442            HV140     NA's   :47851
## 1443            IDXH4    Min.   : 1.000
## 1444            IDXH4    1st Qu.: 2.000
## 1445            IDXH4    Median : 3.000
## 1446            IDXH4    Mean   : 3.126
## 1447            IDXH4    3rd Qu.: 4.000
## 1448            IDXH4    Max.   :16.000
## 1449            IDXH4                <NA>
## 1450             SH08     Min.   :1.000
## 1451             SH08     1st Qu.:1.000
## 1452             SH08     Median :2.000
## 1453             SH08     Mean   :3.378
## 1454             SH08     3rd Qu.:6.000
## 1455             SH08     Max.   :6.000
## 1456             SH08     NA's   :22897
## 1457             SH16      Min.   :0.00
```

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## 1458              SH16      1st Qu.:1.00
## 1459              SH16      Median :1.00
## 1460              SH16      Mean   :0.84
## 1461              SH16      3rd Qu.:1.00
## 1462              SH16      Max.   :1.00
## 1463              SH16      NA's   :4807
## 1464             SH17A      Min.   :1.00
## 1465             SH17A      1st Qu.:2.00
## 1466             SH17A      Median :2.00
## 1467             SH17A      Mean   :2.45
## 1468             SH17A      3rd Qu.:2.00
## 1469             SH17A      Max.   :8.00
## 1470             SH17A     NA's   :12962
## 1471             SH17B    Min.   : 0.000
## 1472             SH17B    1st Qu.: 2.000
## 1473             SH17B    Median : 3.000
## 1474             SH17B    Mean   : 3.497
## 1475             SH17B    3rd Qu.: 5.000
## 1476             SH17B    Max.   :98.000
## 1477             SH17B     NA's   :12983
## 1478              SH18     Min.   :0.000
## 1479              SH18     1st Qu.:0.000
## 1480              SH18     Median :1.000
## 1481              SH18     Mean   :0.733
## 1482              SH18     3rd Qu.:1.000
## 1483              SH18     Max.   :1.000
## 1484              SH18     NA's   :30697
## 1485             SH19A      Min.   :1.00
## 1486             SH19A      1st Qu.:2.00
## 1487             SH19A      Median :2.00
## 1488             SH19A      Mean   :2.35
## 1489             SH19A      3rd Qu.:2.00
## 1490             SH19A      Max.   :5.00
## 1491             SH19A     NA's   :37444
## 1492             SH19B      Min.   :1.00
## 1493             SH19B      1st Qu.:1.00
## 1494             SH19B      Median :3.00
## 1495             SH19B      Mean   :2.97
## 1496             SH19B      3rd Qu.:4.00
## 1497             SH19B      Max.   :6.00
## 1498             SH19B     NA's   :37444
## 1499              SH21    Min.   :0.0000
## 1500              SH21    1st Qu.:1.0000
## 1501              SH21    Median :1.0000
## 1502              SH21    Mean   :0.8225
## 1503              SH21    3rd Qu.:1.0000
## 1504              SH21    Max.   :8.0000
## 1505              SH21                <NA>
## 1506              SH22     Min.   :1.000
## 1507              SH22     1st Qu.:1.000
## 1508              SH22     Median :1.000
## 1509              SH22     Mean   :1.109
## 1510              SH22     3rd Qu.:1.000
## 1511              SH22     Max.   :8.000
```

```
## 1512              SH22     NA's   :10135
## 1513              SH23     Min.   :0.000
## 1514              SH23     1st Qu.:0.000
## 1515              SH23     Median :0.000
## 1516              SH23     Mean   :0.057
## 1517              SH23     3rd Qu.:0.000
## 1518              SH23     Max.   :8.000
## 1519              SH23     NA's   :11168
## 1520             SB315      Min.   :1.00
## 1521             SB315      1st Qu.:1.00
## 1522             SB315      Median :1.00
## 1523             SB315      Mean   :1.02
## 1524             SB315      3rd Qu.:1.00
## 1525             SB315      Max.   :5.00
## 1526             SB315     NA's   :49295
## 1527            SB315F    Min.   : 105.0
## 1528            SB315F    1st Qu.: 406.0
## 1529            SB315F    Median : 905.0
## 1530            SB315F    Mean   : 875.6
## 1531            SB315F    3rd Qu.:1305.0
## 1532            SB315F    Max.   :1707.0
## 1533            SB315F     NA's   :49315
## 1534             SB332      Min.   :1.00
## 1535             SB332      1st Qu.:2.00
## 1536             SB332      Median :2.00
## 1537             SB332      Mean   :1.99
## 1538             SB332      3rd Qu.:2.00
## 1539             SB332      Max.   :5.00
## 1540             SB332     NA's   :49295
## 1541             SB333      Min.   :1.00
## 1542             SB333      1st Qu.:1.00
## 1543             SB333      Median :1.00
## 1544             SB333      Mean   :1.05
## 1545             SB333      3rd Qu.:1.00
## 1546             SB333      Max.   :2.00
## 1547             SB333     NA's   :55801
## 1548             SB337      Min.   :1.00
## 1549             SB337      1st Qu.:2.00
## 1550             SB337      Median :2.00
## 1551             SB337      Mean   :2.04
## 1552             SB337      3rd Qu.:2.00
## 1553             SB337      Max.   :3.00
## 1554             SB337     NA's   :49299
## 1555             SB338      Min.   :1.00
## 1556             SB338      1st Qu.:1.00
## 1557             SB338      Median :1.00
## 1558             SB338      Mean   :1.25
## 1559             SB338      3rd Qu.:1.25
## 1560             SB338      Max.   :2.00
## 1561             SB338     NA's   :55916
## 1562             SB339      Min.   :0.00
## 1563             SB339      1st Qu.:0.00
## 1564             SB339      Median :0.00
## 1565             SB339      Mean   :0.25
```

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## 1566            SB339      3rd Qu.:0.25
## 1567            SB339      Max.   :1.00
## 1568            SB339     NA's   :55916
## 1569              HA0     Min.   : 1.00
## 1570              HA0     1st Qu.: 2.00
## 1571              HA0     Median : 2.00
## 1572              HA0     Mean   : 2.52
## 1573              HA0     3rd Qu.: 3.00
## 1574              HA0     Max.   :14.00
## 1575              HA0     NA's   :48531
## 1576              HA1      Min.   :15.0
## 1577              HA1      1st Qu.:20.0
## 1578              HA1      Median :29.0
## 1579              HA1      Mean   :29.2
## 1580              HA1      3rd Qu.:37.0
## 1581              HA1      Max.   :49.0
## 1582              HA1     NA's   :48531
## 1583              HA2    Min.   : 271.0
## 1584              HA2    1st Qu.: 502.0
## 1585              HA2    Median : 558.0
## 1586              HA2    Mean   : 607.8
## 1587              HA2    3rd Qu.: 628.0
## 1588              HA2    Max.   :9996.0
## 1589              HA2     NA's   :48540
## 1590              HA3      Min.   : 816
## 1591              HA3      1st Qu.:1525
## 1592              HA3      Median :1564
## 1593              HA3      Mean   :1597
## 1594              HA3      3rd Qu.:1606
## 1595              HA3      Max.   :9996
## 1596              HA3     NA's   :48539
## 1597              HA4      Min.   :   0
## 1598              HA4      1st Qu.: 337
## 1599              HA4      Median :1200
## 1600              HA4      Mean   :2090
## 1601              HA4      3rd Qu.:3070
## 1602              HA4      Max.   :9998
## 1603              HA4     NA's   :48567
## 1604              HA5    Min.   :-560.0
## 1605              HA5    1st Qu.:-183.0
## 1606              HA5    Median :-118.0
## 1607              HA5    Mean   :-113.9
## 1608              HA5    3rd Qu.: -50.0
## 1609              HA5    Max.   :9998.0
## 1610              HA5     NA's   :48567
## 1611              HA6     Min.   : 7959
## 1612              HA6     1st Qu.: 9321
## 1613              HA6     Median : 9566
## 1614              HA6     Mean   : 9586
## 1615              HA6     3rd Qu.: 9816
## 1616              HA6     Max.   :99998
## 1617              HA6     NA's   :48567
## 1618             HA11   Min.   :-390.00
## 1619             HA11   1st Qu.:-104.00
```

```
## 1620             HA11   Median : -35.00
## 1621             HA11   Mean   :  -0.61
## 1622             HA11   3rd Qu.:  36.00
## 1623             HA11   Max.   :9998.00
## 1624             HA11     NA's   :48567
## 1625             HA12     Min.   : 5662
## 1626             HA12     1st Qu.: 8591
## 1627             HA12     Median : 9503
## 1628             HA12     Mean   : 9963
## 1629             HA12     3rd Qu.:10536
## 1630             HA12     Max.   :99998
## 1631             HA12     NA's   :48567
## 1632            HA12A     Min.   : 6202
## 1633            HA12A     1st Qu.: 9969
## 1634            HA12A     Median :10899
## 1635            HA12A     Mean   :11463
## 1636            HA12A     3rd Qu.:12126
## 1637            HA12A     Max.   :99998
## 1638            HA12A     NA's   :48567
## 1639            HA12B     Min.   : 6842
## 1640            HA12B     1st Qu.:11053
## 1641            HA12B     Median :12150
## 1642            HA12B     Mean   :12715
## 1643            HA12B     3rd Qu.:13524
## 1644            HA12B     Max.   :99998
## 1645            HA12B     NA's   :48567
## 1646             HA13      Min.   :0.00
## 1647             HA13      1st Qu.:0.00
## 1648             HA13      Median :0.00
## 1649             HA13      Mean   :0.02
## 1650             HA13      3rd Qu.:0.00
## 1651             HA13      Max.   :6.00
## 1652             HA13     NA's   :48540
## 1653             HA21    Min.   : 101.0
## 1654             HA21    1st Qu.: 406.0
## 1655             HA21    Median : 905.0
## 1656             HA21    Mean   : 872.9
## 1657             HA21    3rd Qu.:1305.0
## 1658             HA21    Max.   :1707.0
## 1659             HA21     NA's   :48531
## 1660             HA32      Min.   : 841
## 1661             HA32      1st Qu.: 991
## 1662             HA32      Median :1093
## 1663             HA32      Mean   :1087
## 1664             HA32      3rd Qu.:1196
## 1665             HA32      Max.   :1267
## 1666             HA32     NA's   :48531
## 1667             HA33      Min.   :1.00
## 1668             HA33      1st Qu.:1.00
## 1669             HA33      Median :1.00
## 1670             HA33      Mean   :1.03
## 1671             HA33      3rd Qu.:1.00
## 1672             HA33      Max.   :6.00
## 1673             HA33     NA's   :48531
```

```
## 1674              HA35      Min.   :0.00
## 1675              HA35      1st Qu.:0.00
## 1676              HA35      Median :0.00
## 1677              HA35      Mean   :0.01
## 1678              HA35      3rd Qu.:0.00
## 1679              HA35      Max.   :7.00
## 1680              HA35      NA's   :48549
## 1681              HA40      Min.   :1287
## 1682              HA40      1st Qu.:2081
## 1683              HA40      Median :2274
## 1684              HA40      Mean   :2338
## 1685              HA40      3rd Qu.:2525
## 1686              HA40      Max.   :5061
## 1687              HA40      NA's   :48567
## 1688              HA41      Min.   : 818
## 1689              HA41      1st Qu.:1323
## 1690              HA41      Median :1458
## 1691              HA41      Mean   :1496
## 1692              HA41      3rd Qu.:1622
## 1693              HA41      Max.   :6202
## 1694              HA41      NA's   :48567
## 1695              HA50      Min.   :1.00
## 1696              HA50      1st Qu.:2.00
## 1697              HA50      Median :2.00
## 1698              HA50      Mean   :1.85
## 1699              HA50      3rd Qu.:2.00
## 1700              HA50      Max.   :2.00
## 1701              HA50      NA's   :48531
## 1702              HA51      Min.   :0.00
## 1703              HA51      1st Qu.:1.00
## 1704              HA51      Median :1.00
## 1705              HA51      Mean   :1.46
## 1706              HA51      3rd Qu.:2.00
## 1707              HA51      Max.   :4.00
## 1708              HA51      NA's   :54825
## 1709              HA52      Min.   :1.00
## 1710              HA52      1st Qu.:1.00
## 1711              HA52      Median :1.00
## 1712              HA52      Mean   :1.01
## 1713              HA52      3rd Qu.:1.00
## 1714              HA52      Max.   :4.00
## 1715              HA52      NA's   :48535
## 1716              HA53      Min.   : 20.0
## 1717              HA53      1st Qu.:131.0
## 1718              HA53      Median :140.0
## 1719              HA53      Mean   :142.4
## 1720              HA53      3rd Qu.:149.0
## 1721              HA53      Max.   :996.0
## 1722              HA53      NA's   :48538
## 1723              HA54      Min.   :0.00
## 1724              HA54      1st Qu.:0.00
## 1725              HA54      Median :0.00
## 1726              HA54      Mean   :0.06
## 1727              HA54      3rd Qu.:0.00
```

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## 1728             HA54      Max.   :1.00
## 1729             HA54     NA's   :48531
## 1730             HA55      Min.   :0.00
## 1731             HA55      1st Qu.:0.00
## 1732             HA55      Median :0.00
## 1733             HA55      Mean   :0.02
## 1734             HA55      3rd Qu.:0.00
## 1735             HA55      Max.   :6.00
## 1736             HA55     NA's   :48538
## 1737             HA56     Min.   : 16.0
## 1738             HA56     1st Qu.:126.0
## 1739             HA56     Median :135.0
## 1740             HA56     Mean   :133.7
## 1741             HA56     3rd Qu.:143.0
## 1742             HA56     Max.   :181.0
## 1743             HA56     NA's   :48567
## 1744             HA57      Min.   :1.00
## 1745             HA57      1st Qu.:4.00
## 1746             HA57      Median :4.00
## 1747             HA57      Mean   :3.82
## 1748             HA57      3rd Qu.:4.00
## 1749             HA57      Max.   :4.00
## 1750             HA57     NA's   :48567
## 1751             HA58       Min.   : NA
## 1752             HA58       1st Qu.: NA
## 1753             HA58       Median : NA
## 1754             HA58       Mean   :NaN
## 1755             HA58       3rd Qu.: NA
## 1756             HA58       Max.   : NA
## 1757             HA58     NA's   :55920
## 1758             HA60      Min.   :1.00
## 1759             HA60      1st Qu.:1.00
## 1760             HA60      Median :1.00
## 1761             HA60      Mean   :1.01
## 1762             HA60      3rd Qu.:1.00
## 1763             HA60      Max.   :2.00
## 1764             HA60     NA's   :54818
## 1765             HA61      Min.   :1.00
## 1766             HA61      1st Qu.:1.00
## 1767             HA61      Median :1.00
## 1768             HA61      Mean   :1.01
## 1769             HA61      3rd Qu.:1.00
## 1770             HA61      Max.   :4.00
## 1771             HA61     NA's   :48535
## 1772             HA62  Length:55920
## 1773             HA62  Class :character
## 1774             HA62  Mode  :character
## 1775             HA62                <NA>
## 1776             HA62                <NA>
## 1777             HA62                <NA>
## 1778             HA62                <NA>
## 1779             HA63      Min.   :1.00
## 1780             HA63      1st Qu.:1.00
## 1781             HA63      Median :1.00
```

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## 1782              HA63      Mean   :1.01
## 1783              HA63      3rd Qu.:1.00
## 1784              HA63      Max.   :6.00
## 1785              HA63     NA's   :48539
## 1786              HA64       Min.   : NA
## 1787              HA64       1st Qu.: NA
## 1788              HA64       Median : NA
## 1789              HA64       Mean   :NaN
## 1790              HA64       3rd Qu.: NA
## 1791              HA64       Max.   : NA
## 1792              HA64     NA's   :55920
## 1793              HA65      Min.   :1.00
## 1794              HA65      1st Qu.:1.00
## 1795              HA65      Median :1.00
## 1796              HA65      Mean   :1.01
## 1797              HA65      3rd Qu.:1.00
## 1798              HA65      Max.   :7.00
## 1799              HA65     NA's   :48531
## 1800              HA66      Min.   :0.00
## 1801              HA66      1st Qu.:1.00
## 1802              HA66      Median :1.00
## 1803              HA66      Mean   :1.29
## 1804              HA66      3rd Qu.:2.00
## 1805              HA66      Max.   :3.00
## 1806              HA66     NA's   :48531
## 1807              HA67      Min.   :0.00
## 1808              HA67      1st Qu.:3.00
## 1809              HA67      Median :4.00
## 1810              HA67      Mean   :4.14
## 1811              HA67      3rd Qu.:6.00
## 1812              HA67      Max.   :8.00
## 1813              HA67     NA's   :49241
## 1814              HA68      Min.   :0.00
## 1815              HA68      1st Qu.:1.00
## 1816              HA68      Median :1.00
## 1817              HA68      Mean   :1.29
## 1818              HA68      3rd Qu.:2.00
## 1819              HA68      Max.   :3.00
## 1820              HA68     NA's   :48531
## 1821              HA69       Min.   : NA
## 1822              HA69       1st Qu.: NA
## 1823              HA69       Median : NA
## 1824              HA69       Mean   :NaN
## 1825              HA69       3rd Qu.: NA
## 1826              HA69       Max.   : NA
## 1827              HA69     NA's   :55920
## 1828              HA70    Min.   : 105.0
## 1829              HA70    1st Qu.: 406.0
## 1830              HA70    Median : 905.0
## 1831              HA70    Mean   : 872.7
## 1832              HA70    3rd Qu.:1305.0
## 1833              HA70    Max.   :1707.0
## 1834              HA70     NA's   :48546
## 1835               HC0     Min.   : 2.00
```

```
## 1836              HC0     1st Qu.: 4.00
## 1837              HC0     Median : 5.00
## 1838              HC0     Mean   : 4.91
## 1839              HC0     3rd Qu.: 6.00
## 1840              HC0     Max.   :16.00
## 1841              HC0     NA's   :51833
## 1842              HC1     Min.   : 0.00
## 1843              HC1     1st Qu.:15.00
## 1844              HC1     Median :30.00
## 1845              HC1     Mean   :29.66
## 1846              HC1     3rd Qu.:44.00
## 1847              HC1     Max.   :59.00
## 1848              HC1     NA's   :51833
## 1849             HC1A    Min.   :   0.0
## 1850             HC1A    1st Qu.: 459.5
## 1851             HC1A    Median : 918.0
## 1852             HC1A    Mean   : 917.9
## 1853             HC1A    3rd Qu.:1362.5
## 1854             HC1A    Max.   :1826.0
## 1855             HC1A     NA's   :51833
## 1856              HC2    Min.   :  15.0
## 1857              HC2    1st Qu.:  93.0
## 1858              HC2    Median : 121.0
## 1859              HC2    Mean   : 135.2
## 1860              HC2    3rd Qu.: 143.0
## 1861              HC2    Max.   :9996.0
## 1862              HC2     NA's   :51833
## 1863              HC3    Min.   : 370.0
## 1864              HC3    1st Qu.: 745.0
## 1865              HC3    Median : 853.0
## 1866              HC3    Mean   : 854.4
## 1867              HC3    3rd Qu.: 941.0
## 1868              HC3    Max.   :9996.0
## 1869              HC3     NA's   :51833
## 1870              HC4      Min.   :   0
## 1871              HC4      1st Qu.: 204
## 1872              HC4      Median : 904
## 1873              HC4      Mean   :1918
## 1874              HC4      3rd Qu.:2891
## 1875              HC4      Max.   :9998
## 1876              HC4     NA's   :51842
## 1877              HC5   Min.   :-530.00
## 1878              HC5   1st Qu.:-204.75
## 1879              HC5   Median :-134.00
## 1880              HC5   Mean   : -53.64
## 1881              HC5   3rd Qu.: -56.00
## 1882              HC5   Max.   :9998.00
## 1883              HC5     NA's   :51842
## 1884              HC6     Min.   : 7861
## 1885              HC6     1st Qu.: 9193
## 1886              HC6     Median : 9474
## 1887              HC6     Mean   :10186
## 1888              HC6     3rd Qu.: 9781
## 1889              HC6     Max.   :99998
```

```
## 1890              HC6     NA's   :51842
## 1891              HC7    Min.   :   0.0
## 1892              HC7    1st Qu.: 733.2
## 1893              HC7    Median :2175.0
## 1894              HC7    Mean   :3053.6
## 1895              HC7    3rd Qu.:4874.0
## 1896              HC7    Max.   :9998.0
## 1897              HC7     NA's   :51842
## 1898              HC8   Min.   :-457.00
## 1899              HC8   1st Qu.:-145.00
## 1900              HC8   Median : -78.00
## 1901              HC8   Mean   :   5.15
## 1902              HC8   3rd Qu.:  -3.00
## 1903              HC8   Max.   :9998.00
## 1904              HC8     NA's   :51842
## 1905              HC9     Min.   : 4769
## 1906              HC9     1st Qu.: 8436
## 1907              HC9     Median : 9149
## 1908              HC9     Mean   : 9952
## 1909              HC9     3rd Qu.: 9963
## 1910              HC9     Max.   :99998
## 1911              HC9     NA's   :51842
## 1912             HC10      Min.   :   1
## 1913             HC10      1st Qu.:3124
## 1914             HC10      Median :5432
## 1915             HC10      Mean   :5389
## 1916             HC10      3rd Qu.:7684
## 1917             HC10      Max.   :9998
## 1918             HC10     NA's   :51841
## 1919             HC11   Min.   :-375.00
## 1920             HC11   1st Qu.: -49.00
## 1921             HC11   Median :  11.00
## 1922             HC11   Mean   :  92.23
## 1923             HC11   3rd Qu.:  73.00
## 1924             HC11   Max.   :9998.00
## 1925             HC11     NA's   :51841
## 1926             HC12     Min.   : 6670
## 1927             HC12     1st Qu.: 9564
## 1928             HC12     Median :10114
## 1929             HC12     Mean   :10909
## 1930             HC12     3rd Qu.:10781
## 1931             HC12     Max.   :99998
## 1932             HC12     NA's   :51841
## 1933             HC13      Min.   :0.00
## 1934             HC13      1st Qu.:0.00
## 1935             HC13      Median :0.00
## 1936             HC13      Mean   :0.01
## 1937             HC13      3rd Qu.:0.00
## 1938             HC13      Max.   :6.00
## 1939             HC13     NA's   :51833
## 1940             HC15      Min.   :1.00
## 1941             HC15      1st Qu.:1.00
## 1942             HC15      Median :2.00
## 1943             HC15      Mean   :1.61
```

```
## 1944              HC15      3rd Qu.:2.00
## 1945              HC15      Max.   :2.00
## 1946              HC15     NA's   :51842
## 1947              HC16     Min.   : 1.00
## 1948              HC16     1st Qu.: 8.00
## 1949              HC16     Median :15.00
## 1950              HC16     Mean   :15.53
## 1951              HC16     3rd Qu.:23.00
## 1952              HC16     Max.   :31.00
## 1953              HC16     NA's   :51833
## 1954              HC17     Min.   : 1.00
## 1955              HC17     1st Qu.: 9.00
## 1956              HC17     Median :15.00
## 1957              HC17     Mean   :15.63
## 1958              HC17     3rd Qu.:22.00
## 1959              HC17     Max.   :31.00
## 1960              HC17     NA's   :51833
## 1961              HC18     Min.   : 1.00
## 1962              HC18     1st Qu.: 2.00
## 1963              HC18     Median : 6.00
## 1964              HC18     Mean   : 5.79
## 1965              HC18     3rd Qu.:11.00
## 1966              HC18     Max.   :12.00
## 1967              HC18     NA's   :51833
## 1968              HC19      Min.   :2019
## 1969              HC19      1st Qu.:2019
## 1970              HC19      Median :2020
## 1971              HC19      Mean   :2020
## 1972              HC19      3rd Qu.:2020
## 1973              HC19      Max.   :2020
## 1974              HC19     NA's   :51833
## 1975              HC20     Min.   :43780
## 1976              HC20     1st Qu.:43826
## 1977              HC20     Median :43872
## 1978              HC20     Mean   :43891
## 1979              HC20     3rd Qu.:43992
## 1980              HC20     Max.   :44031
## 1981              HC20     NA's   :51833
## 1982              HC21    Min.   : 105.0
## 1983              HC21    1st Qu.: 505.0
## 1984              HC21    Median : 905.0
## 1985              HC21    Mean   : 888.4
## 1986              HC21    3rd Qu.:1305.0
## 1987              HC21    Max.   :1707.0
## 1988              HC21     NA's   :51833
## 1989              HC27       Min.   :1.0
## 1990              HC27       1st Qu.:1.0
## 1991              HC27       Median :1.0
## 1992              HC27       Mean   :1.5
## 1993              HC27       3rd Qu.:2.0
## 1994              HC27       Max.   :2.0
## 1995              HC27     NA's   :51833
## 1996              HC30     Min.   : 1.00
## 1997              HC30     1st Qu.: 4.00
```

```
## 1998              HC30     Median : 6.00
## 1999              HC30     Mean   : 6.46
## 2000              HC30     3rd Qu.: 9.00
## 2001              HC30     Max.   :12.00
## 2002              HC30     NA's   :51833
## 2003              HC31      Min.   :2014
## 2004              HC31      1st Qu.:2016
## 2005              HC31      Median :2017
## 2006              HC31      Mean   :2017
## 2007              HC31      3rd Qu.:2018
## 2008              HC31      Max.   :2020
## 2009              HC31     NA's   :51833
## 2010              HC32      Min.   :1379
## 2011              HC32      1st Qu.:1398
## 2012              HC32      Median :1412
## 2013              HC32      Mean   :1412
## 2014              HC32      3rd Qu.:1427
## 2015              HC32      Max.   :1447
## 2016              HC32     NA's   :51833
## 2017             HC32A     Min.   :41959
## 2018             HC32A     1st Qu.:42531
## 2019             HC32A     Median :42974
## 2020             HC32A     Mean   :42973
## 2021             HC32A     3rd Qu.:43431
## 2022             HC32A     Max.   :44025
## 2023             HC32A     NA's   :51833
## 2024              HC33         Min.   :0
## 2025              HC33         1st Qu.:0
## 2026              HC33         Median :0
## 2027              HC33         Mean   :0
## 2028              HC33         3rd Qu.:0
## 2029              HC33         Max.   :3
## 2030              HC33     NA's   :51833
## 2031              HC51     Min.   : 0.00
## 2032              HC51     1st Qu.: 1.00
## 2033              HC51     Median : 2.00
## 2034              HC51     Mean   : 1.72
## 2035              HC51     3rd Qu.: 2.00
## 2036              HC51     Max.   :10.00
## 2037              HC51     NA's   :52212
## 2038              HC52         Min.   :1
## 2039              HC52         1st Qu.:1
## 2040              HC52         Median :1
## 2041              HC52         Mean   :1
## 2042              HC52         3rd Qu.:1
## 2043              HC52         Max.   :3
## 2044              HC52     NA's   :52212
## 2045              HC53     Min.   : 63.0
## 2046              HC53     1st Qu.:110.0
## 2047              HC53     Median :119.0
## 2048              HC53     Mean   :120.7
## 2049              HC53     3rd Qu.:128.0
## 2050              HC53     Max.   :996.0
## 2051              HC53     NA's   :52212
```

```
## 2052              HC55      Min.   :0.00
## 2053              HC55      1st Qu.:0.00
## 2054              HC55      Median :0.00
## 2055              HC55      Mean   :0.01
## 2056              HC55      3rd Qu.:0.00
## 2057              HC55      Max.   :4.00
## 2058              HC55     NA's   :52212
## 2059              HC56     Min.   : 60.0
## 2060              HC56     1st Qu.:105.0
## 2061              HC56     Median :114.0
## 2062              HC56     Mean   :113.2
## 2063              HC56     3rd Qu.:122.0
## 2064              HC56     Max.   :157.0
## 2065              HC56     NA's   :52221
## 2066              HC57      Min.   :1.00
## 2067              HC57      1st Qu.:3.00
## 2068              HC57      Median :4.00
## 2069              HC57      Mean   :3.48
## 2070              HC57      3rd Qu.:4.00
## 2071              HC57      Max.   :4.00
## 2072              HC57     NA's   :52221
## 2073              HC58       Min.   : NA
## 2074              HC58       1st Qu.: NA
## 2075              HC58       Median : NA
## 2076              HC58       Mean   :NaN
## 2077              HC58       3rd Qu.: NA
## 2078              HC58       Max.   : NA
## 2079              HC58     NA's   :55920
## 2080              HC60    Min.   :  1.00
## 2081              HC60    1st Qu.:  2.00
## 2082              HC60    Median :  2.00
## 2083              HC60    Mean   : 66.58
## 2084              HC60    3rd Qu.:  2.00
## 2085              HC60    Max.   :995.00
## 2086              HC60     NA's   :51833
## 2087              HC61      Min.   :0.00
## 2088              HC61      1st Qu.:1.00
## 2089              HC61      Median :1.00
## 2090              HC61      Mean   :1.17
## 2091              HC61      3rd Qu.:1.00
## 2092              HC61      Max.   :3.00
## 2093              HC61     NA's   :52073
## 2094              HC62      Min.   :0.00
## 2095              HC62      1st Qu.:3.00
## 2096              HC62      Median :4.00
## 2097              HC62      Mean   :4.17
## 2098              HC62      3rd Qu.:6.00
## 2099              HC62      Max.   :8.00
## 2100              HC62     NA's   :52528
## 2101              HC63    Min.   : 10.00
## 2102              HC63    1st Qu.: 29.00
## 2103              HC63    Median : 41.00
## 2104              HC63    Mean   : 48.52
## 2105              HC63    3rd Qu.: 61.00
```

```
## 2106             HC63    Max.   :191.00
## 2107             HC63     NA's   :53029
## 2108             HC64     Min.   : 1.00
## 2109             HC64     1st Qu.: 2.00
## 2110             HC64     Median : 3.00
## 2111             HC64     Mean   : 3.13
## 2112             HC64     3rd Qu.: 4.00
## 2113             HC64     Max.   :12.00
## 2114             HC64     NA's   :52099
## 2115             HC68      Min.   :0.00
## 2116             HC68      1st Qu.:1.00
## 2117             HC68      Median :1.00
## 2118             HC68      Mean   :1.17
## 2119             HC68      3rd Qu.:1.00
## 2120             HC68      Max.   :3.00
## 2121             HC68     NA's   :52073
## 2122             HC70    Min.   :-593.0
## 2123             HC70    1st Qu.:-229.0
## 2124             HC70    Median :-155.0
## 2125             HC70    Mean   :-137.4
## 2126             HC70    3rd Qu.: -74.0
## 2127             HC70    Max.   :9998.0
## 2128             HC70     NA's   :51842
## 2129             HC71   Min.   :-569.00
## 2130             HC71   1st Qu.:-122.00
## 2131             HC71   Median : -57.00
## 2132             HC71   Mean   : -48.35
## 2133             HC71   3rd Qu.:   6.00
## 2134             HC71   Max.   :9998.00
## 2135             HC71     NA's   :51841
## 2136             HC72    Min.   :-466.0
## 2137             HC72    1st Qu.: -25.0
## 2138             HC72    Median :  39.0
## 2139             HC72    Mean   :  55.1
## 2140             HC72    3rd Qu.: 106.0
## 2141             HC72    Max.   :9998.0
## 2142             HC72     NA's   :51841
## 2143             HC73   Min.   :-475.00
## 2144             HC73   1st Qu.: -11.00
## 2145             HC73   Median :  54.00
## 2146             HC73   Mean   :  73.77
## 2147             HC73   3rd Qu.: 119.00
## 2148             HC73   Max.   :9998.00
## 2149             HC73     NA's   :51842
## 2150             HC2A    Min.   :  14.0
## 2151             HC2A    1st Qu.:  93.0
## 2152             HC2A    Median : 120.0
## 2153             HC2A    Mean   : 135.1
## 2154             HC2A    3rd Qu.: 143.0
## 2155             HC2A    Max.   :9996.0
## 2156             HC2A     NA's   :51833
## 2157             HC3A    Min.   : 428.0
## 2158             HC3A    1st Qu.: 744.0
## 2159             HC3A    Median : 853.0
```

```
## 2160              HC3A    Mean   : 854.1
## 2161              HC3A    3rd Qu.: 941.0
## 2162              HC3A    Max.   :9996.0
## 2163              HC3A     NA's   :51833
## 2164             HC15A      Min.   :1.00
## 2165             HC15A      1st Qu.:1.00
## 2166             HC15A      Median :2.00
## 2167             HC15A      Mean   :1.61
## 2168             HC15A      3rd Qu.:2.00
## 2169             HC15A      Max.   :2.00
## 2170             HC15A     NA's   :51842
## 2171              HC2B       Min.   : 15
## 2172              HC2B       1st Qu.: 94
## 2173              HC2B       Median :115
## 2174              HC2B       Mean   :115
## 2175              HC2B       3rd Qu.:136
## 2176              HC2B       Max.   :330
## 2177              HC2B     NA's   :55009
## 2178              HC3B    Min.   : 370.0
## 2179              HC3B    1st Qu.: 749.0
## 2180              HC3B    Median : 830.0
## 2181              HC3B    Mean   : 821.1
## 2182              HC3B    3rd Qu.: 905.5
## 2183              HC3B    Max.   :1158.0
## 2184              HC3B     NA's   :55009
## 2185             HC15B      Min.   :0.00
## 2186             HC15B      1st Qu.:0.00
## 2187             HC15B      Median :0.00
## 2188             HC15B      Mean   :0.37
## 2189             HC15B      3rd Qu.:0.00
## 2190             HC15B      Max.   :2.00
## 2191             HC15B     NA's   :51833
## 2192              HC35      Min.   :0.00
## 2193              HC35      1st Qu.:0.00
## 2194              HC35      Median :0.00
## 2195              HC35      Mean   :0.35
## 2196              HC35      3rd Qu.:0.00
## 2197              HC35      Max.   :3.00
## 2198              HC35     NA's   :51833
## 2199               HB0     Min.   : 1.00
## 2200               HB0     1st Qu.: 1.00
## 2201               HB0     Median : 1.00
## 2202               HB0     Mean   : 2.13
## 2203               HB0     3rd Qu.: 3.00
## 2204               HB0     Max.   :15.00
## 2205               HB0     NA's   :49290
## 2206               HB1     Min.   :15.00
## 2207               HB1     1st Qu.:20.00
## 2208               HB1     Median :30.00
## 2209               HB1     Mean   :31.15
## 2210               HB1     3rd Qu.:40.00
## 2211               HB1     Max.   :59.00
## 2212               HB1     NA's   :49290
## 2213               HB2       Min.   : NA
```

```
## 2214              HB2       1st Qu.: NA
## 2215              HB2       Median : NA
## 2216              HB2       Mean   :NaN
## 2217              HB2       3rd Qu.: NA
## 2218              HB2       Max.   : NA
## 2219              HB2     NA's   :55920
## 2220              HB3       Min.   : NA
## 2221              HB3       1st Qu.: NA
## 2222              HB3       Median : NA
## 2223              HB3       Mean   :NaN
## 2224              HB3       3rd Qu.: NA
## 2225              HB3       Max.   : NA
## 2226              HB3     NA's   :55920
## 2227              HB4       Min.   : NA
## 2228              HB4       1st Qu.: NA
## 2229              HB4       Median : NA
## 2230              HB4       Mean   :NaN
## 2231              HB4       3rd Qu.: NA
## 2232              HB4       Max.   : NA
## 2233              HB4     NA's   :55920
## 2234              HB5       Min.   : NA
## 2235              HB5       1st Qu.: NA
## 2236              HB5       Median : NA
## 2237              HB5       Mean   :NaN
## 2238              HB5       3rd Qu.: NA
## 2239              HB5       Max.   : NA
## 2240              HB5     NA's   :55920
## 2241              HB6       Min.   : NA
## 2242              HB6       1st Qu.: NA
## 2243              HB6       Median : NA
## 2244              HB6       Mean   :NaN
## 2245              HB6       3rd Qu.: NA
## 2246              HB6       Max.   : NA
## 2247              HB6     NA's   :55920
## 2248             HB11       Min.   : NA
## 2249             HB11       1st Qu.: NA
## 2250             HB11       Median : NA
## 2251             HB11       Mean   :NaN
## 2252             HB11       3rd Qu.: NA
## 2253             HB11       Max.   : NA
## 2254             HB11     NA's   :55920
## 2255             HB12       Min.   : NA
## 2256             HB12       1st Qu.: NA
## 2257             HB12       Median : NA
## 2258             HB12       Mean   :NaN
## 2259             HB12       3rd Qu.: NA
## 2260             HB12       Max.   : NA
## 2261             HB12     NA's   :55920
## 2262            HB12A       Min.   : NA
## 2263            HB12A       1st Qu.: NA
## 2264            HB12A       Median : NA
## 2265            HB12A       Mean   :NaN
## 2266            HB12A       3rd Qu.: NA
## 2267            HB12A       Max.   : NA
```

```
## 2268            HB12A     NA's   :55920
## 2269            HB12B       Min.   : NA
## 2270            HB12B       1st Qu.: NA
## 2271            HB12B       Median : NA
## 2272            HB12B       Mean   :NaN
## 2273            HB12B       3rd Qu.: NA
## 2274            HB12B       Max.   : NA
## 2275            HB12B     NA's   :55920
## 2276             HB13       Min.   : NA
## 2277             HB13       1st Qu.: NA
## 2278             HB13       Median : NA
## 2279             HB13       Mean   :NaN
## 2280             HB13       3rd Qu.: NA
## 2281             HB13       Max.   : NA
## 2282             HB13     NA's   :55920
## 2283             HB21       Min.   : NA
## 2284             HB21       1st Qu.: NA
## 2285             HB21       Median : NA
## 2286             HB21       Mean   :NaN
## 2287             HB21       3rd Qu.: NA
## 2288             HB21       Max.   : NA
## 2289             HB21     NA's   :55920
## 2290             HB32      Min.   : 721
## 2291             HB32      1st Qu.: 961
## 2292             HB32      Median :1081
## 2293             HB32      Mean   :1064
## 2294             HB32      3rd Qu.:1201
## 2295             HB32      Max.   :1267
## 2296             HB32     NA's   :49290
## 2297             HB33      Min.   :1.00
## 2298             HB33      1st Qu.:1.00
## 2299             HB33      Median :1.00
## 2300             HB33      Mean   :1.05
## 2301             HB33      3rd Qu.:1.00
## 2302             HB33      Max.   :6.00
## 2303             HB33     NA's   :49290
## 2304             HB35     Min.   : 0.00
## 2305             HB35     1st Qu.: 0.00
## 2306             HB35     Median : 0.00
## 2307             HB35     Mean   : 0.28
## 2308             HB35     3rd Qu.: 0.00
## 2309             HB35     Max.   :33.00
## 2310             HB35     NA's   :49321
## 2311             HB40       Min.   : NA
## 2312             HB40       1st Qu.: NA
## 2313             HB40       Median : NA
## 2314             HB40       Mean   :NaN
## 2315             HB40       3rd Qu.: NA
## 2316             HB40       Max.   : NA
## 2317             HB40     NA's   :55920
## 2318             HB41       Min.   : NA
## 2319             HB41       1st Qu.: NA
## 2320             HB41       Median : NA
## 2321             HB41       Mean   :NaN
```

```
## 2322              HB41       3rd Qu.: NA
## 2323              HB41       Max.   : NA
## 2324              HB41     NA's   :55920
## 2325              HB50      Min.   :1.00
## 2326              HB50      1st Qu.:2.00
## 2327              HB50      Median :2.00
## 2328              HB50      Mean   :1.84
## 2329              HB50      3rd Qu.:2.00
## 2330              HB50      Max.   :2.00
## 2331              HB50     NA's   :49293
## 2332              HB51      Min.   :0.00
## 2333              HB51      1st Qu.:1.00
## 2334              HB51      Median :1.00
## 2335              HB51      Mean   :1.22
## 2336              HB51      3rd Qu.:1.00
## 2337              HB51      Max.   :4.00
## 2338              HB51     NA's   :54891
## 2339              HB52       Min.   : NA
## 2340              HB52       1st Qu.: NA
## 2341              HB52       Median : NA
## 2342              HB52       Mean   :NaN
## 2343              HB52       3rd Qu.: NA
## 2344              HB52       Max.   : NA
## 2345              HB52     NA's   :55920
## 2346              HB53       Min.   : NA
## 2347              HB53       1st Qu.: NA
## 2348              HB53       Median : NA
## 2349              HB53       Mean   :NaN
## 2350              HB53       3rd Qu.: NA
## 2351              HB53       Max.   : NA
## 2352              HB53     NA's   :55920
## 2353              HB55       Min.   : NA
## 2354              HB55       1st Qu.: NA
## 2355              HB55       Median : NA
## 2356              HB55       Mean   :NaN
## 2357              HB55       3rd Qu.: NA
## 2358              HB55       Max.   : NA
## 2359              HB55     NA's   :55920
## 2360              HB56       Min.   : NA
## 2361              HB56       1st Qu.: NA
## 2362              HB56       Median : NA
## 2363              HB56       Mean   :NaN
## 2364              HB56       3rd Qu.: NA
## 2365              HB56       Max.   : NA
## 2366              HB56     NA's   :55920
## 2367              HB57       Min.   : NA
## 2368              HB57       1st Qu.: NA
## 2369              HB57       Median : NA
## 2370              HB57       Mean   :NaN
## 2371              HB57       3rd Qu.: NA
## 2372              HB57       Max.   : NA
## 2373              HB57     NA's   :55920
## 2374              HB58       Min.   : NA
## 2375              HB58       1st Qu.: NA
```

```
## 2376             HB58       Median : NA
## 2377             HB58       Mean   :NaN
## 2378             HB58       3rd Qu.: NA
## 2379             HB58       Max.   : NA
## 2380             HB58     NA's   :55920
## 2381             HB60        Min.   :1
## 2382             HB60        1st Qu.:1
## 2383             HB60        Median :1
## 2384             HB60        Mean   :1
## 2385             HB60        3rd Qu.:1
## 2386             HB60        Max.   :1
## 2387             HB60     NA's   :54891
## 2388             HB61      Min.   :1.00
## 2389             HB61      1st Qu.:1.00
## 2390             HB61      Median :1.00
## 2391             HB61      Mean   :1.01
## 2392             HB61      3rd Qu.:1.00
## 2393             HB61      Max.   :5.00
## 2394             HB61     NA's   :49294
## 2395             HB62  Length:55920
## 2396             HB62  Class :character
## 2397             HB62  Mode  :character
## 2398             HB62                <NA>
## 2399             HB62                <NA>
## 2400             HB62                <NA>
## 2401             HB62                <NA>
## 2402             HB63      Min.   :1.00
## 2403             HB63      1st Qu.:1.00
## 2404             HB63      Median :1.00
## 2405             HB63      Mean   :1.02
## 2406             HB63      3rd Qu.:1.00
## 2407             HB63      Max.   :6.00
## 2408             HB63     NA's   :49295
## 2409             HB64       Min.   : NA
## 2410             HB64       1st Qu.: NA
## 2411             HB64       Median : NA
## 2412             HB64       Mean   :NaN
## 2413             HB64       3rd Qu.: NA
## 2414             HB64       Max.   : NA
## 2415             HB64     NA's   :55920
## 2416             HB65      Min.   :1.00
## 2417             HB65      1st Qu.:1.00
## 2418             HB65      Median :1.00
## 2419             HB65      Mean   :1.02
## 2420             HB65      3rd Qu.:1.00
## 2421             HB65      Max.   :6.00
## 2422             HB65     NA's   :49290
## 2423             HB66      Min.   :0.00
## 2424             HB66      1st Qu.:1.00
## 2425             HB66      Median :1.00
## 2426             HB66      Mean   :1.29
## 2427             HB66      3rd Qu.:2.00
## 2428             HB66      Max.   :3.00
## 2429             HB66     NA's   :49290
```

```
## 2430              HB67      Min.   : 0.0
## 2431              HB67      1st Qu.: 3.0
## 2432              HB67      Median : 4.0
## 2433              HB67      Mean   : 4.2
## 2434              HB67      3rd Qu.: 6.0
## 2435              HB67      Max.   :10.0
## 2436              HB67     NA's   :49884
## 2437              HB68      Min.   :0.00
## 2438              HB68      1st Qu.:1.00
## 2439              HB68      Median :1.00
## 2440              HB68      Mean   :1.29
## 2441              HB68      3rd Qu.:2.00
## 2442              HB68      Max.   :3.00
## 2443              HB68     NA's   :49290
## 2444              HB69       Min.   : NA
## 2445              HB69       1st Qu.: NA
## 2446              HB69       Median : NA
## 2447              HB69       Mean   :NaN
## 2448              HB69       3rd Qu.: NA
## 2449              HB69       Max.   : NA
## 2450              HB69     NA's   :55920
## 2451              HB70    Min.   : 105.0
## 2452              HB70    1st Qu.: 406.0
## 2453              HB70    Median : 905.0
## 2454              HB70    Mean   : 876.1
## 2455              HB70    3rd Qu.:1305.0
## 2456              HB70    Max.   :1707.0
## 2457              HB70     NA's   :49315
## 2458           HMLIDX     Min.   :1.000
## 2459           HMLIDX     1st Qu.:1.000
## 2460           HMLIDX     Median :1.000
## 2461           HMLIDX     Mean   :1.524
## 2462           HMLIDX     3rd Qu.:2.000
## 2463           HMLIDX     Max.   :7.000
## 2464           HMLIDX     NA's   :29215
## 2465             HML3     Min.   :0.000
## 2466             HML3     1st Qu.:1.000
## 2467             HML3     Median :1.000
## 2468             HML3     Mean   :0.972
## 2469             HML3     3rd Qu.:1.000
## 2470             HML3     Max.   :1.000
## 2471             HML3     NA's   :29215
## 2472             HML4     Min.   : 0.00
## 2473             HML4     1st Qu.: 4.00
## 2474             HML4     Median :13.00
## 2475             HML4     Mean   :33.01
## 2476             HML4     3rd Qu.:96.00
## 2477             HML4     Max.   :98.00
## 2478             HML4     NA's   :29215
## 2479             HML5       Min.   : NA
## 2480             HML5       1st Qu.: NA
## 2481             HML5       Median : NA
## 2482             HML5       Mean   :NaN
## 2483             HML5       3rd Qu.: NA
```

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## 2484              HML5       Max.   : NA
## 2485              HML5     NA's   :55920
## 2486              HML6       Min.   : NA
## 2487              HML6       1st Qu.: NA
## 2488              HML6       Median : NA
## 2489              HML6       Mean   :NaN
## 2490              HML6       3rd Qu.: NA
## 2491              HML6       Max.   : NA
## 2492              HML6     NA's   :55920
## 2493              HML7     Min.   :11.00
## 2494              HML7     1st Qu.:11.00
## 2495              HML7     Median :12.00
## 2496              HML7     Mean   :28.25
## 2497              HML7     3rd Qu.:17.00
## 2498              HML7     Max.   :98.00
## 2499              HML7     NA's   :29215
## 2500              HML8       Min.   : NA
## 2501              HML8       1st Qu.: NA
## 2502              HML8       Median : NA
## 2503              HML8       Mean   :NaN
## 2504              HML8       3rd Qu.: NA
## 2505              HML8       Max.   : NA
## 2506              HML8     NA's   :55920
## 2507              HML9       Min.   : NA
## 2508              HML9       1st Qu.: NA
## 2509              HML9       Median : NA
## 2510              HML9       Mean   :NaN
## 2511              HML9       3rd Qu.: NA
## 2512              HML9       Max.   : NA
## 2513              HML9     NA's   :55920
## 2514             HML10     Min.   :0.000
## 2515             HML10     1st Qu.:1.000
## 2516             HML10     Median :1.000
## 2517             HML10     Mean   :0.983
## 2518             HML10     3rd Qu.:1.000
## 2519             HML10     Max.   :1.000
## 2520             HML10     NA's   :29215
## 2521             HML11     Min.   :1.000
## 2522             HML11     1st Qu.:2.000
## 2523             HML11     Median :2.000
## 2524             HML11     Mean   :2.363
## 2525             HML11     3rd Qu.:3.000
## 2526             HML11     Max.   :4.000
## 2527             HML11     NA's   :29215
## 2528             HML21         Min.   :1
## 2529             HML21         1st Qu.:1
## 2530             HML21         Median :1
## 2531             HML21         Mean   :1
## 2532             HML21         3rd Qu.:1
## 2533             HML21         Max.   :1
## 2534             HML21     NA's   :29215
## 2535              HMLA    Min.   : 1.000
## 2536              HMLA    1st Qu.: 1.000
## 2537              HMLA    Median : 1.000
```

```
## 2538              HMLA    Mean   : 1.949
## 2539              HMLA    3rd Qu.: 3.000
## 2540              HMLA    Max.   :14.000
## 2541              HMLA     NA's   :29215
## 2542              HMLB     Min.   : 1.00
## 2543              HMLB     1st Qu.: 2.00
## 2544              HMLB     Median : 2.00
## 2545              HMLB     Mean   : 3.07
## 2546              HMLB     3rd Qu.: 4.00
## 2547              HMLB     Max.   :15.00
## 2548              HMLB     NA's   :33196
## 2549              HMLC     Min.   : 1.00
## 2550              HMLC     1st Qu.: 3.00
## 2551              HMLC     Median : 5.00
## 2552              HMLC     Mean   : 4.87
## 2553              HMLC     3rd Qu.: 6.00
## 2554              HMLC     Max.   :16.00
## 2555              HMLC     NA's   :44356
## 2556              HMLD     Min.   : 1.00
## 2557              HMLD     1st Qu.: 4.00
## 2558              HMLD     Median : 5.00
## 2559              HMLD     Mean   : 5.33
## 2560              HMLD     3rd Qu.: 6.00
## 2561              HMLD     Max.   :15.00
## 2562              HMLD     NA's   :53805
## 2563              HMLE       Min.   : NA
## 2564              HMLE       1st Qu.: NA
## 2565              HMLE       Median : NA
## 2566              HMLE       Mean   :NaN
## 2567              HMLE       3rd Qu.: NA
## 2568              HMLE       Max.   : NA
## 2569              HMLE     NA's   :55920
## 2570             HML22     Min.   :0.000
## 2571             HML22     1st Qu.:1.000
## 2572             HML22     Median :1.000
## 2573             HML22     Mean   :1.223
## 2574             HML22     3rd Qu.:1.000
## 2575             HML22     Max.   :3.000
## 2576             HML22     NA's   :29215
## 2577             HML23     Min.   :11.00
## 2578             HML23     1st Qu.:21.00
## 2579             HML23     Median :31.00
## 2580             HML23     Mean   :29.61
## 2581             HML23     3rd Qu.:31.00
## 2582             HML23     Max.   :98.00
## 2583             HML23     NA's   :53860
## 2584            SH135A      Min.   :0.00
## 2585            SH135A      1st Qu.:0.00
## 2586            SH135A      Median :0.00
## 2587            SH135A      Mean   :0.37
## 2588            SH135A      3rd Qu.:0.00
## 2589            SH135A      Max.   :8.00
## 2590            SH135A     NA's   :29215
## 2591            SH135B     Min.   :1.000
```

```
## 2592            SH135B     1st Qu.:1.000
## 2593            SH135B     Median :1.000
## 2594            SH135B     Mean   :1.264
## 2595            SH135B     3rd Qu.:2.000
## 2596            SH135B     Max.   :3.000
## 2597            SH135B     NA's   :29215
## 2598           SH137AA       Min.   : NA
## 2599           SH137AA       1st Qu.: NA
## 2600           SH137AA       Median : NA
## 2601           SH137AA       Mean   :NaN
## 2602           SH137AA       3rd Qu.: NA
## 2603           SH137AA       Max.   : NA
## 2604           SH137AA     NA's   :55920
## 2605            HMHIDX    Min.   : 1.000
## 2606            HMHIDX    1st Qu.: 2.000
## 2607            HMHIDX    Median : 3.000
## 2608            HMHIDX    Mean   : 3.126
## 2609            HMHIDX    3rd Qu.: 4.000
## 2610            HMHIDX    Max.   :16.000
## 2611            HMHIDX                <NA>
## 2612             HML12    Min.   :0.0000
## 2613             HML12    1st Qu.:0.0000
## 2614             HML12    Median :0.0000
## 2615             HML12    Mean   :0.4941
## 2616             HML12    3rd Qu.:1.0000
## 2617             HML12    Max.   :3.0000
## 2618             HML12                <NA>
## 2619             HML13    Min.   :0.0000
## 2620             HML13    1st Qu.:0.0000
## 2621             HML13    Median :0.0000
## 2622             HML13    Mean   :0.7279
## 2623             HML13    3rd Qu.:1.0000
## 2624             HML13    Max.   :7.0000
## 2625             HML13                <NA>
## 2626             HML14      Min.   :2.00
## 2627             HML14      1st Qu.:2.00
## 2628             HML14      Median :2.00
## 2629             HML14      Mean   :2.56
## 2630             HML14      3rd Qu.:3.00
## 2631             HML14      Max.   :6.00
## 2632             HML14     NA's   :55825
## 2633             HML15         Min.   :3
## 2634             HML15         1st Qu.:3
## 2635             HML15         Median :3
## 2636             HML15         Mean   :3
## 2637             HML15         3rd Qu.:3
## 2638             HML15         Max.   :3
## 2639             HML15     NA's   :55918
## 2640             HML16     Min.   : 0.00
## 2641             HML16     1st Qu.: 8.00
## 2642             HML16     Median :18.00
## 2643             HML16     Mean   :23.62
## 2644             HML16     3rd Qu.:36.00
## 2645             HML16     Max.   :98.00
```

```
## 2646            HML16               <NA>
## 2647           HML16A     Min.   : 6.00
## 2648           HML16A     1st Qu.:19.00
## 2649           HML16A     Median :32.00
## 2650           HML16A     Mean   :32.43
## 2651           HML16A     3rd Qu.:46.00
## 2652           HML16A     Max.   :59.00
## 2653           HML16A     NA's   :52212
## 2654            HML17    Min.   :0.0000
## 2655            HML17    1st Qu.:0.0000
## 2656            HML17    Median :0.0000
## 2657            HML17    Mean   :0.3896
## 2658            HML17    3rd Qu.:1.0000
## 2659            HML17    Max.   :3.0000
## 2660            HML17               <NA>
## 2661            HML18      Min.   :0.00
## 2662            HML18      1st Qu.:0.00
## 2663            HML18      Median :0.00
## 2664            HML18      Mean   :0.06
## 2665            HML18      3rd Qu.:0.00
## 2666            HML18      Max.   :1.00
## 2667            HML18     NA's   :41171
## 2668            HML19         Min.   :0
## 2669            HML19         1st Qu.:0
## 2670            HML19         Median :0
## 2671            HML19         Mean   :0
## 2672            HML19         3rd Qu.:0
## 2673            HML19         Max.   :0
## 2674            HML19               <NA>
## 2675            HML20    Min.   :0.0000
## 2676            HML20    1st Qu.:0.0000
## 2677            HML20    Median :0.0000
## 2678            HML20    Mean   :0.3894
## 2679            HML20    3rd Qu.:1.0000
## 2680            HML20    Max.   :1.0000
## 2681            HML20               <NA>
## 2682            HML30     Min.   : 0.00
## 2683            HML30     1st Qu.: 1.00
## 2684            HML30     Median : 2.00
## 2685            HML30     Mean   : 1.72
## 2686            HML30     3rd Qu.: 2.00
## 2687            HML30     Max.   :10.00
## 2688            HML30     NA's   :52212
## 2689            HML31      Min.   :1.00
## 2690            HML31      1st Qu.:1.00
## 2691            HML31      Median :1.00
## 2692            HML31      Mean   :1.01
## 2693            HML31      3rd Qu.:1.00
## 2694            HML31      Max.   :4.00
## 2695            HML31     NA's   :44827
## 2696            HML32      Min.   :0.00
## 2697            HML32      1st Qu.:0.00
## 2698            HML32      Median :0.00
## 2699            HML32      Mean   :0.01
```

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## 2700            HML32      3rd Qu.:0.00
## 2701            HML32      Max.   :1.00
## 2702            HML32     NA's   :44869
## 2703           HML32A      Min.   :0.00
## 2704           HML32A      1st Qu.:1.00
## 2705           HML32A      Median :1.00
## 2706           HML32A      Mean   :0.84
## 2707           HML32A      3rd Qu.:1.00
## 2708           HML32A      Max.   :1.00
## 2709           HML32A     NA's   :55850
## 2710           HML32B      Min.   :0.00
## 2711           HML32B      1st Qu.:0.00
## 2712           HML32B      Median :0.00
## 2713           HML32B      Mean   :0.09
## 2714           HML32B      3rd Qu.:0.00
## 2715           HML32B      Max.   :1.00
## 2716           HML32B     NA's   :55850
## 2717           HML32C      Min.   :0.00
## 2718           HML32C      1st Qu.:0.00
## 2719           HML32C      Median :0.00
## 2720           HML32C      Mean   :0.07
## 2721           HML32C      3rd Qu.:0.00
## 2722           HML32C      Max.   :1.00
## 2723           HML32C     NA's   :55850
## 2724           HML32D       Min.   : NA
## 2725           HML32D       1st Qu.: NA
## 2726           HML32D       Median : NA
## 2727           HML32D       Mean   :NaN
## 2728           HML32D       3rd Qu.: NA
## 2729           HML32D       Max.   : NA
## 2730           HML32D     NA's   :55920
## 2731           HML32E       Min.   : NA
## 2732           HML32E       1st Qu.: NA
## 2733           HML32E       Median : NA
## 2734           HML32E       Mean   :NaN
## 2735           HML32E       3rd Qu.: NA
## 2736           HML32E       Max.   : NA
## 2737           HML32E     NA's   :55920
## 2738           HML32F       Min.   : NA
## 2739           HML32F       1st Qu.: NA
## 2740           HML32F       Median : NA
## 2741           HML32F       Mean   :NaN
## 2742           HML32F       3rd Qu.: NA
## 2743           HML32F       Max.   : NA
## 2744           HML32F     NA's   :55920
## 2745           HML32G       Min.   : NA
## 2746           HML32G       1st Qu.: NA
## 2747           HML32G       Median : NA
## 2748           HML32G       Mean   :NaN
## 2749           HML32G       3rd Qu.: NA
## 2750           HML32G       Max.   : NA
## 2751           HML32G     NA's   :55920
## 2752            HML33      Min.   :0.00
## 2753            HML33      1st Qu.:0.00
```

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## 2754            HML33      Median :0.00
## 2755            HML33      Mean   :0.01
## 2756            HML33      3rd Qu.:0.00
## 2757            HML33      Max.   :6.00
## 2758            HML33      NA's   :44830
## 2759            HML34   Length:55920
## 2760            HML34   Class :character
## 2761            HML34   Mode  :character
## 2762            HML34                 <NA>
## 2763            HML34                 <NA>
## 2764            HML34                 <NA>
## 2765            HML34                 <NA>
## 2766            HML35      Min.   :0.00
## 2767            HML35      1st Qu.:0.00
## 2768            HML35      Median :0.00
## 2769            HML35      Mean   :0.03
## 2770            HML35      3rd Qu.:0.00
## 2771            HML35      Max.   :6.00
## 2772            HML35      NA's   :44851
## 2773            HML36      Min.   : 105
## 2774            HML36      1st Qu.: 406
## 2775            HML36      Median : 905
## 2776            HML36      Mean   : 886
## 2777            HML36      3rd Qu.:1305
## 2778            HML36      Max.   :1707
## 2779            HML36      NA's   :44841
## 2780            SBSEL      Min.   :1.00
## 2781            SBSEL      1st Qu.:1.00
## 2782            SBSEL      Median :1.00
## 2783            SBSEL      Mean   :1.33
## 2784            SBSEL      3rd Qu.:2.00
## 2785            SBSEL      Max.   :2.00
## 2786            SBSEL      NA's   :44823
## 2787           SB211F    Min.   : 105.0
## 2788           SB211F    1st Qu.: 406.0
## 2789           SB211F    Median : 905.0
## 2790           SB211F    Mean   : 872.7
## 2791           SB211F    3rd Qu.:1305.0
## 2792           SB211F    Max.   :1707.0
## 2793           SB211F     NA's   :48546
## 2794            SB217      Min.   :1.00
## 2795            SB217      1st Qu.:1.00
## 2796            SB217      Median :1.00
## 2797            SB217      Mean   :1.01
## 2798            SB217      3rd Qu.:1.00
## 2799            SB217      Max.   :4.00
## 2800            SB217      NA's   :48535
## 2801            SB239      Min.   :1.00
## 2802            SB239      1st Qu.:1.00
## 2803            SB239      Median :1.00
## 2804            SB239      Mean   :1.01
## 2805            SB239      3rd Qu.:1.00
## 2806            SB239      Max.   :5.00
## 2807            SB239      NA's   :48538
```

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## 2808            SB240      Min.   :1.00
## 2809            SB240      1st Qu.:2.00
## 2810            SB240      Median :2.00
## 2811            SB240      Mean   :1.98
## 2812            SB240      3rd Qu.:2.00
## 2813            SB240      Max.   :5.00
## 2814            SB240     NA's   :48538
## 2815            SB241      Min.   :1.00
## 2816            SB241      1st Qu.:1.00
## 2817            SB241      Median :1.00
## 2818            SB241      Mean   :1.08
## 2819            SB241      3rd Qu.:1.00
## 2820            SB241      Max.   :2.00
## 2821            SB241     NA's   :55689
## 2822            SB245         Min.   :1
## 2823            SB245         1st Qu.:2
## 2824            SB245         Median :2
## 2825            SB245         Mean   :2
## 2826            SB245         3rd Qu.:2
## 2827            SB245         Max.   :3
## 2828            SB245     NA's   :48540
## 2829            SB246         Min.   :1
## 2830            SB246         1st Qu.:1
## 2831            SB246         Median :1
## 2832            SB246         Mean   :1
## 2833            SB246         3rd Qu.:1
## 2834            SB246         Max.   :1
## 2835            SB246     NA's   :55915
## 2836            SB247         Min.   :0
## 2837            SB247         1st Qu.:0
## 2838            SB247         Median :0
## 2839            SB247         Mean   :0
## 2840            SB247         3rd Qu.:0
## 2841            SB247         Max.   :0
## 2842            SB247     NA's   :55915
## 2843            SB249      Min.   :0.00
## 2844            SB249      1st Qu.:0.00
## 2845            SB249      Median :0.00
## 2846            SB249      Mean   :0.29
## 2847            SB249      3rd Qu.:1.00
## 2848            SB249      Max.   :1.00
## 2849            SB249     NA's   :55834
## 2850            SB253      Min.   :1.00
## 2851            SB253      1st Qu.:1.00
## 2852            SB253      Median :1.00
## 2853            SB253      Mean   :1.09
## 2854            SB253      3rd Qu.:1.00
## 2855            SB253      Max.   :6.00
## 2856            SB253     NA's   :55867
## 2857            SB254      Min.   :1.00
## 2858            SB254      1st Qu.:1.00
## 2859            SB254      Median :1.00
## 2860            SB254      Mean   :1.09
## 2861            SB254      3rd Qu.:1.00
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## 2862            SB254      Max.   :6.00
## 2863            SB254     NA's   :55867
## 2864            SB117      Min.   :1.00
## 2865            SB117      1st Qu.:1.00
## 2866            SB117      Median :1.00
## 2867            SB117      Mean   :1.01
## 2868            SB117      3rd Qu.:1.00
## 2869            SB117      Max.   :6.00
## 2870            SB117     NA's   :52212
## 2871           SB121A      Min.   :0.00
## 2872           SB121A      1st Qu.:0.00
## 2873           SB121A      Median :0.00
## 2874           SB121A      Mean   :0.05
## 2875           SB121A      3rd Qu.:0.00
## 2876           SB121A      Max.   :1.00
## 2877           SB121A     NA's   :55808
## 2878           SB121B         Min.   :0
## 2879           SB121B         1st Qu.:0
## 2880           SB121B         Median :0
## 2881           SB121B         Mean   :0
## 2882           SB121B         3rd Qu.:0
## 2883           SB121B         Max.   :0
## 2884           SB121B     NA's   :55808
## 2885           SB121C      Min.   :0.00
## 2886           SB121C      1st Qu.:0.00
## 2887           SB121C      Median :0.00
## 2888           SB121C      Mean   :0.02
## 2889           SB121C      3rd Qu.:0.00
## 2890           SB121C      Max.   :1.00
## 2891           SB121C     NA's   :55808
## 2892           SB121D      Min.   :0.00
## 2893           SB121D      1st Qu.:0.00
## 2894           SB121D      Median :0.00
## 2895           SB121D      Mean   :0.03
## 2896           SB121D      3rd Qu.:0.00
## 2897           SB121D      Max.   :1.00
## 2898           SB121D     NA's   :55808
## 2899           SB121E      Min.   :0.00
## 2900           SB121E      1st Qu.:0.00
## 2901           SB121E      Median :0.00
## 2902           SB121E      Mean   :0.04
## 2903           SB121E      3rd Qu.:0.00
## 2904           SB121E      Max.   :1.00
## 2905           SB121E     NA's   :55808
## 2906           SB121F      Min.   :0.00
## 2907           SB121F      1st Qu.:0.00
## 2908           SB121F      Median :0.00
## 2909           SB121F      Mean   :0.01
## 2910           SB121F      3rd Qu.:0.00
## 2911           SB121F      Max.   :1.00
## 2912           SB121F     NA's   :55808
## 2913           SB121G      Min.   :0.00
## 2914           SB121G      1st Qu.:0.00
## 2915           SB121G      Median :0.00
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## 2916           SB121G      Mean   :0.02
## 2917           SB121G      3rd Qu.:0.00
## 2918           SB121G      Max.   :1.00
## 2919           SB121G     NA's   :55808
## 2920           SB121H         Min.   :0
## 2921           SB121H         1st Qu.:0
## 2922           SB121H         Median :0
## 2923           SB121H         Mean   :0
## 2924           SB121H         3rd Qu.:0
## 2925           SB121H         Max.   :0
## 2926           SB121H     NA's   :55808
## 2927            SB124      Min.   :0.00
## 2928            SB124      1st Qu.:0.00
## 2929            SB124      Median :0.00
## 2930            SB124      Mean   :0.28
## 2931            SB124      3rd Qu.:1.00
## 2932            SB124      Max.   :1.00
## 2933            SB124     NA's   :55833
## 2934            SB128      Min.   :1.00
## 2935            SB128      1st Qu.:1.00
## 2936            SB128      Median :1.00
## 2937            SB128      Mean   :1.08
## 2938            SB128      3rd Qu.:1.00
## 2939            SB128      Max.   :6.00
## 2940            SB128     NA's   :55857
## 2941            SB129      Min.   :1.00
## 2942            SB129      1st Qu.:1.00
## 2943            SB129      Median :1.00
## 2944            SB129      Mean   :1.08
## 2945            SB129      3rd Qu.:1.00
## 2946            SB129      Max.   :6.00
## 2947            SB129     NA's   :55857
## 2948           IDXDIS    Min.   : 1.000
## 2949           IDXDIS    1st Qu.: 2.000
## 2950           IDXDIS    Median : 3.000
## 2951           IDXDIS    Mean   : 3.126
## 2952           IDXDIS    3rd Qu.: 4.000
## 2953           IDXDIS    Max.   :16.000
## 2954           IDXDIS                <NA>
## 2955            HDIS1     Min.   :0.000
## 2956            HDIS1     1st Qu.:0.000
## 2957            HDIS1     Median :0.000
## 2958            HDIS1     Mean   :0.036
## 2959            HDIS1     3rd Qu.:0.000
## 2960            HDIS1     Max.   :1.000
## 2961            HDIS1      NA's   :8069
## 2962            HDIS2     Min.   :1.000
## 2963            HDIS2     1st Qu.:1.000
## 2964            HDIS2     Median :1.000
## 2965            HDIS2     Mean   :1.161
## 2966            HDIS2     3rd Qu.:1.000
## 2967            HDIS2     Max.   :8.000
## 2968            HDIS2      NA's   :8069
## 2969            HDIS3      Min.   :0.00
```

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## 2970            HDIS3      1st Qu.:0.00
## 2971            HDIS3      Median :0.00
## 2972            HDIS3      Mean   :0.01
## 2973            HDIS3      3rd Qu.:0.00
## 2974            HDIS3      Max.   :1.00
## 2975            HDIS3      NA's   :8069
## 2976            HDIS4     Min.   :1.000
## 2977            HDIS4     1st Qu.:1.000
## 2978            HDIS4     Median :1.000
## 2979            HDIS4     Mean   :1.052
## 2980            HDIS4     3rd Qu.:1.000
## 2981            HDIS4     Max.   :4.000
## 2982            HDIS4      NA's   :8069
## 2983            HDIS5      Min.   :1.00
## 2984            HDIS5      1st Qu.:1.00
## 2985            HDIS5      Median :1.00
## 2986            HDIS5      Mean   :1.02
## 2987            HDIS5      3rd Qu.:1.00
## 2988            HDIS5      Max.   :4.00
## 2989            HDIS5      NA's   :8069
## 2990            HDIS6      Min.   :1.00
## 2991            HDIS6      1st Qu.:1.00
## 2992            HDIS6      Median :1.00
## 2993            HDIS6      Mean   :1.07
## 2994            HDIS6      3rd Qu.:1.00
## 2995            HDIS6      Max.   :8.00
## 2996            HDIS6      NA's   :8069
## 2997            HDIS7     Min.   :1.000
## 2998            HDIS7     1st Qu.:1.000
## 2999            HDIS7     Median :1.000
## 3000            HDIS7     Mean   :1.086
## 3001            HDIS7     3rd Qu.:1.000
## 3002            HDIS7     Max.   :8.000
## 3003            HDIS7      NA's   :8069
## 3004            HDIS8     Min.   :1.000
## 3005            HDIS8     1st Qu.:1.000
## 3006            HDIS8     Median :1.000
## 3007            HDIS8     Mean   :1.026
## 3008            HDIS8     3rd Qu.:1.000
## 3009            HDIS8     Max.   :4.000
## 3010            HDIS8      NA's   :8069
## 3011            HDIS9     Min.   :1.000
## 3012            HDIS9     1st Qu.:1.000
## 3013            HDIS9     Median :1.000
## 3014            HDIS9     Mean   :1.266
## 3015            HDIS9     3rd Qu.:1.000
## 3016            HDIS9     Max.   :8.000
## 3017            HDIS9      NA's   :8069
## 3018             MHA0     Min.   : 1.00
## 3019             MHA0     1st Qu.: 2.00
## 3020             MHA0     Median : 2.00
## 3021             MHA0     Mean   : 2.55
## 3022             MHA0     3rd Qu.: 3.00
## 3023             MHA0     Max.   :11.00
```

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## 3024              MHA0     NA's   :51875
## 3025              MHA1     Min.   :15.00
## 3026              MHA1     1st Qu.:20.00
## 3027              MHA1     Median :28.00
## 3028              MHA1     Mean   :28.97
## 3029              MHA1     3rd Qu.:37.00
## 3030              MHA1     Max.   :49.00
## 3031              MHA1     NA's   :51875
## 3032              MHA2      Min.   : 245
## 3033              MHA2      1st Qu.: 501
## 3034              MHA2      Median : 559
## 3035              MHA2      Mean   : 617
## 3036              MHA2      3rd Qu.: 628
## 3037              MHA2      Max.   :9996
## 3038              MHA2     NA's   :51881
## 3039              MHA3      Min.   :1346
## 3040              MHA3      1st Qu.:1524
## 3041              MHA3      Median :1566
## 3042              MHA3      Mean   :1601
## 3043              MHA3      3rd Qu.:1609
## 3044              MHA3      Max.   :9996
## 3045              MHA3     NA's   :51882
## 3046              MHA4      Min.   :   0
## 3047              MHA4      1st Qu.: 325
## 3048              MHA4      Median :1220
## 3049              MHA4      Mean   :2110
## 3050              MHA4      3rd Qu.:3249
## 3051              MHA4      Max.   :9980
## 3052              MHA4     NA's   :51899
## 3053              MHA5    Min.   :-475.0
## 3054              MHA5    1st Qu.:-185.0
## 3055              MHA5    Median :-117.0
## 3056              MHA5    Mean   :-115.4
## 3057              MHA5    3rd Qu.: -45.0
## 3058              MHA5    Max.   : 293.0
## 3059              MHA5     NA's   :51899
## 3060              MHA6     Min.   : 8271
## 3061              MHA6     1st Qu.: 9315
## 3062              MHA6     Median : 9572
## 3063              MHA6     Mean   : 9574
## 3064              MHA6     3rd Qu.: 9834
## 3065              MHA6     Max.   :11216
## 3066              MHA6     NA's   :51899
## 3067             MHA11   Min.   :-393.00
## 3068             MHA11   1st Qu.:-103.00
## 3069             MHA11   Median : -35.00
## 3070             MHA11   Mean   : -14.03
## 3071             MHA11   3rd Qu.:  36.00
## 3072             MHA11   Max.   :9998.00
## 3073             MHA11     NA's   :51899
## 3074             MHA12     Min.   : 5635
## 3075             MHA12     1st Qu.: 8607
## 3076             MHA12     Median : 9508
## 3077             MHA12     Mean   : 9845
```

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## 3078            MHA12     3rd Qu.:10547
## 3079            MHA12     Max.   :99998
## 3080            MHA12     NA's   :51899
## 3081           MHA12A     Min.   : 6720
## 3082           MHA12A     1st Qu.: 9937
## 3083           MHA12A     Median :10907
## 3084           MHA12A     Mean   :11332
## 3085           MHA12A     3rd Qu.:12120
## 3086           MHA12A     Max.   :99998
## 3087           MHA12A     NA's   :51899
## 3088           MHA12B     Min.   : 7160
## 3089           MHA12B     1st Qu.:11054
## 3090           MHA12B     Median :12161
## 3091           MHA12B     Mean   :12587
## 3092           MHA12B     3rd Qu.:13488
## 3093           MHA12B     Max.   :99998
## 3094           MHA12B     NA's   :51899
## 3095            MHA13      Min.   :0.00
## 3096            MHA13      1st Qu.:0.00
## 3097            MHA13      Median :0.00
## 3098            MHA13      Mean   :0.02
## 3099            MHA13      3rd Qu.:0.00
## 3100            MHA13      Max.   :6.00
## 3101            MHA13     NA's   :51882
## 3102            MHA21     Min.   :  105
## 3103            MHA21     1st Qu.:  406
## 3104            MHA21     Median :  905
## 3105            MHA21     Mean   : 1000
## 3106            MHA21     3rd Qu.: 1305
## 3107            MHA21     Max.   :99999
## 3108            MHA21     NA's   :51875
## 3109            MHA32      Min.   : 841
## 3110            MHA32      1st Qu.: 997
## 3111            MHA32      Median :1099
## 3112            MHA32      Mean   :1090
## 3113            MHA32      3rd Qu.:1197
## 3114            MHA32      Max.   :1267
## 3115            MHA32     NA's   :51875
## 3116            MHA33      Min.   :1.00
## 3117            MHA33      1st Qu.:1.00
## 3118            MHA33      Median :1.00
## 3119            MHA33      Mean   :1.03
## 3120            MHA33      3rd Qu.:1.00
## 3121            MHA33      Max.   :6.00
## 3122            MHA33     NA's   :51875
## 3123            MHA35         Min.   :0
## 3124            MHA35         1st Qu.:0
## 3125            MHA35         Median :0
## 3126            MHA35         Mean   :0
## 3127            MHA35         3rd Qu.:0
## 3128            MHA35         Max.   :6
## 3129            MHA35     NA's   :51887
## 3130            MHA40      Min.   :1236
## 3131            MHA40      1st Qu.:2075
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## 3132            MHA40      Median :2275
## 3133            MHA40      Mean   :2338
## 3134            MHA40      3rd Qu.:2534
## 3135            MHA40      Max.   :4673
## 3136            MHA40     NA's   :51899
## 3137            MHA41      Min.   : 853
## 3138            MHA41      1st Qu.:1327
## 3139            MHA41      Median :1460
## 3140            MHA41      Mean   :1495
## 3141            MHA41      3rd Qu.:1620
## 3142            MHA41      Max.   :3238
## 3143            MHA41     NA's   :51899
## 3144            MHA50      Min.   :1.00
## 3145            MHA50      1st Qu.:2.00
## 3146            MHA50      Median :2.00
## 3147            MHA50      Mean   :1.85
## 3148            MHA50      3rd Qu.:2.00
## 3149            MHA50      Max.   :2.00
## 3150            MHA50     NA's   :51877
## 3151            MHA51      Min.   :0.00
## 3152            MHA51      1st Qu.:1.00
## 3153            MHA51      Median :2.00
## 3154            MHA51      Mean   :1.52
## 3155            MHA51      3rd Qu.:2.00
## 3156            MHA51      Max.   :4.00
## 3157            MHA51     NA's   :55320
## 3158            MHA52         Min.   :1
## 3159            MHA52         1st Qu.:1
## 3160            MHA52         Median :1
## 3161            MHA52         Mean   :1
## 3162            MHA52         3rd Qu.:1
## 3163            MHA52         Max.   :1
## 3164            MHA52     NA's   :51904
## 3165            MHA53     Min.   : 60.0
## 3166            MHA53     1st Qu.:131.0
## 3167            MHA53     Median :139.0
## 3168            MHA53     Mean   :138.7
## 3169            MHA53     3rd Qu.:147.0
## 3170            MHA53     Max.   :996.0
## 3171            MHA53     NA's   :51904
## 3172            MHA54      Min.   :0.00
## 3173            MHA54      1st Qu.:0.00
## 3174            MHA54      Median :0.00
## 3175            MHA54      Mean   :0.06
## 3176            MHA54      3rd Qu.:0.00
## 3177            MHA54      Max.   :1.00
## 3178            MHA54     NA's   :51875
## 3179            MHA55         Min.   :0
## 3180            MHA55         1st Qu.:0
## 3181            MHA55         Median :0
## 3182            MHA55         Mean   :0
## 3183            MHA55         3rd Qu.:0
## 3184            MHA55         Max.   :6
## 3185            MHA55     NA's   :51904
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## 3186            MHA56     Min.   : 56.0
## 3187            MHA56     1st Qu.:126.0
## 3188            MHA56     Median :134.0
## 3189            MHA56     Mean   :132.9
## 3190            MHA56     3rd Qu.:141.0
## 3191            MHA56     Max.   :243.0
## 3192            MHA56     NA's   :51906
## 3193            MHA57      Min.   :1.00
## 3194            MHA57      1st Qu.:4.00
## 3195            MHA57      Median :4.00
## 3196            MHA57      Mean   :3.85
## 3197            MHA57      3rd Qu.:4.00
## 3198            MHA57      Max.   :4.00
## 3199            MHA57     NA's   :51906
## 3200            MHA58       Min.   : NA
## 3201            MHA58       1st Qu.: NA
## 3202            MHA58       Median : NA
## 3203            MHA58       Mean   :NaN
## 3204            MHA58       3rd Qu.: NA
## 3205            MHA58       Max.   : NA
## 3206            MHA58     NA's   :55920
## 3207            MHA60      Min.   :1.00
## 3208            MHA60      1st Qu.:1.00
## 3209            MHA60      Median :2.00
## 3210            MHA60      Mean   :1.58
## 3211            MHA60      3rd Qu.:2.00
## 3212            MHA60      Max.   :2.00
## 3213            MHA60     NA's   :51876
## 3214            MHA61      Min.   :1.00
## 3215            MHA61      1st Qu.:1.00
## 3216            MHA61      Median :1.00
## 3217            MHA61      Mean   :1.01
## 3218            MHA61      3rd Qu.:1.00
## 3219            MHA61      Max.   :4.00
## 3220            MHA61     NA's   :51880
## 3221            MHA62  Length:55920
## 3222            MHA62  Class :character
## 3223            MHA62  Mode  :character
## 3224            MHA62                <NA>
## 3225            MHA62                <NA>
## 3226            MHA62                <NA>
## 3227            MHA62                <NA>
## 3228            MHA63      Min.   :1.00
## 3229            MHA63      1st Qu.:1.00
## 3230            MHA63      Median :1.00
## 3231            MHA63      Mean   :1.02
## 3232            MHA63      3rd Qu.:1.00
## 3233            MHA63      Max.   :6.00
## 3234            MHA63     NA's   :51881
## 3235            MHA64       Min.   : NA
## 3236            MHA64       1st Qu.: NA
## 3237            MHA64       Median : NA
## 3238            MHA64       Mean   :NaN
## 3239            MHA64       3rd Qu.: NA
```

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## 3240            MHA64       Max.   : NA
## 3241            MHA64     NA's   :55920
## 3242            MHA65      Min.   :1.00
## 3243            MHA65      1st Qu.:1.00
## 3244            MHA65      Median :1.00
## 3245            MHA65      Mean   :1.01
## 3246            MHA65      3rd Qu.:1.00
## 3247            MHA65      Max.   :7.00
## 3248            MHA65     NA's   :51875
## 3249            MHA66       Min.   :0.0
## 3250            MHA66       1st Qu.:1.0
## 3251            MHA66       Median :1.0
## 3252            MHA66       Mean   :1.3
## 3253            MHA66       3rd Qu.:2.0
## 3254            MHA66       Max.   :3.0
## 3255            MHA66     NA's   :51875
## 3256            MHA67     Min.   : 0.00
## 3257            MHA67     1st Qu.: 3.00
## 3258            MHA67     Median : 4.00
## 3259            MHA67     Mean   : 4.15
## 3260            MHA67     3rd Qu.: 6.00
## 3261            MHA67     Max.   :10.00
## 3262            MHA67     NA's   :52240
## 3263            MHA68       Min.   :0.0
## 3264            MHA68       1st Qu.:1.0
## 3265            MHA68       Median :1.0
## 3266            MHA68       Mean   :1.3
## 3267            MHA68       3rd Qu.:2.0
## 3268            MHA68       Max.   :3.0
## 3269            MHA68     NA's   :51875
## 3270            MHA69       Min.   : NA
## 3271            MHA69       1st Qu.: NA
## 3272            MHA69       Median : NA
## 3273            MHA69       Mean   :NaN
## 3274            MHA69       3rd Qu.: NA
## 3275            MHA69       Max.   : NA
## 3276            MHA69     NA's   :55920
## 3277            MHA70    Min.   : 105.0
## 3278            MHA70    1st Qu.: 406.0
## 3279            MHA70    Median : 905.0
## 3280            MHA70    Mean   : 877.2
## 3281            MHA70    3rd Qu.:1305.0
## 3282            MHA70    Max.   :1707.0
## 3283            MHA70     NA's   :51889
## 3284           SB505A       Min.   :0.0
## 3285           SB505A       1st Qu.:0.0
## 3286           SB505A       Median :0.0
## 3287           SB505A       Mean   :0.1
## 3288           SB505A       3rd Qu.:0.0
## 3289           SB505A       Max.   :1.0
## 3290           SB505A     NA's   :51886
## 3291           SB505B       Min.   :0.0
## 3292           SB505B       1st Qu.:0.0
## 3293           SB505B       Median :0.0
```

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## 3294            SB505B       Mean   :0.1
## 3295            SB505B       3rd Qu.:0.0
## 3296            SB505B       Max.   :1.0
## 3297            SB505B     NA's   :51889
## 3298           SB505CH     Min.   : 0.00
## 3299           SB505CH     1st Qu.: 9.00
## 3300           SB505CH     Median :12.00
## 3301           SB505CH     Mean   :25.36
## 3302           SB505CH     3rd Qu.:19.00
## 3303           SB505CH     Max.   :94.00
## 3304           SB505CH     NA's   :52276
## 3305           SB505CM      Min.   : 0.0
## 3306           SB505CM      1st Qu.: 0.0
## 3307           SB505CM      Median : 0.0
## 3308           SB505CM      Mean   :10.8
## 3309           SB505CM      3rd Qu.:30.0
## 3310           SB505CM      Max.   :59.0
## 3311           SB505CM     NA's   :52883
## 3312            SB513A         Min.   :1
## 3313            SB513A         1st Qu.:1
## 3314            SB513A         Median :1
## 3315            SB513A         Mean   :1
## 3316            SB513A         3rd Qu.:1
## 3317            SB513A         Max.   :3
## 3318            SB513A     NA's   :51904
## 3319            SB513C         Min.   :1
## 3320            SB513C         1st Qu.:1
## 3321            SB513C         Median :1
## 3322            SB513C         Mean   :1
## 3323            SB513C         3rd Qu.:1
## 3324            SB513C         Max.   :3
## 3325            SB513C     NA's   :51904
## 3326             SB515      Min.   :1.00
## 3327             SB515      1st Qu.:1.00
## 3328             SB515      Median :1.00
## 3329             SB515      Mean   :1.01
## 3330             SB515      3rd Qu.:1.00
## 3331             SB515      Max.   :4.00
## 3332             SB515     NA's   :51879
## 3333            SB515F    Min.   : 105.0
## 3334            SB515F    1st Qu.: 406.0
## 3335            SB515F    Median : 905.0
## 3336            SB515F    Mean   : 877.2
## 3337            SB515F    3rd Qu.:1305.0
## 3338            SB515F    Max.   :1707.0
## 3339            SB515F     NA's   :51890
## 3340             SB527      Min.   :1.00
## 3341             SB527      1st Qu.:1.00
## 3342             SB527      Median :1.00
## 3343             SB527      Mean   :1.03
## 3344             SB527      3rd Qu.:1.00
## 3345             SB527      Max.   :6.00
## 3346             SB527     NA's   :51879
## 3347             SB528      Min.   :1.00
```

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## 3348            SB528      1st Qu.:1.00
## 3349            SB528      Median :1.00
## 3350            SB528      Mean   :1.03
## 3351            SB528      3rd Qu.:1.00
## 3352            SB528      Max.   :6.00
## 3353            SB528     NA's   :51879
## 3354           SB529A      Min.   :0.00
## 3355           SB529A      1st Qu.:1.00
## 3356           SB529A      Median :1.00
## 3357           SB529A      Mean   :0.99
## 3358           SB529A      3rd Qu.:1.00
## 3359           SB529A      Max.   :1.00
## 3360           SB529A     NA's   :51875
## 3361           SB529B      Min.   :0.00
## 3362           SB529B      1st Qu.:1.00
## 3363           SB529B      Median :1.00
## 3364           SB529B      Mean   :0.99
## 3365           SB529B      3rd Qu.:1.00
## 3366           SB529B      Max.   :1.00
## 3367           SB529B     NA's   :51875
## 3368           SB529C      Min.   :0.00
## 3369           SB529C      1st Qu.:1.00
## 3370           SB529C      Median :1.00
## 3371           SB529C      Mean   :0.99
## 3372           SB529C      3rd Qu.:1.00
## 3373           SB529C      Max.   :1.00
## 3374           SB529C     NA's   :51875
## 3375           SB529D      Min.   :0.00
## 3376           SB529D      1st Qu.:1.00
## 3377           SB529D      Median :1.00
## 3378           SB529D      Mean   :0.98
## 3379           SB529D      3rd Qu.:1.00
## 3380           SB529D      Max.   :1.00
## 3381           SB529D     NA's   :51875
## 3382           SB530D      Min.   : 1.0
## 3383           SB530D      1st Qu.: 9.0
## 3384           SB530D      Median :15.0
## 3385           SB530D      Mean   :15.3
## 3386           SB530D      3rd Qu.:22.0
## 3387           SB530D      Max.   :30.0
## 3388           SB530D     NA's   :51905
## 3389           SB530M     Min.   : 1.00
## 3390           SB530M     1st Qu.: 2.00
## 3391           SB530M     Median : 6.00
## 3392           SB530M     Mean   : 5.77
## 3393           SB530M     3rd Qu.:11.00
## 3394           SB530M     Max.   :12.00
## 3395           SB530M     NA's   :51906
## 3396           SB530Y      Min.   :2019
## 3397           SB530Y      1st Qu.:2019
## 3398           SB530Y      Median :2020
## 3399           SB530Y      Mean   :2020
## 3400           SB530Y      3rd Qu.:2020
## 3401           SB530Y      Max.   :2020
```

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## 3402           SB530Y     NA's   :51905
## 3403           SB531H     Min.   : 1.00
## 3404           SB531H     1st Qu.:12.00
## 3405           SB531H     Median :13.00
## 3406           SB531H     Mean   :13.34
## 3407           SB531H     3rd Qu.:15.00
## 3408           SB531H     Max.   :22.00
## 3409           SB531H     NA's   :51905
## 3410           SB531M      Min.   : 0.0
## 3411           SB531M      1st Qu.:10.0
## 3412           SB531M      Median :26.0
## 3413           SB531M      Mean   :25.7
## 3414           SB531M      3rd Qu.:40.0
## 3415           SB531M      Max.   :59.0
## 3416           SB531M     NA's   :51905
## 3417            SB533         Min.   :1
## 3418            SB533         1st Qu.:1
## 3419            SB533         Median :1
## 3420            SB533         Mean   :1
## 3421            SB533         3rd Qu.:1
## 3422            SB533         Max.   :5
## 3423            SB533     NA's   :51904
## 3424            SB534      Min.   :1.00
## 3425            SB534      1st Qu.:2.00
## 3426            SB534      Median :2.00
## 3427            SB534      Mean   :1.98
## 3428            SB534      3rd Qu.:2.00
## 3429            SB534      Max.   :2.00
## 3430            SB534     NA's   :51908
## 3431            SB535         Min.   :1
## 3432            SB535         1st Qu.:1
## 3433            SB535         Median :1
## 3434            SB535         Mean   :1
## 3435            SB535         3rd Qu.:1
## 3436            SB535         Max.   :2
## 3437            SB535     NA's   :51904
## 3438           SB536D     Min.   : 1.00
## 3439           SB536D     1st Qu.: 9.00
## 3440           SB536D     Median :15.00
## 3441           SB536D     Mean   :15.31
## 3442           SB536D     3rd Qu.:22.00
## 3443           SB536D     Max.   :30.00
## 3444           SB536D     NA's   :51906
## 3445           SB536M     Min.   : 1.00
## 3446           SB536M     1st Qu.: 2.00
## 3447           SB536M     Median : 6.00
## 3448           SB536M     Mean   : 5.78
## 3449           SB536M     3rd Qu.:11.00
## 3450           SB536M     Max.   :12.00
## 3451           SB536M     NA's   :51906
## 3452           SB536Y      Min.   :2019
## 3453           SB536Y      1st Qu.:2019
## 3454           SB536Y      Median :2020
## 3455           SB536Y      Mean   :2020
```

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## 3456            SB536Y      3rd Qu.:2020
## 3457            SB536Y      Max.   :2020
## 3458            SB536Y     NA's   :51906
## 3459             SB538      Min.   :0.00
## 3460             SB538      1st Qu.:0.00
## 3461             SB538      Median :0.00
## 3462             SB538      Mean   :0.15
## 3463             SB538      3rd Qu.:0.00
## 3464             SB538      Max.   :1.00
## 3465             SB538     NA's   :55858
## 3466             SB542      Min.   :1.00
## 3467             SB542      1st Qu.:1.00
## 3468             SB542      Median :1.00
## 3469             SB542      Mean   :1.56
## 3470             SB542      3rd Qu.:1.00
## 3471             SB542      Max.   :6.00
## 3472             SB542     NA's   :55911
## 3473             SB543      Min.   :1.00
## 3474             SB543      1st Qu.:1.00
## 3475             SB543      Median :1.00
## 3476             SB543      Mean   :1.56
## 3477             SB543      3rd Qu.:1.00
## 3478             SB543      Max.   :6.00
## 3479             SB543     NA's   :55911
## 3480              MHC0     Min.   : 2.00
## 3481              MHC0     1st Qu.: 4.00
## 3482              MHC0     Median : 5.00
## 3483              MHC0     Mean   : 4.87
## 3484              MHC0     3rd Qu.: 6.00
## 3485              MHC0     Max.   :12.00
## 3486              MHC0     NA's   :53703
## 3487              MHC1     Min.   : 0.00
## 3488              MHC1     1st Qu.:14.00
## 3489              MHC1     Median :30.00
## 3490              MHC1     Mean   :29.58
## 3491              MHC1     3rd Qu.:44.00
## 3492              MHC1     Max.   :59.00
## 3493              MHC1     NA's   :53703
## 3494             MHC1A    Min.   :   2.0
## 3495             MHC1A    1st Qu.: 451.0
## 3496             MHC1A    Median : 934.0
## 3497             MHC1A    Mean   : 915.8
## 3498             MHC1A    3rd Qu.:1352.0
## 3499             MHC1A    Max.   :1826.0
## 3500             MHC1A     NA's   :53703
## 3501              MHC2    Min.   :  18.0
## 3502              MHC2    1st Qu.:  93.0
## 3503              MHC2    Median : 120.0
## 3504              MHC2    Mean   : 131.6
## 3505              MHC2    3rd Qu.: 143.0
## 3506              MHC2    Max.   :9996.0
## 3507              MHC2     NA's   :53706
## 3508              MHC3    Min.   : 454.0
## 3509              MHC3    1st Qu.: 742.0
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## 3510             MHC3    Median : 852.0
## 3511             MHC3    Mean   : 849.2
## 3512             MHC3    3rd Qu.: 942.0
## 3513             MHC3    Max.   :9996.0
## 3514             MHC3     NA's   :53707
## 3515             MHC4    Min.   :   0.0
## 3516             MHC4    1st Qu.: 197.2
## 3517             MHC4    Median : 881.0
## 3518             MHC4    Mean   :1945.0
## 3519             MHC4    3rd Qu.:2758.0
## 3520             MHC4    Max.   :9998.0
## 3521             MHC4     NA's   :53710
## 3522             MHC5   Min.   :-594.00
## 3523             MHC5   1st Qu.:-206.00
## 3524             MHC5   Median :-135.00
## 3525             MHC5   Mean   : -71.83
## 3526             MHC5   3rd Qu.: -59.25
## 3527             MHC5   Max.   :9998.00
## 3528             MHC5     NA's   :53710
## 3529             MHC6     Min.   : 7638
## 3530             MHC6     1st Qu.: 9192
## 3531             MHC6     Median : 9467
## 3532             MHC6     Mean   :10016
## 3533             MHC6     3rd Qu.: 9767
## 3534             MHC6     Max.   :99998
## 3535             MHC6     NA's   :53710
## 3536             MHC7    Min.   :   1.0
## 3537             MHC7    1st Qu.: 640.8
## 3538             MHC7    Median :2120.5
## 3539             MHC7    Mean   :3045.7
## 3540             MHC7    3rd Qu.:4830.2
## 3541             MHC7    Max.   :9998.0
## 3542             MHC7     NA's   :53710
## 3543             MHC8   Min.   :-363.00
## 3544             MHC8   1st Qu.:-152.00
## 3545             MHC8   Median : -80.00
## 3546             MHC8   Mean   : -13.93
## 3547             MHC8   3rd Qu.:  -4.00
## 3548             MHC8   Max.   :9998.00
## 3549             MHC8     NA's   :53710
## 3550             MHC9     Min.   : 6172
## 3551             MHC9     1st Qu.: 8369
## 3552             MHC9     Median : 9132
## 3553             MHC9     Mean   : 9786
## 3554             MHC9     3rd Qu.: 9952
## 3555             MHC9     Max.   :99998
## 3556             MHC9     NA's   :53710
## 3557            MHC10      Min.   :   2
## 3558            MHC10      1st Qu.:3034
## 3559            MHC10      Median :5410
## 3560            MHC10      Mean   :5359
## 3561            MHC10      3rd Qu.:7650
## 3562            MHC10      Max.   :9998
## 3563            MHC10     NA's   :53710
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## 3564            MHC11   Min.   :-352.00
## 3565            MHC11   1st Qu.: -51.00
## 3566            MHC11   Median :  10.00
## 3567            MHC11   Mean   :  71.72
## 3568            MHC11   3rd Qu.:  72.00
## 3569            MHC11   Max.   :9998.00
## 3570            MHC11     NA's   :53710
## 3571            MHC12     Min.   : 7219
## 3572            MHC12     1st Qu.: 9543
## 3573            MHC12     Median :10111
## 3574            MHC12     Mean   :10722
## 3575            MHC12     3rd Qu.:10763
## 3576            MHC12     Max.   :99998
## 3577            MHC12     NA's   :53710
## 3578            MHC13      Min.   :0.00
## 3579            MHC13      1st Qu.:0.00
## 3580            MHC13      Median :0.00
## 3581            MHC13      Mean   :0.01
## 3582            MHC13      3rd Qu.:0.00
## 3583            MHC13      Max.   :6.00
## 3584            MHC13     NA's   :53707
## 3585            MHC15      Min.   :1.00
## 3586            MHC15      1st Qu.:1.00
## 3587            MHC15      Median :2.00
## 3588            MHC15      Mean   :1.61
## 3589            MHC15      3rd Qu.:2.00
## 3590            MHC15      Max.   :2.00
## 3591            MHC15     NA's   :53710
## 3592            MHC16      Min.   : 1.0
## 3593            MHC16      1st Qu.: 8.0
## 3594            MHC16      Median :15.0
## 3595            MHC16      Mean   :15.5
## 3596            MHC16      3rd Qu.:23.0
## 3597            MHC16      Max.   :31.0
## 3598            MHC16     NA's   :53703
## 3599            MHC17     Min.   : 1.00
## 3600            MHC17     1st Qu.: 9.00
## 3601            MHC17     Median :15.00
## 3602            MHC17     Mean   :15.27
## 3603            MHC17     3rd Qu.:22.00
## 3604            MHC17     Max.   :30.00
## 3605            MHC17     NA's   :53703
## 3606            MHC18     Min.   : 1.00
## 3607            MHC18     1st Qu.: 2.00
## 3608            MHC18     Median : 6.00
## 3609            MHC18     Mean   : 5.72
## 3610            MHC18     3rd Qu.:11.00
## 3611            MHC18     Max.   :12.00
## 3612            MHC18     NA's   :53703
## 3613            MHC19      Min.   :2019
## 3614            MHC19      1st Qu.:2019
## 3615            MHC19      Median :2020
## 3616            MHC19      Mean   :2020
## 3617            MHC19      3rd Qu.:2020
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## 3618            MHC19      Max.   :2020
## 3619            MHC19     NA's   :53703
## 3620            MHC20     Min.   :43780
## 3621            MHC20     1st Qu.:43826
## 3622            MHC20     Median :43871
## 3623            MHC20     Mean   :43890
## 3624            MHC20     3rd Qu.:43991
## 3625            MHC20     Max.   :44029
## 3626            MHC20     NA's   :53703
## 3627            MHC21    Min.   : 105.0
## 3628            MHC21    1st Qu.: 505.0
## 3629            MHC21    Median : 906.0
## 3630            MHC21    Mean   : 900.3
## 3631            MHC21    3rd Qu.:1306.0
## 3632            MHC21    Max.   :1707.0
## 3633            MHC21     NA's   :53703
## 3634            MHC27       Min.   :1.0
## 3635            MHC27       1st Qu.:1.0
## 3636            MHC27       Median :1.0
## 3637            MHC27       Mean   :1.5
## 3638            MHC27       3rd Qu.:2.0
## 3639            MHC27       Max.   :2.0
## 3640            MHC27     NA's   :53703
## 3641            MHC30     Min.   : 1.00
## 3642            MHC30     1st Qu.: 3.00
## 3643            MHC30     Median : 6.00
## 3644            MHC30     Mean   : 6.43
## 3645            MHC30     3rd Qu.:10.00
## 3646            MHC30     Max.   :12.00
## 3647            MHC30     NA's   :53703
## 3648            MHC31      Min.   :2014
## 3649            MHC31      1st Qu.:2016
## 3650            MHC31      Median :2017
## 3651            MHC31      Mean   :2017
## 3652            MHC31      3rd Qu.:2018
## 3653            MHC31      Max.   :2020
## 3654            MHC31     NA's   :53703
## 3655            MHC32      Min.   :1379
## 3656            MHC32      1st Qu.:1398
## 3657            MHC32      Median :1412
## 3658            MHC32      Mean   :1412
## 3659            MHC32      3rd Qu.:1427
## 3660            MHC32      Max.   :1446
## 3661            MHC32     NA's   :53703
## 3662           MHC32A     Min.   :41973
## 3663           MHC32A     1st Qu.:42531
## 3664           MHC32A     Median :42958
## 3665           MHC32A     Mean   :42974
## 3666           MHC32A     3rd Qu.:43419
## 3667           MHC32A     Max.   :44004
## 3668           MHC32A     NA's   :53703
## 3669            MHC33         Min.   :0
## 3670            MHC33         1st Qu.:0
## 3671            MHC33         Median :0
```

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## 3672            MHC33         Mean   :0
## 3673            MHC33         3rd Qu.:0
## 3674            MHC33         Max.   :0
## 3675            MHC33     NA's   :53703
## 3676            MHC51     Min.   : 0.00
## 3677            MHC51     1st Qu.: 1.00
## 3678            MHC51     Median : 2.00
## 3679            MHC51     Mean   : 1.84
## 3680            MHC51     3rd Qu.: 2.00
## 3681            MHC51     Max.   :10.00
## 3682            MHC51     NA's   :53912
## 3683            MHC52         Min.   :1
## 3684            MHC52         1st Qu.:1
## 3685            MHC52         Median :1
## 3686            MHC52         Mean   :1
## 3687            MHC52         3rd Qu.:1
## 3688            MHC52         Max.   :1
## 3689            MHC52     NA's   :53935
## 3690            MHC53     Min.   : 65.0
## 3691            MHC53     1st Qu.:116.0
## 3692            MHC53     Median :123.0
## 3693            MHC53     Mean   :125.2
## 3694            MHC53     3rd Qu.:130.0
## 3695            MHC53     Max.   :996.0
## 3696            MHC53     NA's   :53955
## 3697            MHC55      Min.   :0.00
## 3698            MHC55      1st Qu.:0.00
## 3699            MHC55      Median :0.00
## 3700            MHC55      Mean   :0.02
## 3701            MHC55      3rd Qu.:0.00
## 3702            MHC55      Max.   :6.00
## 3703            MHC55     NA's   :53955
## 3704            MHC56       Min.   : 53
## 3705            MHC56       1st Qu.:110
## 3706            MHC56       Median :118
## 3707            MHC56       Mean   :117
## 3708            MHC56       3rd Qu.:125
## 3709            MHC56       Max.   :153
## 3710            MHC56     NA's   :53961
## 3711            MHC57       Min.   :1.0
## 3712            MHC57       1st Qu.:4.0
## 3713            MHC57       Median :4.0
## 3714            MHC57       Mean   :3.7
## 3715            MHC57       3rd Qu.:4.0
## 3716            MHC57       Max.   :4.0
## 3717            MHC57     NA's   :53961
## 3718            MHC58       Min.   : NA
## 3719            MHC58       1st Qu.: NA
## 3720            MHC58       Median : NA
## 3721            MHC58       Mean   :NaN
## 3722            MHC58       3rd Qu.: NA
## 3723            MHC58       Max.   : NA
## 3724            MHC58     NA's   :55920
## 3725            MHC60    Min.   :  1.00
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## 3726            MHC60    1st Qu.:  2.00
## 3727            MHC60    Median :  2.00
## 3728            MHC60    Mean   : 64.68
## 3729            MHC60    3rd Qu.:  2.00
## 3730            MHC60    Max.   :995.00
## 3731            MHC60     NA's   :53703
## 3732            MHC61      Min.   :0.00
## 3733            MHC61      1st Qu.:1.00
## 3734            MHC61      Median :1.00
## 3735            MHC61      Mean   :1.18
## 3736            MHC61      3rd Qu.:1.00
## 3737            MHC61      Max.   :3.00
## 3738            MHC61     NA's   :53823
## 3739            MHC62      Min.   :0.00
## 3740            MHC62      1st Qu.:3.00
## 3741            MHC62      Median :4.00
## 3742            MHC62      Mean   :4.21
## 3743            MHC62      3rd Qu.:6.00
## 3744            MHC62      Max.   :8.00
## 3745            MHC62     NA's   :54057
## 3746            MHC63    Min.   :  9.00
## 3747            MHC63    1st Qu.: 28.00
## 3748            MHC63    Median : 39.00
## 3749            MHC63    Mean   : 46.63
## 3750            MHC63    3rd Qu.: 58.00
## 3751            MHC63    Max.   :183.00
## 3752            MHC63     NA's   :54376
## 3753            MHC64     Min.   : 1.00
## 3754            MHC64     1st Qu.: 1.00
## 3755            MHC64     Median : 3.00
## 3756            MHC64     Mean   : 3.02
## 3757            MHC64     3rd Qu.: 4.00
## 3758            MHC64     Max.   :12.00
## 3759            MHC64     NA's   :53843
## 3760            MHC68      Min.   :0.00
## 3761            MHC68      1st Qu.:1.00
## 3762            MHC68      Median :1.00
## 3763            MHC68      Mean   :1.18
## 3764            MHC68      3rd Qu.:1.00
## 3765            MHC68      Max.   :3.00
## 3766            MHC68     NA's   :53823
## 3767            MHC70    Min.   :-600.0
## 3768            MHC70    1st Qu.:-227.8
## 3769            MHC70    Median :-154.0
## 3770            MHC70    Mean   :-140.4
## 3771            MHC70    3rd Qu.: -77.0
## 3772            MHC70    Max.   :9998.0
## 3773            MHC70     NA's   :53710
## 3774            MHC71   Min.   :-464.00
## 3775            MHC71   1st Qu.:-126.00
## 3776            MHC71   Median : -59.00
## 3777            MHC71   Mean   : -53.53
## 3778            MHC71   3rd Qu.:   6.00
## 3779            MHC71   Max.   :9998.00
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## 3780            MHC71     NA's   :53709
## 3781            MHC72   Min.   :-469.00
## 3782            MHC72   1st Qu.: -25.00
## 3783            MHC72   Median :  40.00
## 3784            MHC72   Mean   :  43.05
## 3785            MHC72   3rd Qu.: 102.00
## 3786            MHC72   Max.   :9998.00
## 3787            MHC72     NA's   :53710
## 3788            MHC73   Min.   :-470.00
## 3789            MHC73   1st Qu.: -10.00
## 3790            MHC73   Median :  56.00
## 3791            MHC73   Mean   :  57.27
## 3792            MHC73   3rd Qu.: 116.00
## 3793            MHC73   Max.   :9998.00
## 3794            MHC73     NA's   :53710
## 3795            MHC2A    Min.   :  18.0
## 3796            MHC2A    1st Qu.:  93.0
## 3797            MHC2A    Median : 120.0
## 3798            MHC2A    Mean   : 131.6
## 3799            MHC2A    3rd Qu.: 143.0
## 3800            MHC2A    Max.   :9996.0
## 3801            MHC2A     NA's   :53706
## 3802            MHC3A    Min.   : 454.0
## 3803            MHC3A    1st Qu.: 742.0
## 3804            MHC3A    Median : 852.0
## 3805            MHC3A    Mean   : 848.8
## 3806            MHC3A    3rd Qu.: 942.0
## 3807            MHC3A    Max.   :9996.0
## 3808            MHC3A     NA's   :53707
## 3809           MHC15A      Min.   :1.00
## 3810           MHC15A      1st Qu.:1.00
## 3811           MHC15A      Median :2.00
## 3812           MHC15A      Mean   :1.61
## 3813           MHC15A      3rd Qu.:2.00
## 3814           MHC15A      Max.   :2.00
## 3815           MHC15A     NA's   :53710
## 3816            MHC2B     Min.   : 20.0
## 3817            MHC2B     1st Qu.: 92.0
## 3818            MHC2B     Median :115.0
## 3819            MHC2B     Mean   :115.2
## 3820            MHC2B     3rd Qu.:134.0
## 3821            MHC2B     Max.   :295.0
## 3822            MHC2B     NA's   :55519
## 3823            MHC3B    Min.   : 468.0
## 3824            MHC3B    1st Qu.: 742.0
## 3825            MHC3B    Median : 834.0
## 3826            MHC3B    Mean   : 824.5
## 3827            MHC3B    3rd Qu.: 912.0
## 3828            MHC3B    Max.   :1163.0
## 3829            MHC3B     NA's   :55519
## 3830           MHC15B      Min.   :0.00
## 3831           MHC15B      1st Qu.:0.00
## 3832           MHC15B      Median :0.00
## 3833           MHC15B      Mean   :0.29
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## 3834           MHC15B      3rd Qu.:0.00
## 3835           MHC15B      Max.   :2.00
## 3836           MHC15B     NA's   :53703
## 3837            MHC35      Min.   :0.00
## 3838            MHC35      1st Qu.:0.00
## 3839            MHC35      Median :0.00
## 3840            MHC35      Mean   :0.28
## 3841            MHC35      3rd Qu.:0.00
## 3842            MHC35      Max.   :3.00
## 3843            MHC35     NA's   :53703
## 3844           SB404A      Min.   :0.00
## 3845           SB404A      1st Qu.:0.00
## 3846           SB404A      Median :0.00
## 3847           SB404A      Mean   :0.15
## 3848           SB404A      3rd Qu.:0.00
## 3849           SB404A      Max.   :1.00
## 3850           SB404A     NA's   :53705
## 3851          SB404BH     Min.   : 0.00
## 3852          SB404BH     1st Qu.: 9.00
## 3853          SB404BH     Median :12.00
## 3854          SB404BH     Mean   :14.81
## 3855          SB404BH     3rd Qu.:13.00
## 3856          SB404BH     Max.   :94.00
## 3857          SB404BH     NA's   :53753
## 3858          SB404BM     Min.   : 0.00
## 3859          SB404BM     1st Qu.: 0.00
## 3860          SB404BM     Median : 5.00
## 3861          SB404BM     Mean   :14.58
## 3862          SB404BM     3rd Qu.:30.00
## 3863          SB404BM     Max.   :59.00
## 3864          SB404BM     NA's   :53846
## 3865            SB412      Min.   :1.00
## 3866            SB412      1st Qu.:1.00
## 3867            SB412      Median :1.00
## 3868            SB412      Mean   :1.01
## 3869            SB412      3rd Qu.:1.00
## 3870            SB412      Max.   :3.00
## 3871            SB412     NA's   :53913
## 3872           SB412F    Min.   : 105.0
## 3873           SB412F    1st Qu.: 505.0
## 3874           SB412F    Median : 906.0
## 3875           SB412F    Mean   : 904.5
## 3876           SB412F    3rd Qu.:1306.0
## 3877           SB412F    Max.   :1707.0
## 3878           SB412F     NA's   :53921
## 3879           SB413A         Min.   :1
## 3880           SB413A         1st Qu.:1
## 3881           SB413A         Median :1
## 3882           SB413A         Mean   :1
## 3883           SB413A         3rd Qu.:1
## 3884           SB413A         Max.   :1
## 3885           SB413A     NA's   :53934
## 3886           SB413C         Min.   :1
## 3887           SB413C         1st Qu.:1
```

```
## 3888           SB413C         Median :1
## 3889           SB413C         Mean   :1
## 3890           SB413C         3rd Qu.:1
## 3891           SB413C         Max.   :1
## 3892           SB413C     NA's   :53934
## 3893           SB413F    Min.   : 105.0
## 3894           SB413F    1st Qu.: 505.0
## 3895           SB413F    Median : 906.0
## 3896           SB413F    Mean   : 902.4
## 3897           SB413F    3rd Qu.:1306.0
## 3898           SB413F    Max.   :1707.0
## 3899           SB413F     NA's   :53934
## 3900            SB414      Min.   :1.00
## 3901            SB414      1st Qu.:1.00
## 3902            SB414      Median :1.00
## 3903            SB414      Mean   :1.06
## 3904            SB414      3rd Qu.:1.00
## 3905            SB414      Max.   :6.00
## 3906            SB414     NA's   :53936
## 3907            SB415      Min.   :1.00
## 3908            SB415      1st Qu.:1.00
## 3909            SB415      Median :1.00
## 3910            SB415      Mean   :1.05
## 3911            SB415      3rd Qu.:1.00
## 3912            SB415      Max.   :6.00
## 3913            SB415     NA's   :53936
## 3914           SB415A         Min.   :1
## 3915           SB415A         1st Qu.:2
## 3916           SB415A         Median :2
## 3917           SB415A         Mean   :2
## 3918           SB415A         3rd Qu.:2
## 3919           SB415A         Max.   :9
## 3920           SB415A     NA's   :53934
## 3921           SB416A      Min.   :0.00
## 3922           SB416A      1st Qu.:1.00
## 3923           SB416A      Median :1.00
## 3924           SB416A      Mean   :0.88
## 3925           SB416A      3rd Qu.:1.00
## 3926           SB416A      Max.   :1.00
## 3927           SB416A     NA's   :53703
## 3928           SB416B      Min.   :0.00
## 3929           SB416B      1st Qu.:1.00
## 3930           SB416B      Median :1.00
## 3931           SB416B      Mean   :0.88
## 3932           SB416B      3rd Qu.:1.00
## 3933           SB416B      Max.   :1.00
## 3934           SB416B     NA's   :53703
## 3935           SB416C      Min.   :0.00
## 3936           SB416C      1st Qu.:1.00
## 3937           SB416C      Median :1.00
## 3938           SB416C      Mean   :0.88
## 3939           SB416C      3rd Qu.:1.00
## 3940           SB416C      Max.   :1.00
## 3941           SB416C     NA's   :53703
```

```
## 3942           SB417D     Min.   : 1.00
## 3943           SB417D     1st Qu.: 9.00
## 3944           SB417D     Median :15.00
## 3945           SB417D     Mean   :15.25
## 3946           SB417D     3rd Qu.:22.00
## 3947           SB417D     Max.   :30.00
## 3948           SB417D     NA's   :53954
## 3949           SB417M      Min.   : 1.0
## 3950           SB417M      1st Qu.: 2.0
## 3951           SB417M      Median : 6.0
## 3952           SB417M      Mean   : 5.7
## 3953           SB417M      3rd Qu.:11.0
## 3954           SB417M      Max.   :12.0
## 3955           SB417M     NA's   :53954
## 3956           SB417Y      Min.   :2019
## 3957           SB417Y      1st Qu.:2019
## 3958           SB417Y      Median :2020
## 3959           SB417Y      Mean   :2020
## 3960           SB417Y      3rd Qu.:2020
## 3961           SB417Y      Max.   :2020
## 3962           SB417Y     NA's   :53954
## 3963           SB418H     Min.   : 1.00
## 3964           SB418H     1st Qu.:12.00
## 3965           SB418H     Median :13.00
## 3966           SB418H     Mean   :13.43
## 3967           SB418H     3rd Qu.:15.00
## 3968           SB418H     Max.   :21.00
## 3969           SB418H     NA's   :53954
## 3970           SB418M     Min.   : 0.00
## 3971           SB418M     1st Qu.:10.00
## 3972           SB418M     Median :27.00
## 3973           SB418M     Mean   :25.06
## 3974           SB418M     3rd Qu.:40.00
## 3975           SB418M     Max.   :59.00
## 3976           SB418M     NA's   :53955
## 3977            SB420      Min.   :1.00
## 3978            SB420      1st Qu.:1.00
## 3979            SB420      Median :1.00
## 3980            SB420      Mean   :1.02
## 3981            SB420      3rd Qu.:1.00
## 3982            SB420      Max.   :6.00
## 3983            SB420     NA's   :53954
## 3984            SB421      Min.   :1.00
## 3985            SB421      1st Qu.:2.00
## 3986            SB421      Median :2.00
## 3987            SB421      Mean   :1.98
## 3988            SB421      3rd Qu.:2.00
## 3989            SB421      Max.   :2.00
## 3990            SB421     NA's   :53962
## 3991           SB422A      Min.   :0.00
## 3992           SB422A      1st Qu.:0.00
## 3993           SB422A      Median :0.00
## 3994           SB422A      Mean   :0.06
## 3995           SB422A      3rd Qu.:0.00
```

```
## 3996           SB422A      Max.   :1.00
## 3997           SB422A     NA's   :55886
## 3998           SB422B         Min.   :0
## 3999           SB422B         1st Qu.:0
## 4000           SB422B         Median :0
## 4001           SB422B         Mean   :0
## 4002           SB422B         3rd Qu.:0
## 4003           SB422B         Max.   :0
## 4004           SB422B     NA's   :55886
## 4005           SB422C      Min.   :0.00
## 4006           SB422C      1st Qu.:0.00
## 4007           SB422C      Median :0.00
## 4008           SB422C      Mean   :0.03
## 4009           SB422C      3rd Qu.:0.00
## 4010           SB422C      Max.   :1.00
## 4011           SB422C     NA's   :55886
## 4012           SB422D         Min.   :0
## 4013           SB422D         1st Qu.:0
## 4014           SB422D         Median :0
## 4015           SB422D         Mean   :0
## 4016           SB422D         3rd Qu.:0
## 4017           SB422D         Max.   :0
## 4018           SB422D     NA's   :55886
## 4019           SB422E         Min.   :0
## 4020           SB422E         1st Qu.:0
## 4021           SB422E         Median :0
## 4022           SB422E         Mean   :0
## 4023           SB422E         3rd Qu.:0
## 4024           SB422E         Max.   :0
## 4025           SB422E     NA's   :55886
## 4026           SB422F         Min.   :0
## 4027           SB422F         1st Qu.:0
## 4028           SB422F         Median :0
## 4029           SB422F         Mean   :0
## 4030           SB422F         3rd Qu.:0
## 4031           SB422F         Max.   :0
## 4032           SB422F     NA's   :55886
## 4033           SB422G      Min.   :0.00
## 4034           SB422G      1st Qu.:0.00
## 4035           SB422G      Median :0.00
## 4036           SB422G      Mean   :0.03
## 4037           SB422G      3rd Qu.:0.00
## 4038           SB422G      Max.   :1.00
## 4039           SB422G     NA's   :55886
## 4040           SB422H         Min.   :0
## 4041           SB422H         1st Qu.:0
## 4042           SB422H         Median :0
## 4043           SB422H         Mean   :0
## 4044           SB422H         3rd Qu.:0
## 4045           SB422H         Max.   :0
## 4046           SB422H     NA's   :55886
## 4047            SB425      Min.   :0.00
## 4048            SB425      1st Qu.:0.00
## 4049            SB425      Median :0.00
```

```
## 4050             SB425      Mean   :0.32
## 4051             SB425      3rd Qu.:1.00
## 4052             SB425      Max.   :1.00
## 4053             SB425     NA's   :55889
## 4054             SB429      Min.   :1.00
## 4055             SB429      1st Qu.:1.00
## 4056             SB429      Median :1.00
## 4057             SB429      Mean   :1.05
## 4058             SB429      3rd Qu.:1.00
## 4059             SB429      Max.   :2.00
## 4060             SB429     NA's   :55899
## 4061             SB430      Min.   :1.00
## 4062             SB430      1st Qu.:1.00
## 4063             SB430      Median :1.00
## 4064             SB430      Mean   :1.05
## 4065             SB430      3rd Qu.:1.00
## 4066             SB430      Max.   :2.00
## 4067             SB430     NA's   :55899
```

```
# top 6 rows
head(houseH)
```

```
## # A tibble: 6 x 581
##   HHID       HVIDX HV000 HV001 HV002 HV003 HV004  HV005 HV006 HV007 HV008 HV008A
##   <chr>      <dbl> <chr> <dbl> <dbl> <dbl> <dbl>  <dbl> <dbl> <dbl> <dbl>  <dbl>
## 1 "       1~     1 RW7       1     1 1         1 1.45e6     6  2020  1446  43994
## 2 "       1~     1 RW7       1     3 1         1 1.45e6     6  2020  1446  43993
## 3 "       1~     2 RW7       1     3 1         1 1.45e6     6  2020  1446  43993
## 4 "       1~     3 RW7       1     3 1         1 1.45e6     6  2020  1446  43993
## 5 "       1~     4 RW7       1     3 1         1 1.45e6     6  2020  1446  43993
## 6 "       1~     5 RW7       1     3 1         1 1.45e6     6  2020  1446  43993
## # i 569 more variables: HV009 <dbl>, HV010 <dbl>, HV011 <dbl>, HV012 <dbl>,
## #   HV013 <dbl>, HV014 <dbl>, HV015 <dbl+lbl>, HV016 <dbl>, HV017 <dbl>,
## #   HV018 <dbl>, HV019 <dbl>, HV020 <dbl+lbl>, HV021 <dbl>, HV022 <dbl+lbl>,
## #   HV023 <dbl+lbl>, HV024 <dbl+lbl>, HV025 <dbl+lbl>, HV026 <dbl+lbl>,
## #   HV027 <dbl+lbl>, HV028 <dbl>, HV030 <dbl>, HV031 <dbl>, HV032 <dbl>,
## #   HV035 <dbl>, HV040 <dbl>, HV041 <dbl>, HV042 <dbl+lbl>, HV044 <dbl+lbl>,
## #   HV045A <dbl+lbl>, HV045B <dbl+lbl>, HV045C <dbl+lbl>, HV046 <dbl+lbl>, ...
```

```
# last 6 rows
tail(houseH)
```

```
## # A tibble: 6 x 581
##   HHID       HVIDX HV000 HV001 HV002 HV003 HV004  HV005 HV006 HV007 HV008 HV008A
##   <chr>      <dbl> <chr> <dbl> <dbl> <dbl> <dbl>  <dbl> <dbl> <dbl> <dbl>  <dbl>
## 1 "     500~     2 RW7     500    26 1       500 1.02e6     3  2020  1443  43902
## 2 "     500~     3 RW7     500    26 1       500 1.02e6     3  2020  1443  43902
## 3 "     500~     1 RW7     500    27 2       500 1.02e6     3  2020  1443  43902
## 4 "     500~     2 RW7     500    27 2       500 1.02e6     3  2020  1443  43902
## 5 "     500~     3 RW7     500    27 2       500 1.02e6     3  2020  1443  43902
## 6 "     500~     4 RW7     500    27 2       500 1.02e6     3  2020  1443  43902
## # i 569 more variables: HV009 <dbl>, HV010 <dbl>, HV011 <dbl>, HV012 <dbl>,
## #   HV013 <dbl>, HV014 <dbl>, HV015 <dbl+lbl>, HV016 <dbl>, HV017 <dbl>,
```

```
## #   HV018 <dbl>, HV019 <dbl>, HV020 <dbl+lbl>, HV021 <dbl>, HV022 <dbl+lbl>,
## #   HV023 <dbl+lbl>, HV024 <dbl+lbl>, HV025 <dbl+lbl>, HV026 <dbl+lbl>,
## #   HV027 <dbl+lbl>, HV028 <dbl>, HV030 <dbl>, HV031 <dbl>, HV032 <dbl>,
## #   HV035 <dbl>, HV040 <dbl>, HV041 <dbl>, HV042 <dbl+lbl>, HV044 <dbl+lbl>,
## #   HV045A <dbl+lbl>, HV045B <dbl+lbl>, HV045C <dbl+lbl>, HV046 <dbl+lbl>, ...
```

```
# column names
names(houseH)
```

```
##   [1] "HHID"       "HVIDX"      "HV000"      "HV001"      "HV002"
##   [6] "HV003"      "HV004"      "HV005"      "HV006"      "HV007"
##  [11] "HV008"      "HV008A"     "HV009"      "HV010"      "HV011"
##  [16] "HV012"      "HV013"      "HV014"      "HV015"      "HV016"
##  [21] "HV017"      "HV018"      "HV019"      "HV020"      "HV021"
##  [26] "HV022"      "HV023"      "HV024"      "HV025"      "HV026"
##  [31] "HV027"      "HV028"      "HV030"      "HV031"      "HV032"
##  [36] "HV035"      "HV040"      "HV041"      "HV042"      "HV044"
##  [41] "HV045A"     "HV045B"     "HV045C"     "HV046"      "HV801"
##  [46] "HV802"      "HV803"      "HV804"      "HV807D"     "HV807M"
##  [51] "HV807Y"     "HV807C"     "HV807A"     "HV201"      "HV202"
##  [56] "HV201A"     "HV204"      "HV205"      "HV206"      "HV207"
##  [61] "HV208"      "HV209"      "HV210"      "HV211"      "HV212"
##  [66] "HV213"      "HV214"      "HV215"      "HV216"      "HV217"
##  [71] "HV218"      "HV219"      "HV220"      "HV221"      "HV225"
##  [76] "HV226"      "HV227"      "HV228"      "HV230A"     "HV230B"
##  [81] "HV232"      "HV232B"     "HV232C"     "HV232D"     "HV232E"
##  [86] "HV232Y"     "HV234"      "HV234A"     "HV235"      "HV236"
##  [91] "HV237"      "HV237A"     "HV237B"     "HV237C"     "HV237D"
##  [96] "HV237E"     "HV237F"     "HV237G"     "HV237H"     "HV237I"
## [101] "HV237J"     "HV237K"     "HV237X"     "HV237Z"     "HV238"
## [106] "HV238A"     "HV239"      "HV240"      "HV241"      "HV242"
## [111] "HV243A"     "HV243B"     "HV243C"     "HV243D"     "HV243E"
## [116] "HV244"      "HV245"      "HV246"      "HV246A"     "HV246B"
## [121] "HV246C"     "HV246D"     "HV246E"     "HV246F"     "HV246G"
## [126] "HV246H"     "HV246I"     "HV246J"     "HV246K"     "HV247"
## [131] "HV252"      "HV253"      "HV253A"     "HV253B"     "HV253C"
## [136] "HV253D"     "HV253E"     "HV253F"     "HV253G"     "HV253H"
## [141] "HV253X"     "HV253Z"     "HV270"      "HV271"      "HV270A"
## [146] "HV271A"     "HML1"       "HML1A"      "HML2"       "CHL0"
## [151] "SHDISTRICT" "SHELIGMB"   "SH104A"     "SH108A"     "SH108B"
## [156] "SH108C"     "SH112AA"    "SH112AB"    "SH112AC"    "SH112AY"
## [161] "SH121G"     "SH121H"     "SH121I"     "SH121J"     "SH121K"
## [166] "SH121L"     "SH121M"     "SH121N"     "SH121O"     "SH121P"
## [171] "SH121Q"     "SH121R"     "SH122H"     "SH122I"     "SH124B"
## [176] "SH144A"     "SH145A"     "HV101"      "HV102"      "HV103"
## [181] "HV104"      "HV105"      "HV106"      "HV107"      "HV108"
## [186] "HV109"      "HV110"      "HV111"      "HV112"      "HV113"
## [191] "HV114"      "HV115"      "HV116"      "HV117"      "HV118"
## [196] "HV120"      "HV121"      "HV122"      "HV123"      "HV124"
## [201] "HV125"      "HV126"      "HV127"      "HV128"      "HV129"
## [206] "HV140"      "IDXH4"      "SH08"       "SH16"       "SH17A"
## [211] "SH17B"      "SH18"       "SH19A"      "SH19B"      "SH21"
## [216] "SH22"       "SH23"       "SB315"      "SB315F"     "SB332"
## [221] "SB333"      "SB337"      "SB338"      "SB339"      "HA0"
```

```
## [226] "HA1"       "HA2"       "HA3"       "HA4"       "HA5"
## [231] "HA6"       "HA11"      "HA12"      "HA12A"     "HA12B"
## [236] "HA13"      "HA21"      "HA32"      "HA33"      "HA35"
## [241] "HA40"      "HA41"      "HA50"      "HA51"      "HA52"
## [246] "HA53"      "HA54"      "HA55"      "HA56"      "HA57"
## [251] "HA58"      "HA60"      "HA61"      "HA62"      "HA63"
## [256] "HA64"      "HA65"      "HA66"      "HA67"      "HA68"
## [261] "HA69"      "HA70"      "HC0"       "HC1"       "HC1A"
## [266] "HC2"       "HC3"       "HC4"       "HC5"       "HC6"
## [271] "HC7"       "HC8"       "HC9"       "HC10"      "HC11"
## [276] "HC12"      "HC13"      "HC15"      "HC16"      "HC17"
## [281] "HC18"      "HC19"      "HC20"      "HC21"      "HC27"
## [286] "HC30"      "HC31"      "HC32"      "HC32A"     "HC33"
## [291] "HC51"      "HC52"      "HC53"      "HC55"      "HC56"
## [296] "HC57"      "HC58"      "HC60"      "HC61"      "HC62"
## [301] "HC63"      "HC64"      "HC68"      "HC70"      "HC71"
## [306] "HC72"      "HC73"      "HC2A"      "HC3A"      "HC15A"
## [311] "HC2B"      "HC3B"      "HC15B"     "HC35"      "HB0"
## [316] "HB1"       "HB2"       "HB3"       "HB4"       "HB5"
## [321] "HB6"       "HB11"      "HB12"      "HB12A"     "HB12B"
## [326] "HB13"      "HB21"      "HB32"      "HB33"      "HB35"
## [331] "HB40"      "HB41"      "HB50"      "HB51"      "HB52"
## [336] "HB53"      "HB55"      "HB56"      "HB57"      "HB58"
## [341] "HB60"      "HB61"      "HB62"      "HB63"      "HB64"
## [346] "HB65"      "HB66"      "HB67"      "HB68"      "HB69"
## [351] "HB70"      "HMLIDX"    "HML3"      "HML4"      "HML5"
## [356] "HML6"      "HML7"      "HML8"      "HML9"      "HML10"
## [361] "HML11"     "HML21"     "HMLA"      "HMLB"      "HMLC"
## [366] "HMLD"      "HMLE"      "HML22"     "HML23"     "SH135A"
## [371] "SH135B"    "SH137AA"   "HMHIDX"    "HML12"     "HML13"
## [376] "HML14"     "HML15"     "HML16"     "HML16A"    "HML17"
## [381] "HML18"     "HML19"     "HML20"     "HML30"     "HML31"
## [386] "HML32"     "HML32A"    "HML32B"    "HML32C"    "HML32D"
## [391] "HML32E"    "HML32F"    "HML32G"    "HML33"     "HML34"
## [396] "HML35"     "HML36"     "SBSEL"     "SB211F"    "SB217"
## [401] "SB239"     "SB240"     "SB241"     "SB245"     "SB246"
## [406] "SB247"     "SB249"     "SB253"     "SB254"     "SB117"
## [411] "SB121A"    "SB121B"    "SB121C"    "SB121D"    "SB121E"
## [416] "SB121F"    "SB121G"    "SB121H"    "SB124"     "SB128"
## [421] "SB129"     "IDXDIS"    "HDIS1"     "HDIS2"     "HDIS3"
## [426] "HDIS4"     "HDIS5"     "HDIS6"     "HDIS7"     "HDIS8"
## [431] "HDIS9"     "MHA0"      "MHA1"      "MHA2"      "MHA3"
## [436] "MHA4"      "MHA5"      "MHA6"      "MHA11"     "MHA12"
## [441] "MHA12A"    "MHA12B"    "MHA13"     "MHA21"     "MHA32"
## [446] "MHA33"     "MHA35"     "MHA40"     "MHA41"     "MHA50"
## [451] "MHA51"     "MHA52"     "MHA53"     "MHA54"     "MHA55"
## [456] "MHA56"     "MHA57"     "MHA58"     "MHA60"     "MHA61"
## [461] "MHA62"     "MHA63"     "MHA64"     "MHA65"     "MHA66"
## [466] "MHA67"     "MHA68"     "MHA69"     "MHA70"     "SB505A"
## [471] "SB505B"    "SB505CH"   "SB505CM"   "SB513A"    "SB513C"
## [476] "SB515"     "SB515F"    "SB527"     "SB528"     "SB529A"
## [481] "SB529B"    "SB529C"    "SB529D"    "SB530D"    "SB530M"
## [486] "SB530Y"    "SB531H"    "SB531M"    "SB533"     "SB534"
## [491] "SB535"     "SB536D"    "SB536M"    "SB536Y"    "SB538"
```

```
## [496] "SB542"      "SB543"      "MHC0"       "MHC1"       "MHC1A"
## [501] "MHC2"       "MHC3"       "MHC4"       "MHC5"       "MHC6"
## [506] "MHC7"       "MHC8"       "MHC9"       "MHC10"      "MHC11"
## [511] "MHC12"      "MHC13"      "MHC15"      "MHC16"      "MHC17"
## [516] "MHC18"      "MHC19"      "MHC20"      "MHC21"      "MHC27"
## [521] "MHC30"      "MHC31"      "MHC32"      "MHC32A"     "MHC33"
## [526] "MHC51"      "MHC52"      "MHC53"      "MHC55"      "MHC56"
## [531] "MHC57"      "MHC58"      "MHC60"      "MHC61"      "MHC62"
## [536] "MHC63"      "MHC64"      "MHC68"      "MHC70"      "MHC71"
## [541] "MHC72"      "MHC73"      "MHC2A"      "MHC3A"      "MHC15A"
## [546] "MHC2B"      "MHC3B"      "MHC15B"     "MHC35"      "SB404A"
## [551] "SB404BH"    "SB404BM"    "SB412"      "SB412F"     "SB413A"
## [556] "SB413C"     "SB413F"     "SB414"      "SB415"      "SB415A"
## [561] "SB416A"     "SB416B"     "SB416C"     "SB417D"     "SB417M"
## [566] "SB417Y"     "SB418H"     "SB418M"     "SB420"      "SB421"
## [571] "SB422A"     "SB422B"     "SB422C"     "SB422D"     "SB422E"
## [576] "SB422F"     "SB422G"     "SB422H"     "SB425"      "SB429"
## [581] "SB430"
```

```
# counting missing values for columns
data.frame("Sum of Missing values by colmuns" = colSums(is.na(houseH)))
```

```
##            Sum.of.Missing.values.by.colmuns
## HHID                                       0
## HVIDX                                      0
## HV000                                      0
## HV001                                      0
## HV002                                      0
## HV003                                      0
## HV004                                      0
## HV005                                      0
## HV006                                      0
## HV007                                      0
## HV008                                      0
## HV008A                                     0
## HV009                                      0
## HV010                                      0
## HV011                                      0
## HV012                                      0
## HV013                                      0
## HV014                                      0
## HV015                                      0
## HV016                                      0
## HV017                                      0
## HV018                                      0
## HV019                                  55920
## HV020                                      0
## HV021                                      0
## HV022                                      0
## HV023                                      0
## HV024                                      0
## HV025                                      0
## HV026                                  55920
## HV027                                      0
```

```
## HV028                                0
## HV030                                0
## HV031                            55920
## HV032                            55920
## HV035                                0
## HV040                                0
## HV041                                0
## HV042                                0
## HV044                                0
## HV045A                               0
## HV045B                               0
## HV045C                               0
## HV046                                0
## HV801                                0
## HV802                                0
## HV803                                0
## HV804                            14696
## HV807D                           14696
## HV807M                           14696
## HV807Y                           14696
## HV807C                           14696
## HV807A                           14696
## HV201                                0
## HV202                            54619
## HV201A                           55920
## HV204                                0
## HV205                                0
## HV206                                0
## HV207                                0
## HV208                                0
## HV209                                0
## HV210                                0
## HV211                                0
## HV212                                0
## HV213                                0
## HV214                                0
## HV215                                0
## HV216                                0
## HV217                                0
## HV218                                0
## HV219                                0
## HV220                                0
## HV221                                0
## HV225                             1465
## HV226                                0
## HV227                                0
## HV228                            23924
## HV230A                               0
## HV230B                            9227
## HV232                             9227
## HV232B                            9227
## HV232C                           55920
## HV232D                           55920
## HV232E                           55920
```

```
## HV232Y                  9227
## HV234                  55920
## HV234A                 55920
## HV235                   9543
## HV236                  55920
## HV237                      0
## HV237A                     0
## HV237B                     0
## HV237C                     0
## HV237D                     0
## HV237E                     0
## HV237F                     0
## HV237G                     0
## HV237H                 55920
## HV237I                 55920
## HV237J                 55920
## HV237K                 55920
## HV237X                     0
## HV237Z                     0
## HV238                  47901
## HV238A                  1465
## HV239                  55920
## HV240                  55920
## HV241                     51
## HV242                  44280
## HV243A                     0
## HV243B                     0
## HV243C                     0
## HV243D                     0
## HV243E                     0
## HV244                      0
## HV245                  20337
## HV246                      0
## HV246A                     0
## HV246B                     0
## HV246C                     0
## HV246D                     0
## HV246E                     0
## HV246F                     0
## HV246G                     0
## HV246H                     0
## HV246I                     0
## HV246J                 55920
## HV246K                 55920
## HV247                      0
## HV252                      0
## HV253                  55920
## HV253A                 55920
## HV253B                 55920
## HV253C                 55920
## HV253D                 55920
## HV253E                 55920
## HV253F                 55920
## HV253G                 55920
```

```
## HV253H                    55920
## HV253X                    55920
## HV253Z                    55920
## HV270                         0
## HV271                         0
## HV270A                        0
## HV271A                        0
## HML1                          0
## HML1A                         0
## HML2                          0
## CHL0                      55920
## SHDISTRICT                    0
## SHELIGMB                      0
## SH104A                    10075
## SH108A                    35301
## SH108B                    36260
## SH108C                    36260
## SH112AA                       0
## SH112AB                       0
## SH112AC                       0
## SH112AY                       0
## SH121G                        0
## SH121H                        0
## SH121I                        0
## SH121J                        0
## SH121K                        0
## SH121L                        0
## SH121M                        0
## SH121N                        0
## SH121O                        0
## SH121P                        0
## SH121Q                        0
## SH121R                        0
## SH122H                        0
## SH122I                        0
## SH124B                    40051
## SH144A                        0
## SH145A                    40955
## HV101                         0
## HV102                         0
## HV103                         0
## HV104                         0
## HV105                         0
## HV106                         0
## HV107                     15512
## HV108                         0
## HV109                         0
## HV110                     55920
## HV111                     28842
## HV112                     28842
## HV113                     28842
## HV114                     28842
## HV115                     22897
## HV116                     22897
```

```
## HV117                                0
## HV118                                0
## HV120                                0
## HV121                                0
## HV122                                0
## HV123                            39492
## HV124                                0
## HV125                            55920
## HV126                            55920
## HV127                            55920
## HV128                            55920
## HV129                            55920
## HV140                            47851
## IDXH4                                0
## SH08                             22897
## SH16                              4807
## SH17A                            12962
## SH17B                            12983
## SH18                             30697
## SH19A                            37444
## SH19B                            37444
## SH21                                 0
## SH22                             10135
## SH23                             11168
## SB315                            49295
## SB315F                           49315
## SB332                            49295
## SB333                            55801
## SB337                            49299
## SB338                            55916
## SB339                            55916
## HA0                              48531
## HA1                              48531
## HA2                              48540
## HA3                              48539
## HA4                              48567
## HA5                              48567
## HA6                              48567
## HA11                             48567
## HA12                             48567
## HA12A                            48567
## HA12B                            48567
## HA13                             48540
## HA21                             48531
## HA32                             48531
## HA33                             48531
## HA35                             48549
## HA40                             48567
## HA41                             48567
## HA50                             48531
## HA51                             54825
## HA52                             48535
## HA53                             48538
## HA54                             48531
```

```
## HA55                                48538
## HA56                                48567
## HA57                                48567
## HA58                                55920
## HA60                                54818
## HA61                                48535
## HA62                                    0
## HA63                                48539
## HA64                                55920
## HA65                                48531
## HA66                                48531
## HA67                                49241
## HA68                                48531
## HA69                                55920
## HA70                                48546
## HC0                                 51833
## HC1                                 51833
## HC1A                                51833
## HC2                                 51833
## HC3                                 51833
## HC4                                 51842
## HC5                                 51842
## HC6                                 51842
## HC7                                 51842
## HC8                                 51842
## HC9                                 51842
## HC10                                51841
## HC11                                51841
## HC12                                51841
## HC13                                51833
## HC15                                51842
## HC16                                51833
## HC17                                51833
## HC18                                51833
## HC19                                51833
## HC20                                51833
## HC21                                51833
## HC27                                51833
## HC30                                51833
## HC31                                51833
## HC32                                51833
## HC32A                               51833
## HC33                                51833
## HC51                                52212
## HC52                                52212
## HC53                                52212
## HC55                                52212
## HC56                                52221
## HC57                                52221
## HC58                                55920
## HC60                                51833
## HC61                                52073
## HC62                                52528
## HC63                                53029
```

```
## HC64                                52099
## HC68                                52073
## HC70                                51842
## HC71                                51841
## HC72                                51841
## HC73                                51842
## HC2A                                51833
## HC3A                                51833
## HC15A                               51842
## HC2B                                55009
## HC3B                                55009
## HC15B                               51833
## HC35                                51833
## HB0                                 49290
## HB1                                 49290
## HB2                                 55920
## HB3                                 55920
## HB4                                 55920
## HB5                                 55920
## HB6                                 55920
## HB11                                55920
## HB12                                55920
## HB12A                               55920
## HB12B                               55920
## HB13                                55920
## HB21                                55920
## HB32                                49290
## HB33                                49290
## HB35                                49321
## HB40                                55920
## HB41                                55920
## HB50                                49293
## HB51                                54891
## HB52                                55920
## HB53                                55920
## HB55                                55920
## HB56                                55920
## HB57                                55920
## HB58                                55920
## HB60                                54891
## HB61                                49294
## HB62                                    0
## HB63                                49295
## HB64                                55920
## HB65                                49290
## HB66                                49290
## HB67                                49884
## HB68                                49290
## HB69                                55920
## HB70                                49315
## HMLIDX                              29215
## HML3                                29215
## HML4                                29215
## HML5                                55920
```

```
## HML6                                55920
## HML7                                29215
## HML8                                55920
## HML9                                55920
## HML10                               29215
## HML11                               29215
## HML21                               29215
## HMLA                                29215
## HMLB                                33196
## HMLC                                44356
## HMLD                                53805
## HMLE                                55920
## HML22                               29215
## HML23                               53860
## SH135A                              29215
## SH135B                              29215
## SH137AA                             55920
## HMHIDX                                  0
## HML12                                   0
## HML13                                   0
## HML14                               55825
## HML15                               55918
## HML16                                   0
## HML16A                              52212
## HML17                                   0
## HML18                               41171
## HML19                                   0
## HML20                                   0
## HML30                               52212
## HML31                               44827
## HML32                               44869
## HML32A                              55850
## HML32B                              55850
## HML32C                              55850
## HML32D                              55920
## HML32E                              55920
## HML32F                              55920
## HML32G                              55920
## HML33                               44830
## HML34                                   0
## HML35                               44851
## HML36                               44841
## SBSEL                               44823
## SB211F                              48546
## SB217                               48535
## SB239                               48538
## SB240                               48538
## SB241                               55689
## SB245                               48540
## SB246                               55915
## SB247                               55915
## SB249                               55834
## SB253                               55867
## SB254                               55867
```

```
## SB117                    52212
## SB121A                   55808
## SB121B                   55808
## SB121C                   55808
## SB121D                   55808
## SB121E                   55808
## SB121F                   55808
## SB121G                   55808
## SB121H                   55808
## SB124                    55833
## SB128                    55857
## SB129                    55857
## IDXDIS                       0
## HDIS1                     8069
## HDIS2                     8069
## HDIS3                     8069
## HDIS4                     8069
## HDIS5                     8069
## HDIS6                     8069
## HDIS7                     8069
## HDIS8                     8069
## HDIS9                     8069
## MHA0                     51875
## MHA1                     51875
## MHA2                     51881
## MHA3                     51882
## MHA4                     51899
## MHA5                     51899
## MHA6                     51899
## MHA11                    51899
## MHA12                    51899
## MHA12A                   51899
## MHA12B                   51899
## MHA13                    51882
## MHA21                    51875
## MHA32                    51875
## MHA33                    51875
## MHA35                    51887
## MHA40                    51899
## MHA41                    51899
## MHA50                    51877
## MHA51                    55320
## MHA52                    51904
## MHA53                    51904
## MHA54                    51875
## MHA55                    51904
## MHA56                    51906
## MHA57                    51906
## MHA58                    55920
## MHA60                    51876
## MHA61                    51880
## MHA62                        0
## MHA63                    51881
## MHA64                    55920
```

```
## MHA65                                51875
## MHA66                                51875
## MHA67                                52240
## MHA68                                51875
## MHA69                                55920
## MHA70                                51889
## SB505A                               51886
## SB505B                               51889
## SB505CH                              52276
## SB505CM                              52883
## SB513A                               51904
## SB513C                               51904
## SB515                                51879
## SB515F                               51890
## SB527                                51879
## SB528                                51879
## SB529A                               51875
## SB529B                               51875
## SB529C                               51875
## SB529D                               51875
## SB530D                               51905
## SB530M                               51906
## SB530Y                               51905
## SB531H                               51905
## SB531M                               51905
## SB533                                51904
## SB534                                51908
## SB535                                51904
## SB536D                               51906
## SB536M                               51906
## SB536Y                               51906
## SB538                                55858
## SB542                                55911
## SB543                                55911
## MHC0                                 53703
## MHC1                                 53703
## MHC1A                                53703
## MHC2                                 53706
## MHC3                                 53707
## MHC4                                 53710
## MHC5                                 53710
## MHC6                                 53710
## MHC7                                 53710
## MHC8                                 53710
## MHC9                                 53710
## MHC10                                53710
## MHC11                                53710
## MHC12                                53710
## MHC13                                53707
## MHC15                                53710
## MHC16                                53703
## MHC17                                53703
## MHC18                                53703
## MHC19                                53703
```

```
## MHC20                                53703
## MHC21                                53703
## MHC27                                53703
## MHC30                                53703
## MHC31                                53703
## MHC32                                53703
## MHC32A                               53703
## MHC33                                53703
## MHC51                                53912
## MHC52                                53935
## MHC53                                53955
## MHC55                                53955
## MHC56                                53961
## MHC57                                53961
## MHC58                                55920
## MHC60                                53703
## MHC61                                53823
## MHC62                                54057
## MHC63                                54376
## MHC64                                53843
## MHC68                                53823
## MHC70                                53710
## MHC71                                53709
## MHC72                                53710
## MHC73                                53710
## MHC2A                                53706
## MHC3A                                53707
## MHC15A                               53710
## MHC2B                                55519
## MHC3B                                55519
## MHC15B                               53703
## MHC35                                53703
## SB404A                               53705
## SB404BH                              53753
## SB404BM                              53846
## SB412                                53913
## SB412F                               53921
## SB413A                               53934
## SB413C                               53934
## SB413F                               53934
## SB414                                53936
## SB415                                53936
## SB415A                               53934
## SB416A                               53703
## SB416B                               53703
## SB416C                               53703
## SB417D                               53954
## SB417M                               53954
## SB417Y                               53954
## SB418H                               53954
## SB418M                               53955
## SB420                                53954
## SB421                                53962
## SB422A                               55886
```

```
## SB422B                                  55886
## SB422C                                  55886
## SB422D                                  55886
## SB422E                                  55886
## SB422F                                  55886
## SB422G                                  55886
## SB422H                                  55886
## SB425                                   55889
## SB429                                   55899
## SB430                                   55899
```

```
# identifying columns type
data.frame(sapply(houseH, class))
```

```
##        HHID   HVIDX     HV000   HV001   HV002          HV003   HV004   HV005
## 1 character numeric character numeric numeric haven_labelled numeric numeric
## 2 character numeric character numeric numeric     vctrs_vctr numeric numeric
## 3 character numeric character numeric numeric         double numeric numeric
##     HV006   HV007   HV008  HV008A   HV009   HV010   HV011   HV012   HV013
## 1 numeric numeric numeric numeric numeric numeric numeric numeric numeric
## 2 numeric numeric numeric numeric numeric numeric numeric numeric numeric
## 3 numeric numeric numeric numeric numeric numeric numeric numeric numeric
##     HV014          HV015   HV016   HV017   HV018   HV019          HV020   HV021
## 1 numeric haven_labelled numeric numeric numeric numeric haven_labelled numeric
## 2 numeric     vctrs_vctr numeric numeric numeric numeric     vctrs_vctr numeric
## 3 numeric         double numeric numeric numeric numeric         double numeric
##            HV022          HV023          HV024          HV025          HV026
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV027   HV028   HV030   HV031   HV032   HV035   HV040   HV041
## 1 haven_labelled numeric numeric numeric numeric numeric numeric numeric
## 2     vctrs_vctr numeric numeric numeric numeric numeric numeric numeric
## 3         double numeric numeric numeric numeric numeric numeric numeric
##            HV042          HV044         HV045A         HV045B         HV045C
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV046   HV801   HV802          HV803   HV804  HV807D  HV807M  HV807Y
## 1 haven_labelled numeric numeric haven_labelled numeric numeric numeric numeric
## 2     vctrs_vctr numeric numeric     vctrs_vctr numeric numeric numeric numeric
## 3         double numeric numeric         double numeric numeric numeric numeric
##    HV807C  HV807A          HV201          HV202         HV201A          HV204
## 1 numeric numeric haven_labelled haven_labelled haven_labelled haven_labelled
## 2 numeric numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3 numeric numeric         double         double         double         double
##            HV205          HV206          HV207          HV208          HV209
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV210          HV211          HV212          HV213          HV214
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
```

```
##            HV215   HV216          HV217   HV218          HV219          HV220
## 1 haven_labelled numeric haven_labelled numeric haven_labelled haven_labelled
## 2     vctrs_vctr numeric     vctrs_vctr numeric     vctrs_vctr     vctrs_vctr
## 3         double numeric         double numeric         double         double
##            HV221          HV225          HV226          HV227          HV228
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV230A         HV230B          HV232         HV232B         HV232C
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV232D         HV232E         HV232Y          HV234         HV234A
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV235          HV236          HV237         HV237A         HV237B
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV237C         HV237D         HV237E         HV237F         HV237G
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV237H         HV237I         HV237J         HV237K         HV237X
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV237Z          HV238         HV238A          HV239          HV240
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV241          HV242         HV243A         HV243B         HV243C
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV243D         HV243E          HV244          HV245          HV246
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV246A         HV246B         HV246C         HV246D         HV246E
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV246F         HV246G         HV246H         HV246I         HV246J
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV246K          HV247          HV252          HV253         HV253A
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV253B         HV253C         HV253D         HV253E         HV253F
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
```

```
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HV253G         HV253H         HV253X         HV253Z          HV270
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##     HV271         HV270A  HV271A           HML1   HML1A    HML2    CHL0
## 1 numeric haven_labelled numeric haven_labelled numeric numeric numeric
## 2 numeric     vctrs_vctr numeric     vctrs_vctr numeric numeric numeric
## 3 numeric         double numeric         double numeric numeric numeric
##       SHDISTRICT       SHELIGMB         SH104A         SH108A         SH108B
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SH108C        SH112AA        SH112AB        SH112AC        SH112AY
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SH121G         SH121H         SH121I         SH121J         SH121K
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SH121L         SH121M         SH121N         SH121O         SH121P
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SH121Q         SH121R         SH122H         SH122I         SH124B
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SH144A         SH145A          HV101          HV102          HV103
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV104          HV105          HV106          HV107          HV108
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV109          HV110          HV111          HV112          HV113
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV114          HV115          HV116          HV117          HV118
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV120          HV121          HV122          HV123          HV124
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HV125          HV126          HV127          HV128          HV129
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
```

```
##            HV140   IDXH4           SH08           SH16          SH17A
## 1 haven_labelled numeric haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double numeric          double         double         double
##            SH17B           SH18          SH19A          SH19B           SH21
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##             SH22           SH23          SB315  SB315F          SB332
## 1 haven_labelled haven_labelled haven_labelled numeric haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric     vctrs_vctr
## 3         double         double         double numeric         double
##            SB333          SB337          SB338          SB339     HA0     HA1
## 1 haven_labelled haven_labelled haven_labelled haven_labelled numeric numeric
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric numeric
## 3         double         double         double         double numeric numeric
##              HA2            HA3            HA4            HA5            HA6
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##             HA11           HA12          HA12A          HA12B           HA13
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##      HA21    HA32           HA33           HA35           HA40           HA41
## 1 numeric numeric haven_labelled haven_labelled haven_labelled haven_labelled
## 2 numeric numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3 numeric numeric         double         double         double         double
##             HA50           HA51           HA52           HA53           HA54
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##             HA55           HA56           HA57           HA58           HA60
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##             HA61           HA62           HA63           HA64           HA65
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double      character         double         double         double
##             HA66           HA67           HA68    HA69    HA70     HC0     HC1
## 1 haven_labelled haven_labelled haven_labelled numeric numeric numeric numeric
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric numeric numeric numeric
## 3         double         double         double numeric numeric numeric numeric
##      HC1A            HC2            HC3            HC4            HC5
## 1 numeric haven_labelled haven_labelled haven_labelled haven_labelled
## 2 numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3 numeric         double         double         double         double
##              HC6            HC7            HC8            HC9           HC10
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##             HC11           HC12           HC13           HC15           HC16
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
```

```
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##      HC17    HC18    HC19    HC20    HC21           HC27           HC30
## 1 numeric numeric numeric numeric numeric haven_labelled haven_labelled
## 2 numeric numeric numeric numeric numeric     vctrs_vctr     vctrs_vctr
## 3 numeric numeric numeric numeric numeric         double         double
##            HC31    HC32   HC32A           HC33           HC51           HC52
## 1 haven_labelled numeric numeric haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr numeric numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double numeric numeric         double         double         double
##            HC53           HC55           HC56           HC57           HC58
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HC60           HC61           HC62    HC63    HC64           HC68
## 1 haven_labelled haven_labelled haven_labelled numeric numeric haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric numeric     vctrs_vctr
## 3         double         double         double numeric numeric         double
##            HC70           HC71           HC72           HC73           HC2A
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HC3A          HC15A           HC2B           HC3B          HC15B
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HC35     HB0     HB1            HB2            HB3            HB4
## 1 haven_labelled numeric numeric haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr numeric numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double numeric numeric         double         double         double
##              HB5            HB6           HB11           HB12          HB12A
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HB12B           HB13    HB21    HB32           HB33           HB35
## 1 haven_labelled haven_labelled numeric numeric haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr numeric numeric     vctrs_vctr     vctrs_vctr
## 3         double         double numeric numeric         double         double
##            HB40           HB41           HB50           HB51           HB52
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HB53           HB55           HB56           HB57           HB58
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HB60           HB61           HB62           HB63           HB64
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double      character         double         double
##            HB65           HB66           HB67           HB68    HB69    HB70
## 1 haven_labelled haven_labelled haven_labelled haven_labelled numeric numeric
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric numeric
## 3         double         double         double         double numeric numeric
```

```
##    HMLIDX           HML3           HML4           HML5           HML6
## 1 numeric haven_labelled haven_labelled haven_labelled haven_labelled
## 2 numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3 numeric         double         double         double         double
##            HML7           HML8           HML9          HML10          HML11
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HML21          HMLA    HMLB    HMLC    HMLD    HMLE          HML22
## 1 haven_labelled haven_labelled numeric numeric numeric numeric haven_labelled
## 2     vctrs_vctr     vctrs_vctr numeric numeric numeric numeric     vctrs_vctr
## 3         double         double numeric numeric numeric numeric         double
##           HML23         SH135A         SH135B        SH137AA  HMHIDX
## 1 haven_labelled haven_labelled haven_labelled haven_labelled numeric
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric
## 3         double         double         double         double numeric
##           HML12          HML13   HML14   HML15          HML16  HML16A
## 1 haven_labelled haven_labelled numeric numeric haven_labelled numeric
## 2     vctrs_vctr     vctrs_vctr numeric numeric     vctrs_vctr numeric
## 3         double         double numeric numeric         double numeric
##           HML17          HML18          HML19          HML20          HML30
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HML31          HML32         HML32A         HML32B         HML32C
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##          HML32D         HML32E         HML32F         HML32G          HML33
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           HML34          HML35   HML36          SBSEL  SB211F          SB217
## 1 haven_labelled haven_labelled numeric haven_labelled numeric haven_labelled
## 2     vctrs_vctr     vctrs_vctr numeric     vctrs_vctr numeric     vctrs_vctr
## 3      character         double numeric         double numeric         double
##            SB239          SB240          SB241          SB245          SB246
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            SB247          SB249          SB253          SB254          SB117
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SB121A         SB121B         SB121C         SB121D         SB121E
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SB121F         SB121G         SB121H          SB124          SB128
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            SB129  IDXDIS          HDIS1          HDIS2          HDIS3
## 1 haven_labelled numeric haven_labelled haven_labelled haven_labelled
```

```
## 2     vctrs_vctr numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double numeric         double         double         double
##            HDIS4          HDIS5          HDIS6          HDIS7          HDIS8
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            HDIS9    MHA0    MHA1           MHA2           MHA3           MHA4
## 1 haven_labelled numeric numeric haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr numeric numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double numeric numeric         double         double         double
##             MHA5           MHA6          MHA11          MHA12         MHA12A
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           MHA12B          MHA13          MHA21   MHA32          MHA33
## 1 haven_labelled haven_labelled haven_labelled numeric haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric     vctrs_vctr
## 3         double         double         double numeric         double
##            MHA35          MHA40          MHA41          MHA50          MHA51
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            MHA52          MHA53          MHA54          MHA55          MHA56
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            MHA57          MHA58          MHA60          MHA61          MHA62
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double      character
##            MHA63          MHA64          MHA65          MHA66          MHA67
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            MHA68   MHA69   MHA70         SB505A         SB505B        SB505CH
## 1 haven_labelled numeric numeric haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr numeric numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double numeric numeric         double         double         double
##   SB505CM         SB513A         SB513C          SB515  SB515F          SB527
## 1 numeric haven_labelled haven_labelled haven_labelled numeric haven_labelled
## 2 numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric     vctrs_vctr
## 3 numeric         double         double         double numeric         double
##            SB528         SB529A         SB529B         SB529C         SB529D
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SB530D         SB530M         SB530Y  SB531H  SB531M          SB533
## 1 haven_labelled haven_labelled haven_labelled numeric numeric haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric numeric     vctrs_vctr
## 3         double         double         double numeric numeric         double
##            SB534          SB535  SB536D         SB536M         SB536Y
## 1 haven_labelled haven_labelled numeric haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr numeric     vctrs_vctr     vctrs_vctr
## 3         double         double numeric         double         double
```

```
##            SB538          SB542          SB543    MHC0    MHC1   MHC1A
## 1 haven_labelled haven_labelled haven_labelled numeric numeric numeric
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric numeric numeric
## 3         double         double         double numeric numeric numeric
##             MHC2           MHC3           MHC4           MHC5           MHC6
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##             MHC7           MHC8           MHC9          MHC10          MHC11
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            MHC12          MHC13          MHC15          MHC16   MHC17   MHC18
## 1 haven_labelled haven_labelled haven_labelled haven_labelled numeric numeric
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric numeric
## 3         double         double         double         double numeric numeric
##     MHC19   MHC20   MHC21          MHC27          MHC30          MHC31   MHC32
## 1 numeric numeric numeric haven_labelled haven_labelled haven_labelled numeric
## 2 numeric numeric numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric
## 3 numeric numeric numeric         double         double         double numeric
##    MHC32A          MHC33          MHC51          MHC52          MHC53
## 1 numeric haven_labelled haven_labelled haven_labelled haven_labelled
## 2 numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3 numeric         double         double         double         double
##            MHC55          MHC56          MHC57          MHC58          MHC60
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##            MHC61          MHC62   MHC63   MHC64          MHC68          MHC70
## 1 haven_labelled haven_labelled numeric numeric haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr numeric numeric     vctrs_vctr     vctrs_vctr
## 3         double         double numeric numeric         double         double
##            MHC71          MHC72          MHC73          MHC2A          MHC3A
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           MHC15A          MHC2B          MHC3B         MHC15B          MHC35
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SB404A        SB404BH SB404BM          SB412  SB412F         SB413A
## 1 haven_labelled haven_labelled numeric haven_labelled numeric haven_labelled
## 2     vctrs_vctr     vctrs_vctr numeric     vctrs_vctr numeric     vctrs_vctr
## 3         double         double numeric         double numeric         double
##           SB413C  SB413F          SB414          SB415         SB415A
## 1 haven_labelled numeric haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double numeric         double         double         double
##           SB416A         SB416B         SB416C  SB417D         SB417M
## 1 haven_labelled haven_labelled haven_labelled numeric haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr numeric     vctrs_vctr
## 3         double         double         double numeric         double
##           SB417Y  SB418H  SB418M          SB420          SB421         SB422A
## 1 haven_labelled numeric numeric haven_labelled haven_labelled haven_labelled
```

```
## 2     vctrs_vctr numeric numeric     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double numeric numeric         double         double         double
##           SB422B         SB422C         SB422D         SB422E         SB422F
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
##           SB422G         SB422H          SB425          SB429          SB430
## 1 haven_labelled haven_labelled haven_labelled haven_labelled haven_labelled
## 2     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr     vctrs_vctr
## 3         double         double         double         double         double
```

```
 "haven_labelled" %in% class(houseH$HV025)
```

```
## [1] TRUE
```

2. Select only few columns, important in this Assignments. They are the following: "HV001", "HV009", "HV010", "HV011", "HV014", "SHDISTRICT", "HV024", "HV025", "HV040", "HV227", "HV228", "HV270", "HV105", "HV106", "HML3", "HML4", "HML7", "HML10", "HML22", "HML32","HML33", "HML35"

```
# your code here
columns <- c("HV001", "HV009", "HV010", "HV011", "HV014", "SHDISTRICT", "HV024", "HV025", "HV040", "HV2
  "HML10", "HML22", "HML32","HML33", "HML35")
df <- houseH[,columns]
```

3. Rename variables using the variable descriptions below. Give meaningful (short) name to the variables of your choice.

- HV001= "Cluster number", -> "cluster_no"
- HV009 = "Number of household members", -> "no_HH_member"
- HV010 = "Number of eligible women in household", ->
- HV011 = "Number of eligible men in household", ->
- HV014 = "Number of children 5 and under (de jure)", ->
- SHDISTRICT = "District (geographic area)", ->
- HV024 = "Region (provinces, corresponding values in a map file)", ->
- HV025 = "Type of place of residence (rural versus urban)", ->
- HV040 = "Cluster altitude in meters", ->
- HV227 = "Presence of mosquito bed net for sleeping", ->
- HV228 = "Number of children under 5 who slept under a mosquito bed net", ->
- HV270 = "Wealth index combined (an index based on various household assets indicating socio-economic status)", ->
- HV105 = "Age of household members", ->
- HV106 = "Highest educational level attained by individuals", ->
- HML3 = "Net observed by interviewer", ->
- HML4 = "Months ago the net was obtained", ->
- HML7 = "Brand of net", ->
- HML10 = "Insecticide-Treated Net (ITN)", ->
- HML22 = "Obtained net from campaign, antenatal, or immunization visit", ->
- HML33= "Result of malaria measurement", ->
- HML32 = "Final result of malaria from blood smear test", ->
- HML35 = "Result of malaria rapid test" ->

```
new_names <- c("cluster_no","no_HH_member","no_elig_wom_HH","no_elig_men_HH","child_under_5years","distr
               "province","locality","cluster_alt_M","mosquito_net_yes","child_under_5years_net_yes",
               "socio-economic_status","HH_members_ages","education_level","net_observed",
               "months_since_net_obtained","net_brand","ITN","antenatal","malaria_blood_T_result",
               "malaria_measures","malaria_rapid_T_result")
length(new_names)
```

```
## [1] 22
```

```
names(df) <- new_names
```

Data cleaning

1. Inspect each variables, decode variable to its original unique variables. Example, Variable "HV024"(Region) has Unique values 1,2,3,4,5. Decode it to orginal Region Kigali, South, West, North, East Use Map file to see the description of each values in data.

```
decode <- function(data){
  for(name in colnames(data)){
    if("haven_labelled" %in% class(data[[name]]) & (!name %in% c("HH_members_ages","months_since_net_ob
    data[name] <- as_factor(data[name])
   }
  }
 return(data)
}

df <- decode(df)
```

2. Handling Missing Values:

Determine columns with missing values. Devise the strategy to handle missing values: Deleting missing values, replacing missing values with mean or mode.

```
options(warn = -1)
# your code
library(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
```

```
count_NA <- function(data){
  data <- sapply(data, function(x) sum(is.na(x))) %>% sort(decreasing = TRUE) %>% data.frame() %>% rena

  return(data)
}
count_NA(df)
```

```
##                             null_count null_proprition
## malaria_blood_T_result           44869          80.24%
## malaria_rapid_T_result           44851          80.21%
## malaria_measures                 44830          80.17%
## net_observed                     29215          52.24%
## months_since_net_obtained        29215          52.24%
## net_brand                        29215          52.24%
## ITN                              29215          52.24%
## antenatal                        29215          52.24%
## child_under_5years_net_yes       23924          42.78%
## cluster_no                           0              0%
## no_HH_member                         0              0%
## no_elig_wom_HH                       0              0%
## no_elig_men_HH                       0              0%
## child_under_5years                   0              0%
## district                             0              0%
## province                             0              0%
## locality                             0              0%
## cluster_alt_M                        0              0%
## mosquito_net_yes                     0              0%
## socio-economic_status                0              0%
## HH_members_ages                      0              0%
## education_level                      0              0%
```

```
NA_imputer <- function(data){
  for(cname in colnames(Filter(function(col)  any(is.na(col)), data))){
    #print(paste(cname,":",names(sort(table(data[cname]), decreasing = T)[1])))
    if("factor" %in% class(data[[cname]])){
        data[cname][is.na(data[cname])] <- names(sort(table(data[[cname]]), decreasing = T)[1])

    }else{
      data[cname][is.na(data[cname])] <- as.integer(mean(data[[cname]], na.rm = T))

    }
  }
  return(data)
}

clean_df <- NA_imputer(df)

count_NA(clean_df)
```

```
##                             null_count null_proprition
## cluster_no                           0              0%
## no_HH_member                         0              0%
## no_elig_wom_HH                       0              0%
```

```
## no_elig_men_HH                    0             0%
## child_under_5years                0             0%
## district                          0             0%
## province                          0             0%
## locality                          0             0%
## cluster_alt_M                     0             0%
## mosquito_net_yes                  0             0%
## child_under_5years_net_yes        0             0%
## socio-economic_status             0             0%
## HH_members_ages                   0             0%
## education_level                   0             0%
## net_observed                      0             0%
## months_since_net_obtained         0             0%
## net_brand                         0             0%
## ITN                               0             0%
## antenatal                         0             0%
## malaria_blood_T_result            0             0%
## malaria_measures                  0             0%
## malaria_rapid_T_result            0             0%
```

3. Create new variables

    a. Create variable called "Old Mosquito" variable HML4 (Months ago the net was obtained). The created variable must binary with 1 when mosquito is more than 24 months old.
    b. Create Variable "Average District altitude". Create this variable by averaging cluster altitude in each district. We have three variables HV001= "Cluster number", SHDISTRICT = "District (geographic area)" and HV040 = "Cluster altitude in meters". Filter out clusters in each district, do `mean` of cluster altitude in that district.

```
library(dplyr)
clean_df <- clean_df %>%
  mutate(
    'Old Mosquito' = ifelse(months_since_net_obtained > 24, 1, 0)
  ) %>%
  group_by(district) %>%
  mutate(
    'Average District Altitude' = mean(cluster_alt_M, na.rm = TRUE)
  ) %>%
  ungroup()

names(clean_df)
```

```
##  [1] "cluster_no"                "no_HH_member"
##  [3] "no_elig_wom_HH"            "no_elig_men_HH"
##  [5] "child_under_5years"        "district"
##  [7] "province"                  "locality"
##  [9] "cluster_alt_M"             "mosquito_net_yes"
## [11] "child_under_5years_net_yes" "socio-economic_status"
## [13] "HH_members_ages"           "education_level"
## [15] "net_observed"              "months_since_net_obtained"
## [17] "net_brand"                 "ITN"
## [19] "antenatal"                 "malaria_blood_T_result"
## [21] "malaria_measures"          "malaria_rapid_T_result"
## [23] "Old Mosquito"              "Average District Altitude"
```

Data visualizations:

Produce visualization of your choice. At least each of these - Bar plot

```
# your code
#clean_df %>% group_by(province,mosquito_net_yes) %>% sum(mosquito_net_yes)
```

- Pie plot

```
# your code
```

- Histogram

```
# your code
```

- Boxplot

```
# your code
```

Statistical analysis

Descriptive statistics

1. Use Variable "HML33" to filter out people who had Malaria measurement.

```
# your code
```

2. Calculate Malaria Prevalence for both "Blood Smear" and "Rapid Test"

```
# your code
```

3. Aggregate Prevalence at district Level

```
# your code
```

Analytical Analysis

1. Compare the prevalence in both tests and state if they are different.

Hint: Check `?` the documentations for `t.test` and `aov`.

```
# your code
```

Bonus

2. Using a statistical model of your choice, determine if there is a relationship between malaria prevalence in a district and its average altitude.

```
# your code
```