assignment_5.2_Torres_Gloria.R

2023-04-16

```r
# Assignment:5.2
# Name: Torres, Estrada
# Date: 2023-04-12



# Using either the same dataset(s) you used in the previous weeks' exercise
or a brand-new dataset of your choosing, perform the following
transformations
# (Remember, anything you learn about the Housing dataset in these two weeks
can be used for a later exercise!)
# Using the dplyr package, use the 6 different operations to
analyze/transform the data - GroupBy, Summarize, Mutate, Filter, Select, and
Arrange -
# Remember this isn't just modifying data, you are learning about your data
also - so play around and start to understand your dataset in more detail


setwd('C:/Users/glori/OneDrive/Documents/Gloria GIT/Gloria_Torres_DSC_520')

ac_survey <- read.csv("data/acs-14-1yr-s0201.csv")

library(plyr)
library(dplyr)

##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:plyr':
##
##     arrange, count, desc, failwith, id, mutate, rename, summarise,
##     summarize

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

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

library(magrittr)
ac_survey %>%
  group_by(HSDegree) %>%  # GroupBy
  summarize(count = sum(HSDegree >= 50))  # Summarize
```

```
## # A tibble: 86 × 2
##    HSDegree count
##       <dbl> <int>
##  1     62.2     1
##  2     70.5     1
##  3     73.6     1
##  4     74.5     1
##  5     75.8     1
##  6     77.5     1
##  7     77.6     2
##  8     78.4     1
##  9     78.6     1
## 10     79.8     1
## # i 76 more rows
```

```
update_ac_survey <- ac_survey %>% mutate(BachDegree = replace(BachDegree,
BachDegree <= 30, "Low")) # Mutate
update_ac_survey
```

```
##                    Id    Id2                        Geography
PopGroupID
## 1   0500000US01073  1073          Jefferson County, Alabama
1
## 2   0500000US04013  4013           Maricopa County, Arizona
1
## 3   0500000US04019  4019               Pima County, Arizona
1
## 4   0500000US06001  6001         Alameda County, California
1
## 5   0500000US06013  6013     Contra Costa County, California
1
## 6   0500000US06019  6019          Fresno County, California
1
## 7   0500000US06029  6029            Kern County, California
1
## 8   0500000US06037  6037     Los Angeles County, California
1
## 9   0500000US06059  6059          Orange County, California
1
## 10  0500000US06065  6065        Riverside County, California
1
## 11  0500000US06067  6067       Sacramento County, California
1
## 12  0500000US06071  6071    San Bernardino County, California
1
## 13  0500000US06073  6073         San Diego County, California
1
## 14  0500000US06075  6075     San Francisco County, California
1
## 15  0500000US06077  6077       San Joaquin County, California
```

```
1
## 16  0500000US06081  6081                San Mateo County, California
1
## 17  0500000US06085  6085               Santa Clara County, California
1
## 18  0500000US06097  6097                   Sonoma County, California
1
## 19  0500000US06099  6099                Stanislaus County, California
1
## 20  0500000US06111  6111                  Ventura County, California
1
## 21  0500000US08005  8005                   Arapahoe County, Colorado
1
## 22  0500000US08031  8031                     Denver County, Colorado
1
## 23  0500000US08041  8041                    El Paso County, Colorado
1
## 24  0500000US08059  8059                  Jefferson County, Colorado
1
## 25  0500000US09001  9001                Fairfield County, Connecticut
1
## 26  0500000US09003  9003                 Hartford County, Connecticut
1
## 27  0500000US09009  9009               New Haven County, Connecticut
1
## 28  0500000US10003 10003                  New Castle County, Delaware
1
## 29  0500000US11001 11001 District of Columbia, District of Columbia
1
## 30  0500000US12009 12009                   Brevard County, Florida
1
## 31  0500000US12011 12011                   Broward County, Florida
1
## 32  0500000US12031 12031                     Duval County, Florida
1
## 33  0500000US12057 12057               Hillsborough County, Florida
1
## 34  0500000US12071 12071                       Lee County, Florida
1
## 35  0500000US12086 12086                 Miami-Dade County, Florida
1
## 36  0500000US12095 12095                    Orange County, Florida
1
## 37  0500000US12099 12099                Palm Beach County, Florida
1
## 38  0500000US12103 12103                  Pinellas County, Florida
1
## 39  0500000US12105 12105                      Polk County, Florida
1
## 40  0500000US12127 12127                   Volusia County, Florida
```

```
                 1
## 41   0500000US13067 13067                          Cobb County, Georgia
                 1
## 42   0500000US13089 13089                         DeKalb County, Georgia
                 1
## 43   0500000US13121 13121                         Fulton County, Georgia
                 1
## 44   0500000US13135 13135                       Gwinnett County, Georgia
                 1
## 45   0500000US15003 15003                         Honolulu County, Hawaii
                 1
## 46   0500000US17031 17031                           Cook County, Illinois
                 1
## 47   0500000US17043 17043                         DuPage County, Illinois
                 1
## 48   0500000US17089 17089                           Kane County, Illinois
                 1
## 49   0500000US17097 17097                           Lake County, Illinois
                 1
## 50   0500000US17197 17197                           Will County, Illinois
                 1
## 51   0500000US18097 18097                         Marion County, Indiana
                 1
## 52   0500000US20091 20091                          Johnson County, Kansas
                 1
## 53   0500000US20173 20173                         Sedgwick County, Kansas
                 1
## 54   0500000US21111 21111                       Jefferson County, Kentucky
                 1
## 55   0500000US24003 24003                    Anne Arundel County, Maryland
                 1
## 56   0500000US24005 24005                       Baltimore County, Maryland
                 1
## 57   0500000US24031 24031                      Montgomery County, Maryland
                 1
## 58   0500000US24033 24033                  Prince George's County, Maryland
                 1
## 59   0500000US24510 24510                         Baltimore city, Maryland
                 1
## 60   0500000US25005 25005                    Bristol County, Massachusetts
                 1
## 61   0500000US25009 25009                     Essex County, Massachusetts
                 1
## 62   0500000US25017 25017                  Middlesex County, Massachusetts
                 1
## 63   0500000US25021 25021                    Norfolk County, Massachusetts
                 1
## 64   0500000US25023 25023                   Plymouth County, Massachusetts
                 1
## 65   0500000US25025 25025                    Suffolk County, Massachusetts
```

```
1
## 66   0500000US25027 25027          Worcester County, Massachusetts
1
## 67   0500000US26081 26081              Kent County, Michigan
1
## 68   0500000US26099 26099            Macomb County, Michigan
1
## 69   0500000US26125 26125           Oakland County, Michigan
1
## 70   0500000US26163 26163             Wayne County, Michigan
1
## 71   0500000US27053 27053          Hennepin County, Minnesota
1
## 72   0500000US27123 27123            Ramsey County, Minnesota
1
## 73   0500000US29095 29095            Jackson County, Missouri
1
## 74   0500000US29189 29189           St. Louis County, Missouri
1
## 75   0500000US31055 31055            Douglas County, Nebraska
1
## 76   0500000US32003 32003               Clark County, Nevada
1
## 77   0500000US34003 34003            Bergen County, New Jersey
1
## 78   0500000US34007 34007            Camden County, New Jersey
1
## 79   0500000US34013 34013             Essex County, New Jersey
1
## 80   0500000US34017 34017            Hudson County, New Jersey
1
## 81   0500000US34023 34023         Middlesex County, New Jersey
1
## 82   0500000US34025 34025          Monmouth County, New Jersey
1
## 83   0500000US34029 34029             Ocean County, New Jersey
1
## 84   0500000US34031 34031           Passaic County, New Jersey
1
## 85   0500000US34039 34039             Union County, New Jersey
1
## 86   0500000US35001 35001         Bernalillo County, New Mexico
1
## 87   0500000US36005 36005               Bronx County, New York
1
## 88   0500000US36029 36029               Erie County, New York
1
## 89   0500000US36047 36047              Kings County, New York
1
## 90   0500000US36055 36055             Monroe County, New York
```

```
1
## 91  0500000US36059 36059                    Nassau County, New York
1
## 92  0500000US36061 36061                  New York County, New York
1
## 93  0500000US36081 36081                    Queens County, New York
1
## 94  0500000US36103 36103                   Suffolk County, New York
1
## 95  0500000US36119 36119               Westchester County, New York
1
## 96  0500000US37081 37081           Guilford County, North Carolina
1
## 97  0500000US37119 37119        Mecklenburg County, North Carolina
1
## 98  0500000US37183 37183              Wake County, North Carolina
1
## 99  0500000US39035 39035                   Cuyahoga County, Ohio
1
## 100 0500000US39049 39049                   Franklin County, Ohio
1
## 101 0500000US39061 39061                   Hamilton County, Ohio
1
## 102 0500000US39113 39113                 Montgomery County, Ohio
1
## 103 0500000US39153 39153                    Summit County, Ohio
1
## 104 0500000US40109 40109             Oklahoma County, Oklahoma
1
## 105 0500000US40143 40143                Tulsa County, Oklahoma
1
## 106 0500000US41051 41051             Multnomah County, Oregon
1
## 107 0500000US41067 41067            Washington County, Oregon
1
## 108 0500000US42003 42003        Allegheny County, Pennsylvania
1
## 109 0500000US42017 42017            Bucks County, Pennsylvania
1
## 110 0500000US42029 42029          Chester County, Pennsylvania
1
## 111 0500000US42045 42045         Delaware County, Pennsylvania
1
## 112 0500000US42071 42071         Lancaster County, Pennsylvania
1
## 113 0500000US42091 42091        Montgomery County, Pennsylvania
1
## 114 0500000US42101 42101       Philadelphia County, Pennsylvania
1
## 115 0500000US44007 44007         Providence County, Rhode Island
```

```
                                                                           1
## 116 0500000US47037 47037                        Davidson County, Tennessee
                                                                           1
## 117 0500000US47157 47157                          Shelby County, Tennessee
                                                                           1
## 118 0500000US48029 48029                               Bexar County, Texas
                                                                           1
## 119 0500000US48085 48085                              Collin County, Texas
                                                                           1
## 120 0500000US48113 48113                              Dallas County, Texas
                                                                           1
## 121 0500000US48121 48121                              Denton County, Texas
                                                                           1
## 122 0500000US48141 48141                             El Paso County, Texas
                                                                           1
## 123 0500000US48157 48157                           Fort Bend County, Texas
                                                                           1
## 124 0500000US48201 48201                              Harris County, Texas
                                                                           1
## 125 0500000US48215 48215                             Hidalgo County, Texas
                                                                           1
## 126 0500000US48339 48339                          Montgomery County, Texas
                                                                           1
## 127 0500000US48439 48439                             Tarrant County, Texas
                                                                           1
## 128 0500000US48453 48453                              Travis County, Texas
                                                                           1
## 129 0500000US49035 49035                           Salt Lake County, Utah
                                                                           1
## 130 0500000US49049 49049                                Utah County, Utah
                                                                           1
## 131 0500000US51059 51059                        Fairfax County, Virginia
                                                                           1
## 132 0500000US53033 53033                        King County, Washington
                                                                           1
## 133 0500000US53053 53053                        Pierce County, Washington
                                                                           1
## 134 0500000US53061 53061                      Snohomish County, Washington
                                                                           1
## 135 0500000US55025 55025                          Dane County, Wisconsin
                                                                           1
## 136 0500000US55079 55079                        Milwaukee County, Wisconsin
                                                                           1
##      POPGROUP.display.label RacesReported HSDegree BachDegree
## 1          Total population        660793     89.1       30.5
## 2          Total population       4087191     86.8       30.2
## 3          Total population       1004516     88.0       30.8
## 4          Total population       1610921     86.9       42.8
## 5          Total population       1111339     88.8       39.7
## 6          Total population        965974     73.6        Low
```

```
## 7           Total population      874589      74.5        Low
## 8           Total population    10116705      77.5        30.3
## 9           Total population     3145515      84.6          38
## 10          Total population     2329271      80.6         Low
## 11          Total population     1482026      86.8         Low
## 12          Total population     2112619      78.6         Low
## 13          Total population     3263431      86.6        37.1
## 14          Total population      852469      88.1        54.2
## 15          Total population      715597      77.6         Low
## 16          Total population      758581      88.1        47.5
## 17          Total population     1894605      87.4        48.4
## 18          Total population      500292      87.6        34.8
## 19          Total population      531997      78.4         Low
## 20          Total population      846178      83.6        31.6
## 21          Total population      618821      91.9        40.9
## 22          Total population      663862      85.5        44.3
## 23          Total population      663519      92.8        36.5
## 24          Total population      558503      94.1          42
## 25          Total population      945438      89.8        46.7
## 26          Total population      897985      89.3        36.8
## 27          Total population      861277      89.5        34.5
## 28          Total population      552778      90.1        35.8
## 29          Total population      658893      90.2          55
## 30          Total population      556885      91.6         Low
## 31          Total population     1869235      88.4        30.5
## 32          Total population      897698      89.0         Low
## 33          Total population     1316298      87.3         Low
## 34          Total population      679513      86.3         Low
## 35          Total population     2662874      80.9         Low
## 36          Total population     1253001      87.9        31.4
## 37          Total population     1397710      87.7          33
## 38          Total population      938098      90.1         Low
## 39          Total population      634638      84.9         Low
## 40          Total population      507531      88.9         Low
## 41          Total population      730981      90.3        43.7
## 42          Total population      722161      88.4        41.7
## 43          Total population      996319      91.3        49.2
## 44          Total population      877922      88.0        35.4
## 45          Total population      991788      91.8        32.6
## 46          Total population     5246456      85.5        36.2
## 47          Total population      932708      92.3          48
## 48          Total population      527306      82.9        32.6
## 49          Total population      705186      90.3          44
## 50          Total population      685419      90.7        33.1
## 51          Total population      934243      85.0         Low
## 52          Total population      574272      95.5        52.8
## 53          Total population      508803      88.8        30.7
## 54          Total population      760026      88.5        31.6
## 55          Total population      560133      91.9        38.8
## 56          Total population      826925      90.4        37.2
```

```
## 57       Total population   1030447   90.9   58.5
## 58       Total population    904430   85.5     31
## 59       Total population    622793   84.4    Low
## 60       Total population    554194   82.5    Low
## 61       Total population    769091   89.1   38.9
## 62       Total population   1570315   92.3   52.3
## 63       Total population    692254   94.1   51.9
## 64       Total population    507022   92.2   34.1
## 65       Total population    767254   83.9   42.3
## 66       Total population    813475   90.1   34.6
## 67       Total population    629237   89.1   33.7
## 68       Total population    860112   89.3    Low
## 69       Total population   1237868   93.6   44.8
## 70       Total population   1764804   84.9    Low
## 71       Total population   1212064   93.2   47.3
## 72       Total population    532655   89.9   40.9
## 73       Total population    683191   90.0    Low
## 74       Total population   1001876   93.2   42.8
## 75       Total population    543244   88.2   36.3
## 76       Total population   2069681   84.5    Low
## 77       Total population    933572   91.5   46.2
## 78       Total population    511038   88.3   31.3
## 79       Total population    795723   85.5   32.7
## 80       Total population    669115   83.4   38.2
## 81       Total population    836297   89.1     41
## 82       Total population    629279   93.1   43.7
## 83       Total population    586301   91.7    Low
## 84       Total population    508856   83.8    Low
## 85       Total population    552939   86.2     33
## 86       Total population    675551   88.0   32.7
## 87       Total population   1438159   70.5    Low
## 88       Total population    922835   90.6   31.3
## 89       Total population   2621793   80.0   34.3
## 90       Total population    749857   90.3   35.9
## 91       Total population   1358627   90.7   43.2
## 92       Total population   1636268   86.8   59.9
## 93       Total population   2321580   80.4    Low
## 94       Total population   1502968   89.8     34
## 95       Total population    972634   87.4   47.1
## 96       Total population    512119   89.0   33.3
## 97       Total population   1012539   89.5     43
## 98       Total population    998691   92.4   49.2
## 99       Total population   1259828   88.1     31
## 100      Total population   1231393   90.0     38
## 101      Total population    806631   90.5   35.6
## 102      Total population    533116   89.7    Low
## 103      Total population    541943   91.1   30.3
## 104      Total population    766215   86.8   30.6
## 105      Total population    629598   88.6   30.7
## 106      Total population    776712   91.1   41.6
```

```
## 107         Total population     562998     90.2     39.7
## 108         Total population    1231255     93.9     37.7
## 109         Total population     626685     93.9     37.7
## 110         Total population     512784     92.3     49.3
## 111         Total population     562960     91.5     36.3
## 112         Total population     533320     84.9      Low
## 113         Total population     816857     93.7     47.3
## 114         Total population    1560297     82.6      Low
## 115         Total population     631974     82.0      Low
## 116         Total population     668347     86.7     37.3
## 117         Total population     938803     87.4      Low
## 118         Total population    1855866     83.0      Low
## 119         Total population     885241     93.7       50
## 120         Total population    2518638     77.6      Low
## 121         Total population     753363     91.9     41.5
## 122         Total population     833487     75.8      Low
## 123         Total population     685345     88.6     44.1
## 124         Total population    4441370     79.8      Low
## 125         Total population     831073     62.2      Low
## 126         Total population     518947     85.9     34.1
## 127         Total population    1945360     84.9      Low
## 128         Total population    1151145     88.6     45.6
## 129         Total population    1091742     89.5     31.9
## 130         Total population     560974     93.7     37.5
## 131         Total population    1137538     91.5     60.3
## 132         Total population    2079967     92.3     48.6
## 133         Total population     831928     90.3      Low
## 134         Total population     759583     92.0      Low
## 135         Total population     516284     94.9     49.8
## 136         Total population     956406     86.9      Low
```

```r
update_ac_survey %>% filter(BachDegree == "Low") # Filter,
```

```
##                 Id    Id2                           Geography PopGroupID
## 1  0500000US06019   6019           Fresno County, California          1
## 2  0500000US06029   6029             Kern County, California          1
## 3  0500000US06065   6065         Riverside County, California          1
## 4  0500000US06067   6067        Sacramento County, California          1
## 5  0500000US06071   6071 San Bernardino County, California          1
## 6  0500000US06077   6077       San Joaquin County, California          1
## 7  0500000US06099   6099        Stanislaus County, California          1
## 8  0500000US12009  12009           Brevard County, Florida          1
## 9  0500000US12031  12031             Duval County, Florida          1
## 10 0500000US12057  12057       Hillsborough County, Florida          1
## 11 0500000US12071  12071               Lee County, Florida          1
## 12 0500000US12086  12086         Miami-Dade County, Florida          1
## 13 0500000US12103  12103          Pinellas County, Florida          1
## 14 0500000US12105  12105              Polk County, Florida          1
## 15 0500000US12127  12127           Volusia County, Florida          1
## 16 0500000US18097  18097            Marion County, Indiana          1
```

```
## 17 0500000US24510 24510       Baltimore city, Maryland        1
## 18 0500000US25005 25005    Bristol County, Massachusetts       1
## 19 0500000US26099 26099       Macomb County, Michigan          1
## 20 0500000US26163 26163        Wayne County, Michigan          1
## 21 0500000US29095 29095       Jackson County, Missouri         1
## 22 0500000US32003 32003          Clark County, Nevada          1
## 23 0500000US34029 34029       Ocean County, New Jersey         1
## 24 0500000US34031 34031     Passaic County, New Jersey         1
## 25 0500000US36005 36005        Bronx County, New York          1
## 26 0500000US36081 36081       Queens County, New York          1
## 27 0500000US39113 39113       Montgomery County, Ohio          1
## 28 0500000US42071 42071    Lancaster County, Pennsylvania      1
## 29 0500000US42101 42101 Philadelphia County, Pennsylvania      1
## 30 0500000US44007 44007   Providence County, Rhode Island      1
## 31 0500000US47157 47157      Shelby County, Tennessee          1
## 32 0500000US48029 48029           Bexar County, Texas          1
## 33 0500000US48113 48113          Dallas County, Texas          1
## 34 0500000US48141 48141         El Paso County, Texas          1
## 35 0500000US48201 48201          Harris County, Texas          1
## 36 0500000US48215 48215         Hidalgo County, Texas          1
## 37 0500000US48439 48439         Tarrant County, Texas          1
## 38 0500000US53053 53053      Pierce County, Washington         1
## 39 0500000US53061 53061    Snohomish County, Washington        1
## 40 0500000US55079 55079     Milwaukee County, Wisconsin        1
##      POPGROUP.display.label RacesReported HSDegree BachDegree
## 1          Total population        965974     73.6        Low
## 2          Total population        874589     74.5        Low
## 3          Total population       2329271     80.6        Low
## 4          Total population       1482026     86.8        Low
## 5          Total population       2112619     78.6        Low
## 6          Total population        715597     77.6        Low
## 7          Total population        531997     78.4        Low
## 8          Total population        556885     91.6        Low
## 9          Total population        897698     89.0        Low
## 10         Total population       1316298     87.3        Low
## 11         Total population        679513     86.3        Low
## 12         Total population       2662874     80.9        Low
## 13         Total population        938098     90.1        Low
## 14         Total population        634638     84.9        Low
## 15         Total population        507531     88.9        Low
## 16         Total population        934243     85.0        Low
## 17         Total population        622793     84.4        Low
## 18         Total population        554194     82.5        Low
## 19         Total population        860112     89.3        Low
## 20         Total population       1764804     84.9        Low
## 21         Total population        683191     90.0        Low
## 22         Total population       2069681     84.5        Low
## 23         Total population        586301     91.7        Low
## 24         Total population        508856     83.8        Low
## 25         Total population       1438159     70.5        Low
```

```
## 26        Total population    2321580    80.4       Low
## 27        Total population     533116    89.7       Low
## 28        Total population     533320    84.9       Low
## 29        Total population    1560297    82.6       Low
## 30        Total population     631974    82.0       Low
## 31        Total population     938803    87.4       Low
## 32        Total population    1855866    83.0       Low
## 33        Total population    2518638    77.6       Low
## 34        Total population     833487    75.8       Low
## 35        Total population    4441370    79.8       Low
## 36        Total population     831073    62.2       Low
## 37        Total population    1945360    84.9       Low
## 38        Total population     831928    90.3       Low
## 39        Total population     759583    92.0       Low
## 40        Total population     956406    86.9       Low
```

```r
unselect_field <- update_ac_survey %>% select(-Geography)  # Select
unselect_field
```

```
##                  Id   Id2 PopGroupID POPGROUP.display.label RacesReported
## 1  0500000US01073  1073          1       Total population        660793
## 2  0500000US04013  4013          1       Total population       4087191
## 3  0500000US04019  4019          1       Total population       1004516
## 4  0500000US06001  6001          1       Total population       1610921
## 5  0500000US06013  6013          1       Total population       1111339
## 6  0500000US06019  6019          1       Total population        965974
## 7  0500000US06029  6029          1       Total population        874589
## 8  0500000US06037  6037          1       Total population      10116705
## 9  0500000US06059  6059          1       Total population       3145515
## 10 0500000US06065  6065          1       Total population       2329271
## 11 0500000US06067  6067          1       Total population       1482026
## 12 0500000US06071  6071          1       Total population       2112619
## 13 0500000US06073  6073          1       Total population       3263431
## 14 0500000US06075  6075          1       Total population        852469
## 15 0500000US06077  6077          1       Total population        715597
## 16 0500000US06081  6081          1       Total population        758581
## 17 0500000US06085  6085          1       Total population       1894605
## 18 0500000US06097  6097          1       Total population        500292
## 19 0500000US06099  6099          1       Total population        531997
## 20 0500000US06111  6111          1       Total population        846178
## 21 0500000US08005  8005          1       Total population        618821
## 22 0500000US08031  8031          1       Total population        663862
## 23 0500000US08041  8041          1       Total population        663519
## 24 0500000US08059  8059          1       Total population        558503
## 25 0500000US09001  9001          1       Total population        945438
## 26 0500000US09003  9003          1       Total population        897985
## 27 0500000US09009  9009          1       Total population        861277
## 28 0500000US10003 10003          1       Total population        552778
## 29 0500000US11001 11001          1       Total population        658893
## 30 0500000US12009 12009          1       Total population        556885
```

```
## 31   0500000US12011 12011          1      Total population    1869235
## 32   0500000US12031 12031          1      Total population     897698
## 33   0500000US12057 12057          1      Total population    1316298
## 34   0500000US12071 12071          1      Total population     679513
## 35   0500000US12086 12086          1      Total population    2662874
## 36   0500000US12095 12095          1      Total population    1253001
## 37   0500000US12099 12099          1      Total population    1397710
## 38   0500000US12103 12103          1      Total population     938098
## 39   0500000US12105 12105          1      Total population     634638
## 40   0500000US12127 12127          1      Total population     507531
## 41   0500000US13067 13067          1      Total population     730981
## 42   0500000US13089 13089          1      Total population     722161
## 43   0500000US13121 13121          1      Total population     996319
## 44   0500000US13135 13135          1      Total population     877922
## 45   0500000US15003 15003          1      Total population     991788
## 46   0500000US17031 17031          1      Total population    5246456
## 47   0500000US17043 17043          1      Total population     932708
## 48   0500000US17089 17089          1      Total population     527306
## 49   0500000US17097 17097          1      Total population     705186
## 50   0500000US17197 17197          1      Total population     685419
## 51   0500000US18097 18097          1      Total population     934243
## 52   0500000US20091 20091          1      Total population     574272
## 53   0500000US20173 20173          1      Total population     508803
## 54   0500000US21111 21111          1      Total population     760026
## 55   0500000US24003 24003          1      Total population     560133
## 56   0500000US24005 24005          1      Total population     826925
## 57   0500000US24031 24031          1      Total population    1030447
## 58   0500000US24033 24033          1      Total population     904430
## 59   0500000US24510 24510          1      Total population     622793
## 60   0500000US25005 25005          1      Total population     554194
## 61   0500000US25009 25009          1      Total population     769091
## 62   0500000US25017 25017          1      Total population    1570315
## 63   0500000US25021 25021          1      Total population     692254
## 64   0500000US25023 25023          1      Total population     507022
## 65   0500000US25025 25025          1      Total population     767254
## 66   0500000US25027 25027          1      Total population     813475
## 67   0500000US26081 26081          1      Total population     629237
## 68   0500000US26099 26099          1      Total population     860112
## 69   0500000US26125 26125          1      Total population    1237868
## 70   0500000US26163 26163          1      Total population    1764804
## 71   0500000US27053 27053          1      Total population    1212064
## 72   0500000US27123 27123          1      Total population     532655
## 73   0500000US29095 29095          1      Total population     683191
## 74   0500000US29189 29189          1      Total population    1001876
## 75   0500000US31055 31055          1      Total population     543244
## 76   0500000US32003 32003          1      Total population    2069681
## 77   0500000US34003 34003          1      Total population     933572
## 78   0500000US34007 34007          1      Total population     511038
## 79   0500000US34013 34013          1      Total population     795723
## 80   0500000US34017 34017          1      Total population     669115
```

```
## 81  0500000US34023 34023        1    Total population        836297
## 82  0500000US34025 34025        1    Total population        629279
## 83  0500000US34029 34029        1    Total population        586301
## 84  0500000US34031 34031        1    Total population        508856
## 85  0500000US34039 34039        1    Total population        552939
## 86  0500000US35001 35001        1    Total population        675551
## 87  0500000US36005 36005        1    Total population       1438159
## 88  0500000US36029 36029        1    Total population        922835
## 89  0500000US36047 36047        1    Total population       2621793
## 90  0500000US36055 36055        1    Total population        749857
## 91  0500000US36059 36059        1    Total population       1358627
## 92  0500000US36061 36061        1    Total population       1636268
## 93  0500000US36081 36081        1    Total population       2321580
## 94  0500000US36103 36103        1    Total population       1502968
## 95  0500000US36119 36119        1    Total population        972634
## 96  0500000US37081 37081        1    Total population        512119
## 97  0500000US37119 37119        1    Total population       1012539
## 98  0500000US37183 37183        1    Total population        998691
## 99  0500000US39035 39035        1    Total population       1259828
## 100 0500000US39049 39049        1    Total population       1231393
## 101 0500000US39061 39061        1    Total population        806631
## 102 0500000US39113 39113        1    Total population        533116
## 103 0500000US39153 39153        1    Total population        541943
## 104 0500000US40109 40109        1    Total population        766215
## 105 0500000US40143 40143        1    Total population        629598
## 106 0500000US41051 41051        1    Total population        776712
## 107 0500000US41067 41067        1    Total population        562998
## 108 0500000US42003 42003        1    Total population       1231255
## 109 0500000US42017 42017        1    Total population        626685
## 110 0500000US42029 42029        1    Total population        512784
## 111 0500000US42045 42045        1    Total population        562960
## 112 0500000US42071 42071        1    Total population        533320
## 113 0500000US42091 42091        1    Total population        816857
## 114 0500000US42101 42101        1    Total population       1560297
## 115 0500000US44007 44007        1    Total population        631974
## 116 0500000US47037 47037        1    Total population        668347
## 117 0500000US47157 47157        1    Total population        938803
## 118 0500000US48029 48029        1    Total population       1855866
## 119 0500000US48085 48085        1    Total population        885241
## 120 0500000US48113 48113        1    Total population       2518638
## 121 0500000US48121 48121        1    Total population        753363
## 122 0500000US48141 48141        1    Total population        833487
## 123 0500000US48157 48157        1    Total population        685345
## 124 0500000US48201 48201        1    Total population       4441370
## 125 0500000US48215 48215        1    Total population        831073
## 126 0500000US48339 48339        1    Total population        518947
## 127 0500000US48439 48439        1    Total population       1945360
## 128 0500000US48453 48453        1    Total population       1151145
## 129 0500000US49035 49035        1    Total population       1091742
## 130 0500000US49049 49049        1    Total population        560974
```

```
## 131 0500000US51059 51059        1    Total population   1137538
## 132 0500000US53033 53033        1    Total population   2079967
## 133 0500000US53053 53053        1    Total population    831928
## 134 0500000US53061 53061        1    Total population    759583
## 135 0500000US55025 55025        1    Total population    516284
## 136 0500000US55079 55079        1    Total population    956406
##      HSDegree BachDegree
## 1        89.1       30.5
## 2        86.8       30.2
## 3        88.0       30.8
## 4        86.9       42.8
## 5        88.8       39.7
## 6        73.6        Low
## 7        74.5        Low
## 8        77.5       30.3
## 9        84.6         38
## 10       80.6        Low
## 11       86.8        Low
## 12       78.6        Low
## 13       86.6       37.1
## 14       88.1       54.2
## 15       77.6        Low
## 16       88.1       47.5
## 17       87.4       48.4
## 18       87.6       34.8
## 19       78.4        Low
## 20       83.6       31.6
## 21       91.9       40.9
## 22       85.5       44.3
## 23       92.8       36.5
## 24       94.1         42
## 25       89.8       46.7
## 26       89.3       36.8
## 27       89.5       34.5
## 28       90.1       35.8
## 29       90.2         55
## 30       91.6        Low
## 31       88.4       30.5
## 32       89.0        Low
## 33       87.3        Low
## 34       86.3        Low
## 35       80.9        Low
## 36       87.9       31.4
## 37       87.7         33
## 38       90.1        Low
## 39       84.9        Low
## 40       88.9        Low
## 41       90.3       43.7
## 42       88.4       41.7
## 43       91.3       49.2
```

```
## 44       88.0       35.4
## 45       91.8       32.6
## 46       85.5       36.2
## 47       92.3         48
## 48       82.9       32.6
## 49       90.3         44
## 50       90.7       33.1
## 51       85.0        Low
## 52       95.5       52.8
## 53       88.8       30.7
## 54       88.5       31.6
## 55       91.9       38.8
## 56       90.4       37.2
## 57       90.9       58.5
## 58       85.5         31
## 59       84.4        Low
## 60       82.5        Low
## 61       89.1       38.9
## 62       92.3       52.3
## 63       94.1       51.9
## 64       92.2       34.1
## 65       83.9       42.3
## 66       90.1       34.6
## 67       89.1       33.7
## 68       89.3        Low
## 69       93.6       44.8
## 70       84.9        Low
## 71       93.2       47.3
## 72       89.9       40.9
## 73       90.0        Low
## 74       93.2       42.8
## 75       88.2       36.3
## 76       84.5        Low
## 77       91.5       46.2
## 78       88.3       31.3
## 79       85.5       32.7
## 80       83.4       38.2
## 81       89.1         41
## 82       93.1       43.7
## 83       91.7        Low
## 84       83.8        Low
## 85       86.2         33
## 86       88.0       32.7
## 87       70.5        Low
## 88       90.6       31.3
## 89       80.0       34.3
## 90       90.3       35.9
## 91       90.7       43.2
## 92       86.8       59.9
## 93       80.4        Low
```

```
## 94       89.8        34
## 95       87.4       47.1
## 96       89.0       33.3
## 97       89.5        43
## 98       92.4       49.2
## 99       88.1        31
## 100      90.0        38
## 101      90.5       35.6
## 102      89.7       Low
## 103      91.1       30.3
## 104      86.8       30.6
## 105      88.6       30.7
## 106      91.1       41.6
## 107      90.2       39.7
## 108      93.9       37.7
## 109      93.9       37.7
## 110      92.3       49.3
## 111      91.5       36.3
## 112      84.9       Low
## 113      93.7       47.3
## 114      82.6       Low
## 115      82.0       Low
## 116      86.7       37.3
## 117      87.4       Low
## 118      83.0       Low
## 119      93.7        50
## 120      77.6       Low
## 121      91.9       41.5
## 122      75.8       Low
## 123      88.6       44.1
## 124      79.8       Low
## 125      62.2       Low
## 126      85.9       34.1
## 127      84.9       Low
## 128      88.6       45.6
## 129      89.5       31.9
## 130      93.7       37.5
## 131      91.5       60.3
## 132      92.3       48.6
## 133      90.3       Low
## 134      92.0       Low
## 135      94.9       49.8
## 136      86.9       Low
```

```r
y <- unselect_field  # Arrange
z <- head (y)
arrange(z, RacesReported)
```

```
##               Id  Id2 PopGroupID POPGROUP.display.label RacesReported
HSDegree
```

```
## 1 0500000US01073 1073          1      Total population      660793
89.1
## 2 0500000US06019 6019          1      Total population      965974
73.6
## 3 0500000US04019 4019          1      Total population     1004516
88.0
## 4 0500000US06013 6013          1      Total population     1111339
88.8
## 5 0500000US06001 6001          1      Total population     1610921
86.9
## 6 0500000US04013 4013          1      Total population     4087191
86.8
##   BachDegree
## 1       30.5
## 2        Low
## 3       30.8
## 4       39.7
## 5       42.8
## 6       30.2
```

```r
# Using the purrr package - perform 2 functions on your dataset.  You could
use zip_n, keep, discard, compact, etc.

library(purrr)
```

```
##
## Attaching package: 'purrr'

## The following object is masked from 'package:magrittr':
##
##     set_names

## The following object is masked from 'package:plyr':
##
##     compact
```

```r
keep_HD_State = unselect_field[c("HSDegree")] #  Keep
keep_HD_State
```

```
##      HSDegree
## 1        89.1
## 2        86.8
## 3        88.0
## 4        86.9
## 5        88.8
## 6        73.6
## 7        74.5
## 8        77.5
## 9        84.6
## 10       80.6
## 11       86.8
```

```
## 12        78.6
## 13        86.6
## 14        88.1
## 15        77.6
## 16        88.1
## 17        87.4
## 18        87.6
## 19        78.4
## 20        83.6
## 21        91.9
## 22        85.5
## 23        92.8
## 24        94.1
## 25        89.8
## 26        89.3
## 27        89.5
## 28        90.1
## 29        90.2
## 30        91.6
## 31        88.4
## 32        89.0
## 33        87.3
## 34        86.3
## 35        80.9
## 36        87.9
## 37        87.7
## 38        90.1
## 39        84.9
## 40        88.9
## 41        90.3
## 42        88.4
## 43        91.3
## 44        88.0
## 45        91.8
## 46        85.5
## 47        92.3
## 48        82.9
## 49        90.3
## 50        90.7
## 51        85.0
## 52        95.5
## 53        88.8
## 54        88.5
## 55        91.9
## 56        90.4
## 57        90.9
## 58        85.5
## 59        84.4
## 60        82.5
## 61        89.1
```

```
## 62      92.3
## 63      94.1
## 64      92.2
## 65      83.9
## 66      90.1
## 67      89.1
## 68      89.3
## 69      93.6
## 70      84.9
## 71      93.2
## 72      89.9
## 73      90.0
## 74      93.2
## 75      88.2
## 76      84.5
## 77      91.5
## 78      88.3
## 79      85.5
## 80      83.4
## 81      89.1
## 82      93.1
## 83      91.7
## 84      83.8
## 85      86.2
## 86      88.0
## 87      70.5
## 88      90.6
## 89      80.0
## 90      90.3
## 91      90.7
## 92      86.8
## 93      80.4
## 94      89.8
## 95      87.4
## 96      89.0
## 97      89.5
## 98      92.4
## 99      88.1
## 100     90.0
## 101     90.5
## 102     89.7
## 103     91.1
## 104     86.8
## 105     88.6
## 106     91.1
## 107     90.2
## 108     93.9
## 109     93.9
## 110     92.3
## 111     91.5
```

```
## 112     84.9
## 113     93.7
## 114     82.6
## 115     82.0
## 116     86.7
## 117     87.4
## 118     83.0
## 119     93.7
## 120     77.6
## 121     91.9
## 122     75.8
## 123     88.6
## 124     79.8
## 125     62.2
## 126     85.9
## 127     84.9
## 128     88.6
## 129     89.5
## 130     93.7
## 131     91.5
## 132     92.3
## 133     90.3
## 134     92.0
## 135     94.9
## 136     86.9
```

```r
drop_HD_State = unselect_field[,!(names(unselect_field) %in%
c("BachDegree"))] # Drop
drop_HD_State
```

```
##                   Id   Id2 PopGroupID POPGROUP.display.label RacesReported
## 1    0500000US01073  1073          1       Total population        660793
## 2    0500000US04013  4013          1       Total population       4087191
## 3    0500000US04019  4019          1       Total population       1004516
## 4    0500000US06001  6001          1       Total population       1610921
## 5    0500000US06013  6013          1       Total population       1111339
## 6    0500000US06019  6019          1       Total population        965974
## 7    0500000US06029  6029          1       Total population        874589
## 8    0500000US06037  6037          1       Total population      10116705
## 9    0500000US06059  6059          1       Total population       3145515
## 10   0500000US06065  6065          1       Total population       2329271
## 11   0500000US06067  6067          1       Total population       1482026
## 12   0500000US06071  6071          1       Total population       2112619
## 13   0500000US06073  6073          1       Total population       3263431
## 14   0500000US06075  6075          1       Total population        852469
## 15   0500000US06077  6077          1       Total population        715597
## 16   0500000US06081  6081          1       Total population        758581
## 17   0500000US06085  6085          1       Total population       1894605
## 18   0500000US06097  6097          1       Total population        500292
## 19   0500000US06099  6099          1       Total population        531997
```

```
## 20   0500000US06111   6111       1       Total population      846178
## 21   0500000US08005   8005       1       Total population      618821
## 22   0500000US08031   8031       1       Total population      663862
## 23   0500000US08041   8041       1       Total population      663519
## 24   0500000US08059   8059       1       Total population      558503
## 25   0500000US09001   9001       1       Total population      945438
## 26   0500000US09003   9003       1       Total population      897985
## 27   0500000US09009   9009       1       Total population      861277
## 28   0500000US10003   10003      1       Total population      552778
## 29   0500000US11001   11001      1       Total population      658893
## 30   0500000US12009   12009      1       Total population      556885
## 31   0500000US12011   12011      1       Total population     1869235
## 32   0500000US12031   12031      1       Total population      897698
## 33   0500000US12057   12057      1       Total population     1316298
## 34   0500000US12071   12071      1       Total population      679513
## 35   0500000US12086   12086      1       Total population     2662874
## 36   0500000US12095   12095      1       Total population     1253001
## 37   0500000US12099   12099      1       Total population     1397710
## 38   0500000US12103   12103      1       Total population      938098
## 39   0500000US12105   12105      1       Total population      634638
## 40   0500000US12127   12127      1       Total population      507531
## 41   0500000US13067   13067      1       Total population      730981
## 42   0500000US13089   13089      1       Total population      722161
## 43   0500000US13121   13121      1       Total population      996319
## 44   0500000US13135   13135      1       Total population      877922
## 45   0500000US15003   15003      1       Total population      991788
## 46   0500000US17031   17031      1       Total population     5246456
## 47   0500000US17043   17043      1       Total population      932708
## 48   0500000US17089   17089      1       Total population      527306
## 49   0500000US17097   17097      1       Total population      705186
## 50   0500000US17197   17197      1       Total population      685419
## 51   0500000US18097   18097      1       Total population      934243
## 52   0500000US20091   20091      1       Total population      574272
## 53   0500000US20173   20173      1       Total population      508803
## 54   0500000US21111   21111      1       Total population      760026
## 55   0500000US24003   24003      1       Total population      560133
## 56   0500000US24005   24005      1       Total population      826925
## 57   0500000US24031   24031      1       Total population     1030447
## 58   0500000US24033   24033      1       Total population      904430
## 59   0500000US24510   24510      1       Total population      622793
## 60   0500000US25005   25005      1       Total population      554194
## 61   0500000US25009   25009      1       Total population      769091
## 62   0500000US25017   25017      1       Total population     1570315
## 63   0500000US25021   25021      1       Total population      692254
## 64   0500000US25023   25023      1       Total population      507022
## 65   0500000US25025   25025      1       Total population      767254
## 66   0500000US25027   25027      1       Total population      813475
## 67   0500000US26081   26081      1       Total population      629237
## 68   0500000US26099   26099      1       Total population      860112
## 69   0500000US26125   26125      1       Total population     1237868
```

```
## 70  0500000US26163 26163         1    Total population     1764804
## 71  0500000US27053 27053         1    Total population     1212064
## 72  0500000US27123 27123         1    Total population      532655
## 73  0500000US29095 29095         1    Total population      683191
## 74  0500000US29189 29189         1    Total population     1001876
## 75  0500000US31055 31055         1    Total population      543244
## 76  0500000US32003 32003         1    Total population     2069681
## 77  0500000US34003 34003         1    Total population      933572
## 78  0500000US34007 34007         1    Total population      511038
## 79  0500000US34013 34013         1    Total population      795723
## 80  0500000US34017 34017         1    Total population      669115
## 81  0500000US34023 34023         1    Total population      836297
## 82  0500000US34025 34025         1    Total population      629279
## 83  0500000US34029 34029         1    Total population      586301
## 84  0500000US34031 34031         1    Total population      508856
## 85  0500000US34039 34039         1    Total population      552939
## 86  0500000US35001 35001         1    Total population      675551
## 87  0500000US36005 36005         1    Total population     1438159
## 88  0500000US36029 36029         1    Total population      922835
## 89  0500000US36047 36047         1    Total population     2621793
## 90  0500000US36055 36055         1    Total population      749857
## 91  0500000US36059 36059         1    Total population     1358627
## 92  0500000US36061 36061         1    Total population     1636268
## 93  0500000US36081 36081         1    Total population     2321580
## 94  0500000US36103 36103         1    Total population     1502968
## 95  0500000US36119 36119         1    Total population      972634
## 96  0500000US37081 37081         1    Total population      512119
## 97  0500000US37119 37119         1    Total population     1012539
## 98  0500000US37183 37183         1    Total population      998691
## 99  0500000US39035 39035         1    Total population     1259828
## 100 0500000US39049 39049         1    Total population     1231393
## 101 0500000US39061 39061         1    Total population      806631
## 102 0500000US39113 39113         1    Total population      533116
## 103 0500000US39153 39153         1    Total population      541943
## 104 0500000US40109 40109         1    Total population      766215
## 105 0500000US40143 40143         1    Total population      629598
## 106 0500000US41051 41051         1    Total population      776712
## 107 0500000US41067 41067         1    Total population      562998
## 108 0500000US42003 42003         1    Total population     1231255
## 109 0500000US42017 42017         1    Total population      626685
## 110 0500000US42029 42029         1    Total population      512784
## 111 0500000US42045 42045         1    Total population      562960
## 112 0500000US42071 42071         1    Total population      533320
## 113 0500000US42091 42091         1    Total population      816857
## 114 0500000US42101 42101         1    Total population     1560297
## 115 0500000US44007 44007         1    Total population      631974
## 116 0500000US47037 47037         1    Total population      668347
## 117 0500000US47157 47157         1    Total population      938803
## 118 0500000US48029 48029         1    Total population     1855866
## 119 0500000US48085 48085         1    Total population      885241
```

```
## 120 0500000US48113 48113           1       Total population      2518638
## 121 0500000US48121 48121           1       Total population       753363
## 122 0500000US48141 48141           1       Total population       833487
## 123 0500000US48157 48157           1       Total population       685345
## 124 0500000US48201 48201           1       Total population      4441370
## 125 0500000US48215 48215           1       Total population       831073
## 126 0500000US48339 48339           1       Total population       518947
## 127 0500000US48439 48439           1       Total population      1945360
## 128 0500000US48453 48453           1       Total population      1151145
## 129 0500000US49035 49035           1       Total population      1091742
## 130 0500000US49049 49049           1       Total population       560974
## 131 0500000US51059 51059           1       Total population      1137538
## 132 0500000US53033 53033           1       Total population      2079967
## 133 0500000US53053 53053           1       Total population       831928
## 134 0500000US53061 53061           1       Total population       759583
## 135 0500000US55025 55025           1       Total population       516284
## 136 0500000US55079 55079           1       Total population       956406
##       HSDegree
## 1        89.1
## 2        86.8
## 3        88.0
## 4        86.9
## 5        88.8
## 6        73.6
## 7        74.5
## 8        77.5
## 9        84.6
## 10       80.6
## 11       86.8
## 12       78.6
## 13       86.6
## 14       88.1
## 15       77.6
## 16       88.1
## 17       87.4
## 18       87.6
## 19       78.4
## 20       83.6
## 21       91.9
## 22       85.5
## 23       92.8
## 24       94.1
## 25       89.8
## 26       89.3
## 27       89.5
## 28       90.1
## 29       90.2
## 30       91.6
## 31       88.4
## 32       89.0
```

```
## 33        87.3
## 34        86.3
## 35        80.9
## 36        87.9
## 37        87.7
## 38        90.1
## 39        84.9
## 40        88.9
## 41        90.3
## 42        88.4
## 43        91.3
## 44        88.0
## 45        91.8
## 46        85.5
## 47        92.3
## 48        82.9
## 49        90.3
## 50        90.7
## 51        85.0
## 52        95.5
## 53        88.8
## 54        88.5
## 55        91.9
## 56        90.4
## 57        90.9
## 58        85.5
## 59        84.4
## 60        82.5
## 61        89.1
## 62        92.3
## 63        94.1
## 64        92.2
## 65        83.9
## 66        90.1
## 67        89.1
## 68        89.3
## 69        93.6
## 70        84.9
## 71        93.2
## 72        89.9
## 73        90.0
## 74        93.2
## 75        88.2
## 76        84.5
## 77        91.5
## 78        88.3
## 79        85.5
## 80        83.4
## 81        89.1
## 82        93.1
```

```
## 83       91.7
## 84       83.8
## 85       86.2
## 86       88.0
## 87       70.5
## 88       90.6
## 89       80.0
## 90       90.3
## 91       90.7
## 92       86.8
## 93       80.4
## 94       89.8
## 95       87.4
## 96       89.0
## 97       89.5
## 98       92.4
## 99       88.1
## 100      90.0
## 101      90.5
## 102      89.7
## 103      91.1
## 104      86.8
## 105      88.6
## 106      91.1
## 107      90.2
## 108      93.9
## 109      93.9
## 110      92.3
## 111      91.5
## 112      84.9
## 113      93.7
## 114      82.6
## 115      82.0
## 116      86.7
## 117      87.4
## 118      83.0
## 119      93.7
## 120      77.6
## 121      91.9
## 122      75.8
## 123      88.6
## 124      79.8
## 125      62.2
## 126      85.9
## 127      84.9
## 128      88.6
## 129      89.5
## 130      93.7
## 131      91.5
## 132      92.3
```

```
## 133        90.3
## 134        92.0
## 135        94.9
## 136        86.9
```

```
# Split a string, then concatenate the results back together

library(stringr)  # Split a String and concatenate

geo<- c(ac_survey$Geography)

geo_split <- strsplit(geo,split = ",")
geo_split
```

```
## [[1]]
## [1] "Jefferson County" " Alabama"
##
## [[2]]
## [1] "Maricopa County" " Arizona"
##
## [[3]]
## [1] "Pima County" " Arizona"
##
## [[4]]
## [1] "Alameda County" " California"
##
## [[5]]
## [1] "Contra Costa County" " California"
##
## [[6]]
## [1] "Fresno County" " California"
##
## [[7]]
## [1] "Kern County" " California"
##
## [[8]]
## [1] "Los Angeles County" " California"
##
## [[9]]
## [1] "Orange County" " California"
##
## [[10]]
## [1] "Riverside County" " California"
##
## [[11]]
## [1] "Sacramento County" " California"
##
## [[12]]
## [1] "San Bernardino County" " California"
##
```

```
## [[13]]
## [1] "San Diego County" " California"
##
## [[14]]
## [1] "San Francisco County" " California"
##
## [[15]]
## [1] "San Joaquin County" " California"
##
## [[16]]
## [1] "San Mateo County" " California"
##
## [[17]]
## [1] "Santa Clara County" " California"
##
## [[18]]
## [1] "Sonoma County" " California"
##
## [[19]]
## [1] "Stanislaus County" " California"
##
## [[20]]
## [1] "Ventura County" " California"
##
## [[21]]
## [1] "Arapahoe County" " Colorado"
##
## [[22]]
## [1] "Denver County" " Colorado"
##
## [[23]]
## [1] "El Paso County" " Colorado"
##
## [[24]]
## [1] "Jefferson County" " Colorado"
##
## [[25]]
## [1] "Fairfield County" " Connecticut"
##
## [[26]]
## [1] "Hartford County" " Connecticut"
##
## [[27]]
## [1] "New Haven County" " Connecticut"
##
## [[28]]
## [1] "New Castle County" " Delaware"
##
## [[29]]
## [1] "District of Columbia"  " District of Columbia"
```

```
## 
## [[30]]
## [1] "Brevard County" " Florida"
## 
## [[31]]
## [1] "Broward County" " Florida"
## 
## [[32]]
## [1] "Duval County" " Florida"
## 
## [[33]]
## [1] "Hillsborough County" " Florida"
## 
## [[34]]
## [1] "Lee County" " Florida"
## 
## [[35]]
## [1] "Miami-Dade County" " Florida"
## 
## [[36]]
## [1] "Orange County" " Florida"
## 
## [[37]]
## [1] "Palm Beach County" " Florida"
## 
## [[38]]
## [1] "Pinellas County" " Florida"
## 
## [[39]]
## [1] "Polk County" " Florida"
## 
## [[40]]
## [1] "Volusia County" " Florida"
## 
## [[41]]
## [1] "Cobb County" " Georgia"
## 
## [[42]]
## [1] "DeKalb County" " Georgia"
## 
## [[43]]
## [1] "Fulton County" " Georgia"
## 
## [[44]]
## [1] "Gwinnett County" " Georgia"
## 
## [[45]]
## [1] "Honolulu County" " Hawaii"
## 
## [[46]]
```

```
## [1] "Cook County" " Illinois"
##
## [[47]]
## [1] "DuPage County" " Illinois"
##
## [[48]]
## [1] "Kane County" " Illinois"
##
## [[49]]
## [1] "Lake County" " Illinois"
##
## [[50]]
## [1] "Will County" " Illinois"
##
## [[51]]
## [1] "Marion County" " Indiana"
##
## [[52]]
## [1] "Johnson County" " Kansas"
##
## [[53]]
## [1] "Sedgwick County" " Kansas"
##
## [[54]]
## [1] "Jefferson County" " Kentucky"
##
## [[55]]
## [1] "Anne Arundel County" " Maryland"
##
## [[56]]
## [1] "Baltimore County" " Maryland"
##
## [[57]]
## [1] "Montgomery County" " Maryland"
##
## [[58]]
## [1] "Prince George's County" " Maryland"
##
## [[59]]
## [1] "Baltimore city" " Maryland"
##
## [[60]]
## [1] "Bristol County" " Massachusetts"
##
## [[61]]
## [1] "Essex County"   " Massachusetts"
##
## [[62]]
## [1] "Middlesex County" " Massachusetts"
##
```

```
## [[63]]
## [1] "Norfolk County" " Massachusetts"
##
## [[64]]
## [1] "Plymouth County" " Massachusetts"
##
## [[65]]
## [1] "Suffolk County" " Massachusetts"
##
## [[66]]
## [1] "Worcester County" " Massachusetts"
##
## [[67]]
## [1] "Kent County" " Michigan"
##
## [[68]]
## [1] "Macomb County" " Michigan"
##
## [[69]]
## [1] "Oakland County" " Michigan"
##
## [[70]]
## [1] "Wayne County" " Michigan"
##
## [[71]]
## [1] "Hennepin County" " Minnesota"
##
## [[72]]
## [1] "Ramsey County" " Minnesota"
##
## [[73]]
## [1] "Jackson County" " Missouri"
##
## [[74]]
## [1] "St. Louis County" " Missouri"
##
## [[75]]
## [1] "Douglas County" " Nebraska"
##
## [[76]]
## [1] "Clark County" " Nevada"
##
## [[77]]
## [1] "Bergen County" " New Jersey"
##
## [[78]]
## [1] "Camden County" " New Jersey"
##
## [[79]]
## [1] "Essex County" " New Jersey"
```

```
## 
## [[80]]
## [1] "Hudson County" " New Jersey"
## 
## [[81]]
## [1] "Middlesex County" " New Jersey"
## 
## [[82]]
## [1] "Monmouth County" " New Jersey"
## 
## [[83]]
## [1] "Ocean County" " New Jersey"
## 
## [[84]]
## [1] "Passaic County" " New Jersey"
## 
## [[85]]
## [1] "Union County" " New Jersey"
## 
## [[86]]
## [1] "Bernalillo County" " New Mexico"
## 
## [[87]]
## [1] "Bronx County" " New York"
## 
## [[88]]
## [1] "Erie County" " New York"
## 
## [[89]]
## [1] "Kings County" " New York"
## 
## [[90]]
## [1] "Monroe County" " New York"
## 
## [[91]]
## [1] "Nassau County" " New York"
## 
## [[92]]
## [1] "New York County" " New York"
## 
## [[93]]
## [1] "Queens County" " New York"
## 
## [[94]]
## [1] "Suffolk County" " New York"
## 
## [[95]]
## [1] "Westchester County" " New York"
## 
## [[96]]
```

```
## [1] "Guilford County"  " North Carolina"
##
## [[97]]
## [1] "Mecklenburg County" " North Carolina"
##
## [[98]]
## [1] "Wake County"      " North Carolina"
##
## [[99]]
## [1] "Cuyahoga County" " Ohio"
##
## [[100]]
## [1] "Franklin County" " Ohio"
##
## [[101]]
## [1] "Hamilton County" " Ohio"
##
## [[102]]
## [1] "Montgomery County" " Ohio"
##
## [[103]]
## [1] "Summit County" " Ohio"
##
## [[104]]
## [1] "Oklahoma County" " Oklahoma"
##
## [[105]]
## [1] "Tulsa County" " Oklahoma"
##
## [[106]]
## [1] "Multnomah County" " Oregon"
##
## [[107]]
## [1] "Washington County" " Oregon"
##
## [[108]]
## [1] "Allegheny County" " Pennsylvania"
##
## [[109]]
## [1] "Bucks County"   " Pennsylvania"
##
## [[110]]
## [1] "Chester County" " Pennsylvania"
##
## [[111]]
## [1] "Delaware County" " Pennsylvania"
##
## [[112]]
## [1] "Lancaster County" " Pennsylvania"
##
```

```
## [[113]]
## [1] "Montgomery County" " Pennsylvania"
##
## [[114]]
## [1] "Philadelphia County" " Pennsylvania"
##
## [[115]]
## [1] "Providence County" " Rhode Island"
##
## [[116]]
## [1] "Davidson County" " Tennessee"
##
## [[117]]
## [1] "Shelby County" " Tennessee"
##
## [[118]]
## [1] "Bexar County" " Texas"
##
## [[119]]
## [1] "Collin County" " Texas"
##
## [[120]]
## [1] "Dallas County" " Texas"
##
## [[121]]
## [1] "Denton County" " Texas"
##
## [[122]]
## [1] "El Paso County" " Texas"
##
## [[123]]
## [1] "Fort Bend County" " Texas"
##
## [[124]]
## [1] "Harris County" " Texas"
##
## [[125]]
## [1] "Hidalgo County" " Texas"
##
## [[126]]
## [1] "Montgomery County" " Texas"
##
## [[127]]
## [1] "Tarrant County" " Texas"
##
## [[128]]
## [1] "Travis County" " Texas"
##
## [[129]]
## [1] "Salt Lake County" " Utah"
```

```
## 
## [[130]]
## [1] "Utah County" " Utah"
## 
## [[131]]
## [1] "Fairfax County" " Virginia"
## 
## [[132]]
## [1] "King County" " Washington"
## 
## [[133]]
## [1] "Pierce County" " Washington"
## 
## [[134]]
## [1] "Snohomish County" " Washington"
## 
## [[135]]
## [1] "Dane County" " Wisconsin"
## 
## [[136]]
## [1] "Milwaukee County" " Wisconsin"
```

```
Id2<- c(ac_survey$Id2)
combined_fields <- c(geo,Id2)
combined_fields
```

```
##   [1] "Jefferson County, Alabama"
##   [2] "Maricopa County, Arizona"
##   [3] "Pima County, Arizona"
##   [4] "Alameda County, California"
##   [5] "Contra Costa County, California"
##   [6] "Fresno County, California"
##   [7] "Kern County, California"
##   [8] "Los Angeles County, California"
##   [9] "Orange County, California"
##  [10] "Riverside County, California"
##  [11] "Sacramento County, California"
##  [12] "San Bernardino County, California"
##  [13] "San Diego County, California"
##  [14] "San Francisco County, California"
##  [15] "San Joaquin County, California"
##  [16] "San Mateo County, California"
##  [17] "Santa Clara County, California"
##  [18] "Sonoma County, California"
##  [19] "Stanislaus County, California"
##  [20] "Ventura County, California"
##  [21] "Arapahoe County, Colorado"
##  [22] "Denver County, Colorado"
##  [23] "El Paso County, Colorado"
##  [24] "Jefferson County, Colorado"
```

```
##  [25] "Fairfield County, Connecticut"
##  [26] "Hartford County, Connecticut"
##  [27] "New Haven County, Connecticut"
##  [28] "New Castle County, Delaware"
##  [29] "District of Columbia, District of Columbia"
##  [30] "Brevard County, Florida"
##  [31] "Broward County, Florida"
##  [32] "Duval County, Florida"
##  [33] "Hillsborough County, Florida"
##  [34] "Lee County, Florida"
##  [35] "Miami-Dade County, Florida"
##  [36] "Orange County, Florida"
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##  [38] "Pinellas County, Florida"
##  [39] "Polk County, Florida"
##  [40] "Volusia County, Florida"
##  [41] "Cobb County, Georgia"
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##  [45] "Honolulu County, Hawaii"
##  [46] "Cook County, Illinois"
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##  [50] "Will County, Illinois"
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##  [53] "Sedgwick County, Kansas"
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##  [55] "Anne Arundel County, Maryland"
##  [56] "Baltimore County, Maryland"
##  [57] "Montgomery County, Maryland"
##  [58] "Prince George's County, Maryland"
##  [59] "Baltimore city, Maryland"
##  [60] "Bristol County, Massachusetts"
##  [61] "Essex County, Massachusetts"
##  [62] "Middlesex County, Massachusetts"
##  [63] "Norfolk County, Massachusetts"
##  [64] "Plymouth County, Massachusetts"
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##  [66] "Worcester County, Massachusetts"
##  [67] "Kent County, Michigan"
##  [68] "Macomb County, Michigan"
##  [69] "Oakland County, Michigan"
##  [70] "Wayne County, Michigan"
##  [71] "Hennepin County, Minnesota"
##  [72] "Ramsey County, Minnesota"
##  [73] "Jackson County, Missouri"
##  [74] "St. Louis County, Missouri"
```

```
##  [75] "Douglas County, Nebraska"
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##  [77] "Bergen County, New Jersey"
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##  [85] "Union County, New Jersey"
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##  [91] "Nassau County, New York"
##  [92] "New York County, New York"
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##  [94] "Suffolk County, New York"
##  [95] "Westchester County, New York"
##  [96] "Guilford County, North Carolina"
##  [97] "Mecklenburg County, North Carolina"
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##  [99] "Cuyahoga County, Ohio"
## [100] "Franklin County, Ohio"
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## [103] "Summit County, Ohio"
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## [105] "Tulsa County, Oklahoma"
## [106] "Multnomah County, Oregon"
## [107] "Washington County, Oregon"
## [108] "Allegheny County, Pennsylvania"
## [109] "Bucks County, Pennsylvania"
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## [111] "Delaware County, Pennsylvania"
## [112] "Lancaster County, Pennsylvania"
## [113] "Montgomery County, Pennsylvania"
## [114] "Philadelphia County, Pennsylvania"
## [115] "Providence County, Rhode Island"
## [116] "Davidson County, Tennessee"
## [117] "Shelby County, Tennessee"
## [118] "Bexar County, Texas"
## [119] "Collin County, Texas"
## [120] "Dallas County, Texas"
## [121] "Denton County, Texas"
## [122] "El Paso County, Texas"
## [123] "Fort Bend County, Texas"
## [124] "Harris County, Texas"
```

```
## [125] "Hidalgo County, Texas"
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## [129] "Salt Lake County, Utah"
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## [135] "Dane County, Wisconsin"
## [136] "Milwaukee County, Wisconsin"
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## [139] "4019"
## [140] "6001"
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## [142] "6019"
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## [151] "6077"
## [152] "6081"
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## [162] "9003"
## [163] "9009"
## [164] "10003"
## [165] "11001"
## [166] "12009"
## [167] "12011"
## [168] "12031"
## [169] "12057"
## [170] "12071"
## [171] "12086"
## [172] "12095"
## [173] "12099"
## [174] "12103"
```

```
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```
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## [241] "40143"
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## [244] "42003"
## [245] "42017"
## [246] "42029"
## [247] "42045"
## [248] "42071"
## [249] "42091"
## [250] "42101"
## [251] "44007"
## [252] "47037"
## [253] "47157"
## [254] "48029"
## [255] "48085"
## [256] "48113"
## [257] "48121"
## [258] "48141"
## [259] "48157"
## [260] "48201"
## [261] "48215"
## [262] "48339"
## [263] "48439"
## [264] "48453"
## [265] "49035"
## [266] "49049"
## [267] "51059"
## [268] "53033"
## [269] "53053"
## [270] "53061"
## [271] "55025"
## [272] "55079"
```

```r
# Use the cbind and rbind function on your dataset
geo_Matrix <- data.frame(Reduce(rbind, geo_split,)) # rbind
names(geo_Matrix) <- c("County Name", "State")
geo_Matrix
```

```
##                      County Name                State
## init          Jefferson County              Alabama
## X              Maricopa County              Arizona
## X.1                Pima County              Arizona
## X.2             Alameda County           California
## X.3        Contra Costa County           California
## X.4              Fresno County           California
## X.5                Kern County           California
## X.6         Los Angeles County           California
## X.7              Orange County           California
## X.8           Riverside County           California
## X.9          Sacramento County           California
## X.10   San Bernardino County           California
## X.11         San Diego County           California
## X.12     San Francisco County           California
## X.13       San Joaquin County           California
## X.14         San Mateo County           California
## X.15       Santa Clara County           California
## X.16            Sonoma County           California
## X.17         Stanislaus County           California
## X.18            Ventura County           California
## X.19           Arapahoe County             Colorado
## X.20             Denver County             Colorado
## X.21            El Paso County             Colorado
## X.22          Jefferson County             Colorado
## X.23          Fairfield County          Connecticut
## X.24           Hartford County          Connecticut
## X.25          New Haven County          Connecticut
## X.26         New Castle County             Delaware
## X.27   District of Columbia  District of Columbia
## X.28            Brevard County              Florida
## X.29            Broward County              Florida
## X.30              Duval County              Florida
## X.31       Hillsborough County              Florida
## X.32                Lee County              Florida
## X.33         Miami-Dade County              Florida
## X.34             Orange County              Florida
## X.35         Palm Beach County              Florida
## X.36           Pinellas County              Florida
## X.37               Polk County              Florida
## X.38            Volusia County              Florida
## X.39               Cobb County              Georgia
## X.40             DeKalb County              Georgia
## X.41             Fulton County              Georgia
## X.42           Gwinnett County              Georgia
```

```
## X.43         Honolulu County          Hawaii
## X.44            Cook County          Illinois
## X.45          DuPage County          Illinois
## X.46            Kane County          Illinois
## X.47            Lake County          Illinois
## X.48            Will County          Illinois
## X.49          Marion County           Indiana
## X.50         Johnson County            Kansas
## X.51        Sedgwick County            Kansas
## X.52       Jefferson County          Kentucky
## X.53    Anne Arundel County          Maryland
## X.54       Baltimore County          Maryland
## X.55      Montgomery County          Maryland
## X.56 Prince George's County          Maryland
## X.57         Baltimore city          Maryland
## X.58         Bristol County     Massachusetts
## X.59           Essex County     Massachusetts
## X.60       Middlesex County     Massachusetts
## X.61         Norfolk County     Massachusetts
## X.62        Plymouth County     Massachusetts
## X.63         Suffolk County     Massachusetts
## X.64       Worcester County     Massachusetts
## X.65            Kent County          Michigan
## X.66          Macomb County          Michigan
## X.67         Oakland County          Michigan
## X.68           Wayne County          Michigan
## X.69         Hennepin County         Minnesota
## X.70          Ramsey County         Minnesota
## X.71         Jackson County          Missouri
## X.72       St. Louis County          Missouri
## X.73         Douglas County          Nebraska
## X.74           Clark County            Nevada
## X.75          Bergen County        New Jersey
## X.76          Camden County        New Jersey
## X.77           Essex County        New Jersey
## X.78          Hudson County        New Jersey
## X.79       Middlesex County        New Jersey
## X.80        Monmouth County        New Jersey
## X.81           Ocean County        New Jersey
## X.82         Passaic County        New Jersey
## X.83           Union County        New Jersey
## X.84      Bernalillo County        New Mexico
## X.85           Bronx County          New York
## X.86            Erie County          New York
## X.87           Kings County          New York
## X.88          Monroe County          New York
## X.89          Nassau County          New York
## X.90        New York County          New York
## X.91          Queens County          New York
## X.92         Suffolk County          New York
```

```
## X.93         Westchester County           New York
## X.94          Guilford County      North Carolina
## X.95       Mecklenburg County      North Carolina
## X.96             Wake County       North Carolina
## X.97         Cuyahoga County                 Ohio
## X.98         Franklin County                 Ohio
## X.99         Hamilton County                 Ohio
## X.100      Montgomery County                 Ohio
## X.101         Summit County                  Ohio
## X.102        Oklahoma County             Oklahoma
## X.103          Tulsa County              Oklahoma
## X.104       Multnomah County               Oregon
## X.105      Washington County               Oregon
## X.106       Allegheny County         Pennsylvania
## X.107          Bucks County          Pennsylvania
## X.108         Chester County         Pennsylvania
## X.109        Delaware County         Pennsylvania
## X.110       Lancaster County         Pennsylvania
## X.111      Montgomery County         Pennsylvania
## X.112     Philadelphia County        Pennsylvania
## X.113      Providence County         Rhode Island
## X.114        Davidson County            Tennessee
## X.115         Shelby County             Tennessee
## X.116          Bexar County                 Texas
## X.117         Collin County                 Texas
## X.118         Dallas County                 Texas
## X.119         Denton County                 Texas
## X.120        El Paso County                 Texas
## X.121      Fort Bend County                 Texas
## X.122         Harris County                 Texas
## X.123        Hidalgo County                 Texas
## X.124      Montgomery County                Texas
## X.125        Tarrant County                 Texas
## X.126         Travis County                 Texas
## X.127      Salt Lake County                  Utah
## X.128           Utah County                  Utah
## X.129        Fairfax County              Virginia
## X.130           King County            Washington
## X.131         Pierce County            Washington
## X.132       Snohomish County           Washington
## X.133           Dane County             Wisconsin
## X.134       Milwaukee County            Wisconsin
```

cbind

```
final_data <- cbind(Id2, keep_HD_State)
final_data

##       Id2 HSDegree
## 1    1073     89.1
```

```
## 2      4013      86.8
## 3      4019      88.0
## 4      6001      86.9
## 5      6013      88.8
## 6      6019      73.6
## 7      6029      74.5
## 8      6037      77.5
## 9      6059      84.6
## 10     6065      80.6
## 11     6067      86.8
## 12     6071      78.6
## 13     6073      86.6
## 14     6075      88.1
## 15     6077      77.6
## 16     6081      88.1
## 17     6085      87.4
## 18     6097      87.6
## 19     6099      78.4
## 20     6111      83.6
## 21     8005      91.9
## 22     8031      85.5
## 23     8041      92.8
## 24     8059      94.1
## 25     9001      89.8
## 26     9003      89.3
## 27     9009      89.5
## 28    10003      90.1
## 29    11001      90.2
## 30    12009      91.6
## 31    12011      88.4
## 32    12031      89.0
## 33    12057      87.3
## 34    12071      86.3
## 35    12086      80.9
## 36    12095      87.9
## 37    12099      87.7
## 38    12103      90.1
## 39    12105      84.9
## 40    12127      88.9
## 41    13067      90.3
## 42    13089      88.4
## 43    13121      91.3
## 44    13135      88.0
## 45    15003      91.8
## 46    17031      85.5
## 47    17043      92.3
## 48    17089      82.9
## 49    17097      90.3
## 50    17197      90.7
## 51    18097      85.0
```

```
## 52  20091    95.5
## 53  20173    88.8
## 54  21111    88.5
## 55  24003    91.9
## 56  24005    90.4
## 57  24031    90.9
## 58  24033    85.5
## 59  24510    84.4
## 60  25005    82.5
## 61  25009    89.1
## 62  25017    92.3
## 63  25021    94.1
## 64  25023    92.2
## 65  25025    83.9
## 66  25027    90.1
## 67  26081    89.1
## 68  26099    89.3
## 69  26125    93.6
## 70  26163    84.9
## 71  27053    93.2
## 72  27123    89.9
## 73  29095    90.0
## 74  29189    93.2
## 75  31055    88.2
## 76  32003    84.5
## 77  34003    91.5
## 78  34007    88.3
## 79  34013    85.5
## 80  34017    83.4
## 81  34023    89.1
## 82  34025    93.1
## 83  34029    91.7
## 84  34031    83.8
## 85  34039    86.2
## 86  35001    88.0
## 87  36005    70.5
## 88  36029    90.6
## 89  36047    80.0
## 90  36055    90.3
## 91  36059    90.7
## 92  36061    86.8
## 93  36081    80.4
## 94  36103    89.8
## 95  36119    87.4
## 96  37081    89.0
## 97  37119    89.5
## 98  37183    92.4
## 99  39035    88.1
## 100 39049    90.0
## 101 39061    90.5
```

```
## 102 39113      89.7
## 103 39153      91.1
## 104 40109      86.8
## 105 40143      88.6
## 106 41051      91.1
## 107 41067      90.2
## 108 42003      93.9
## 109 42017      93.9
## 110 42029      92.3
## 111 42045      91.5
## 112 42071      84.9
## 113 42091      93.7
## 114 42101      82.6
## 115 44007      82.0
## 116 47037      86.7
## 117 47157      87.4
## 118 48029      83.0
## 119 48085      93.7
## 120 48113      77.6
## 121 48121      91.9
## 122 48141      75.8
## 123 48157      88.6
## 124 48201      79.8
## 125 48215      62.2
## 126 48339      85.9
## 127 48439      84.9
## 128 48453      88.6
## 129 49035      89.5
## 130 49049      93.7
## 131 51059      91.5
## 132 53033      92.3
## 133 53053      90.3
## 134 53061      92.0
## 135 55025      94.9
## 136 55079      86.9
```