# Governance Analytics Final Project

Alex Woodward 3/6/2018

## Governance Analytics Final Project - Alex Woodward

## **Executive Summary:**

Here I will add a description for the executive summary. xx

## Getting the Data

Explain the data and where it came from.

```
# Libraries
library(readxl)
# This is the link to the first dataset. Washington State School District Graduation and Drop Out Rates
temp = tempfile(fileext = ".xlsx")
dataURL <- "https://github.com/awood59/PROJECT/raw/master/DropOut.xlsx"</pre>
download.file(dataURL, destfile=temp, mode='wb')
# now get it:
DropOut = read_excel(temp, sheet =1)
## Warning in strptime(x, format, tz = tz): unknown timezone 'zone/tz/2018c.
## 1.0/zoneinfo/America/Los_Angeles'
head(DropOut,2)
## # A tibble: 2 x 3
     `District Code` `Adjusted 5-Year Cohort Graduation ~ `Cohort dropout ra~
##
     <chr>
                     <chr>
                                                           <chr>>
## 1 14005
                     77.685950413223139
                                                           16.528925619834713
## 2 21226
                     91.111111111111114
                                                           8.888888888888893
Now I will retrieve a second data file with information about Washington State Enrollment Statistics.
temp = tempfile(fileext = ".xlsx")
dataURL <- "https://github.com/awood59/PROJECT/raw/master/EnrollmentWA.xlsx"
download.file(dataURL, destfile=temp, mode='wb')
EnrollmentWA = read_excel(temp, sheet =1)
head(EnrollmentWA,2)
## # A tibble: 2 x 20
##
     `School Year` State `District Code` `District Name`
                                                                   `K-12 Total`
             <dbl> <chr> <chr>
##
                                                                          <dbl>
                                          Aberdeen School Distri~
## 1
             2015. WA
                       14005
                                                                          3221.
             2015. WA
                         21226
                                         Adna School District
## # ... with 15 more variables: `PK Total` <dbl>, `Full K Total` <dbl>,
```

`Half K Total` <dbl>, `Gr 1 Total` <dbl>, `Gr 2 Total` <dbl>, `Gr 3

```
## # Total` <dbl>, `Gr 4 Total` <dbl>, `Gr 5 Total` <dbl>, `Gr 6
## # Total` <dbl>, `Gr 7 Total` <dbl>, `Gr 8 Total` <dbl>, `Gr 9
## # Total` <dbl>, `Gr 10 Total` <dbl>, `Gr 11 Total` <dbl>, `Gr 12
## # Total` <dbl>
```

Finally, one last data file. This is a file with financial statistics per school district. I will clean this data as the district names are coded with an attached number, which I need to remove before merging with the other files. In the end, I cleaned the file with Excel, but I will include information for cleaning via R below.

```
temp = tempfile(fileext = ".xlsx")
dataURL <- "https://github.com/awood59/PROJECT/raw/master/WAFinance1.xlsx"
download.file(dataURL, destfile=temp, mode='wb')
WAFinance1 = read_excel(temp, sheet =1)
head(WAFinance1,2)
## # A tibble: 2 x 6
                                        Year 'Total Revenue' 'State Revenue'
##
     State
                `District Name`
##
     <chr>
                <chr>
## 1 Washington Benge School District 2015.
                                                        391.
                                                                         314.
## 2 Washington Lind School District
                                                       4267.
                                                                        2946.
## # ... with 1 more variable: `Local Revenue` <dbl>
```

### **Data Cleaning**

For the purpose of data cleaning, first download the origingal data file. This data file has a school district column that includes numbers. In order to merge the datasets, the data is cleaned to remove the numbers from the column.

```
dataLink='https://raw.githubusercontent.com/awood59/data/gh-pages/SchoolFinanceEdit.csv'
```

```
# Now read the data.
theData=read.csv(dataLink,stringsAsFactors = F,strip.white = T)

# Check the names of the columns.
names(theData)

## [1] "STATE" "NAME" "YRDATA" "TOTALREV" "TFEDREV" "TSTREV"

## [7] "TLOCREV" "TOTALEXP" "TCURELSC" "TCURINST" "TCURSSVC" "TCUROTH"

## [13] "NONELSEC" "TCAPOUT"
```

Now let's view the data counts per state.

#### table(theData\$STATE)

| ## |             |            |                      |
|----|-------------|------------|----------------------|
| ## | Alabama     | Alaska     | Arizona              |
| ## | 134         | 53         | 237                  |
| ## | Arkansas    | California | Colorado             |
| ## | 251         | 1057       | 196                  |
| ## | Connecticut | Delaware   | District of Columbia |
| ## | 174         | 19         | 1                    |
| ## | Florida     | Georgia    | Hawaii               |
| ## | 67          | 196        | 1                    |
| ## | Idaho       | Illinois   | Indiana              |
| ## | 116         | 992        | 313                  |
| ## | Iowa        | Kansas     | Kentucky             |
| ## | 347         | 286        | 173                  |

| ## | Louisiana      | Maine          | Maryland      |
|----|----------------|----------------|---------------|
| ## | 70             | 247            | 24            |
| ## | Massachusetts  | Michigan       | Minnesota     |
| ## | 323            | 601            | 391           |
| ## | Mississippi    | Missouri       | Montana       |
| ## | 146            | 520            | 432           |
| ## | Nebraska       | Nevada         | New Hampshire |
| ## | 262            | 17             | 175           |
| ## | New Jersey     | New Mexico     | New York      |
| ## | 588            | 89             | 682           |
| ## | North Carolina | North Dakota   | Ohio          |
| ## | 115            | 204            | 733           |
| ## | Oklahoma       | Oregon         | Pennsylvania  |
| ## | 522            | 216            | 596           |
| ## | Rhode Island   | South Carolina | South Dakota  |
| ## | 40             | 89             | 159           |
| ## | Tennessee      | Texas          | Utah          |
| ## | 142            | 1046           | 41            |
| ## | Vermont        | Virginia       | Washington    |
| ## | 318            | 133            | 304           |
| ## | West Virginia  | Wisconsin      | Wyoming       |
| ## | 63             | 427            | 48            |
|    |                |                |               |

Now we remove data that isn't from Washington.

```
WAData=theData[theData$STATE=='Washington',]
row.names(WAData)=NULL
```

Now we can look at the Washington names.

#### WAData\$NAME

```
##
     [1] "BENGE SCHOOL DISTRICT 122"
     [2] "LIND SCHOOL DISTRICT 158"
##
     [3] "OTHELLO SCHOOL DISTRICT 147 163-55"
##
     [4] "RITZVILLE SCHOOL DISTRICT 160-67"
##
##
     [5] "WASHTUCNA SCHOOL DISTRICT 109-43"
     [6] "ASOTIN ANATONE SCHOOL DISTRICT 420"
##
     [7] "CLARKSTON SCHOOL DISTRICT J250-185"
##
     [8] "KENNEWICK SCHOOL DISTRICT 17"
##
     [9] "KIONA BENTON SCHOOL DISTRICT 52"
##
    [10] "PATERSON SCHOOL DISTRICT 50"
##
    [11] "PROSSER SCHOOL DISTRICT 116"
##
    [12] "RICHLAND SCHOOL DISTRICT 400"
    [13] "FINLEY SCHOOL DISTRICT 53"
    [14] "CASHMERE SCHOOL DISTRICT 222"
##
    [15] "LAKE CHELAN SCH DIST 129"
##
   [16] "ENTIAT SCHOOL DISTRICT 127"
   [17] "MANSON SCHOOL DISTRICT 19"
    [18] "CASCADE SCHOOL DISTRICT 228"
##
    [19] "STEHEKIN SCHOOL DISTRICT 69"
##
   [20] "WENATCHEE SCHOOL DISTRICT 246"
##
##
   [21] "NORTH CENTRAL EDUCATIONAL SERVICE DISTRICT"
##
    [22] "CAPE FLATTERY SCHOOL DISTRICT 401"
##
   [23] "CRESCENT SCHOOL DISTRICT 313"
  [24] "PORT ANGELES SCHOOL DISTRICT 121"
```

```
## [25] "QUILLAYUTE VALLEY SCHOOL DISTRICT"
```

- ## [26] "SEQUIM SCHOOL DISTRICT 323"
- ## [27] "BATTLE GROUND SCHOOL DISTRICT 119"
- ## [28] "CAMAS SCHOOL DISTRICT 117"
- ## [29] "EVERGREEN SCHOOL DISTRICT 114"
- ## [30] "GREEN MOUNTAIN SCHOOL DISTRICT 103"
- ## [31] "HOCKINSON SCHOOL DISTRICT 98"
- ## [32] "LA CENTER SCHOOL DISTRICT 101"
- ## [33] "RIDGEFIELD SCHOOL DISTRICT 122"
- ## [34] "VANCOUVER SCHOOL DISTRICT 37"
- ## [35] "WASHOUGAL SCHOOL DISTRICT 112-6"
- "" [00] WASHOOGHE SONOOL SISTEMIOT TIZ O
- ## [36] "EDUCATIONAL SERVICE DISTRICT 112"
- ## [37] "DAYTON SCHOOL DISTRICT 2"
- ## [38] "STARBUCK SCHOOL DISTRICT 35"
- ## [39] "CASTLE ROCK SCHOOL DISTRICT 401"
- ## [40] "KALAMA SCHOOL DISTRICT 402"
- ## [41] "KELSO SCHOOL DISTRICT 458"
- ## [42] "LONGVIEW SCHOOL DISTRICT 122"
- ## [43] "TOUTLE LAKE SCHOOL DISTRICT 130"
- ## [44] "WOODLAND SCHOOL DISTRICT 404"
- ## [45] "BRIDGEPORT SCHOOL DISTRICT 75"
- ## [46] "EASTMONT SCHOOL DISTRICT 206"
- ## [47] "MANSFIELD SCHOOL DISTRICT 207"
- ## [48] "ORONDO SCHOOL DISTRICT 13"
- ## [49] "PALISADES SCHOOL DISTRICT 102"
- ## [50] "WATERVILLE SCHOOL DISTRICT 209"
- ## [51] "CURLEW CONSOLIDATED SCHOOL DISTRICT 50"
- ## [52] "INCHELIUM SCHOOL DISTRICT 70"
- ## [53] "KELLER SCHOOL DISTRICT 3"
- ## [54] "ORIENT SCHOOL DISTRICT 65"
- ## [55] "REPUBLIC SCHOOL DISTRICT 309"
- ## [56] "KAHLOTUS SCHOOL DISTRICT 56"
- ## [57] "PASCO SCHOOL DISTRICT 1"
- ## [58] "STAR SCHOOL DISTRICT 54"
- ## [59] "NORTH FRANKLIN SCHOOL DISTRICT J51-162"
- ## [60] "POMEROY SCHOOL DISTRICT 110"
- ## [61] "COULEE HARTLINE SCHOOL DISTRICT 151"
- ## [62] "EPHRATA SCHOOL DISTRICT 165"
- ## [63] "GRAND COULEE DAM SCHOOL DISTRICT 301J"
- ## [64] "ROYAL SCHOOL DISTRICT 160"
- ## [65] "MOSES LAKE SCHOOL DISTRICT 161"
- ## [66] "QUINCY SCHOOL DISTRICT 144-101"
- ## [67] "SOAP LAKE SCHOOL DISTRICT 156"
- ## [68] "WARDEN SCHOOL DISTRICT 146-161"
- ## [69] "WILSON CREEK JOINT CONSOLIDATED SCHOOL DISTRICT 167 202"
- ## [70] "WAHLUKE SCHOOL DISTRICT 73"
- ## [71] "ABERDEEN SCHOOL DISTRICT 5"
- ## [72] "COSMOPOLIS SCHOOL DISTRICT 99"
- ## [73] "ELMA SCHOOL DISTRICT 68"
- ## [74] "HOQUIAM SCHOOL DISTRICT 28"
- ## [75] "MCCLEARY SCHOOL DISTRICT 65"
- ## [76] "MONTESANO SCHOOL DISTRICT 66"
- ## [77] "OAKVILLE SCHOOL DISTRICT 400"
- ## [78] "OCOSTA SCHOOL DISTRICT 172"

- ## [79] "QUINALT SCHOOL DISTRICT 97"
- ## [80] "SATSOP SCHOOL DISTRICT 104"
- ## [81] "TAHOLAH SCHOOL DISTRICT 77"
- ## [82] "WISHKAH VALLEY SCHOOL DISTRICT 117"
- ## [83] "NORTH BEACH SCHOOL DISTRICT 64"
- ## [84] "COUPEVILLE SCHOOL DISTRICT 204"
- ## [85] "OAK HARBOR SCHOOL DISTRICT 201"
- ## [86] "SOUTH WHIDBEY SCHOOL DISTRICT 206"
- ## [87] "BRINNON SCHOOL DISTRICT 46"
- ## [88] "CHIMACUM SCHOOL DISTRICT 49"
- ## [89] "PORT TOWNSEND SCHOOL DISTRICT 50"
- ## [90] "QUEETS CLEARWATER SCHOOL DISTRICT 20"
- ## [91] "QUILCENE SCHOOL DISTRICT 48"
- ## [92] "AUBURN SCHOOL DISTRICT 408"
- ## [93] "BELLEVUE SCHOOL DISTRICT 405"
- ## [94] "NORTHSHORE SCHOOL DISTRICT 417"
- ## [95] "ENUMCLAW SCHOOL DISTRICT 216"
- ## [96] "FEDERAL WAY SCHOOL DISTRICT 210"
- ## [97] "HIGHLINE SCHOOL DISTRICT 401"
- ## [98] "ISSAQUAH SCHOOL DISTRICT 411"
- ## [99] "KENT SCHOOL DISTRICT 415"
- ## [100] "LAKE WASHINGTON SCHOOL DISTRICT 414"
- ## [101] "RIVERVIEW SCHOOL DISTRICT 407"
- ## [102] "MERCER ISLAND SCHOOL DISTRICT 400"
- ## [103] "RENTON SCHOOL DISTRICT 403"
- ## [104] "SEATTLE SCHOOL DISTRICT 1"
- ## [105] "SHORELINE SCHOOL DISTRICT 412"
- ## [106] "SKYKOMISH SCHOOL DISTRICT 404"
- ## [107] "SNOQUALMIE VALLEY SCHOOL DISTRICT 410"
- ## [108] "TUKWILA SCHOOL DISTRICT 406"
- ## [109] "TAHOMA SCHOOL DISTRICT 409"
- ## [110] "VASHON ISLAND SCHOOL DISTRICT 402"
- ## [111] "PUGET SOUND EDUCATIONAL SERVICE DISTRICT"
- ## [112] "BAINBRIDGE ISLAND SCHOOL DISTRICT 303"
- ## [113] "BREMERTON SCHOOL DISTRICT 100 C"
- ## [114] "CENTRAL KITSAP SCHOOL DISTRICT 401"
- ## [115] "NORTH KITSAP SCHOOL DISTRICT 400"
- ## [116] "SOUTH KITSAP SCHOOL DISTRICT 402"
- ## [117] "OLYMPIC EDUCATIONAL SERVICE DISTRICT 114"
- ## [118] "CLEELUM ROSLYN SCHOOL DISTRICT 404"
- ## [119] "DAMMAN SCHOOL DISTRICT 7"
- ## [120] "EASTON SCHOOL DISTRICT 28"
- ## [121] "ELLENSBURG SCHOOL DISTRICT 401"
- ## [122] "KITTITAS SCHOOL DISTRICT 403"
- ## [123] "THORP SCHOOL DISTRICT 400"
- ## [124] "BICKLETON SCHOOL DISTRICT 203"
- ## [125] "CENTERVILLE SCHOOL DISTRICT 215"
- ## [126] "GLENWOOD CONSOLIDATED SCHOOL DISTRICT 401"
- ## [127] "GOLDENDALE SCHOOL DISTRICT 404"
- ## [128] "KLICKITAT SCHOOL DISTRICT 402"
- ## [129] "LYLE SCHOOL DISTRICT 406"
- ## [130] "ROOSEVELT SCHOOL DISTRICT 403"
- ## [131] "TROUT LAKE SCHOOL DISTRICT 400"
- ## [132] "WHITE SALMON SCHOOL DISTRICT 405-17"

```
## [133] "WISHRAM SCHOOL DISTRICT 94"
```

- ## [134] "ADNA SCHOOL DISTRICT 226"
- ## [135] "BOISTFORT SCHOOL DISTRICT 234"
- ## [136] "CENTRALIA SCHOOL DISTRICT 401"
- ## [137] "CHEHALIS SCHOOL DISTRICT 302"
- ## [138] "EVALINE SCHOOL DISTRICT 36"
- ## [139] "MORTON SCHOOL DISTRICT 214"
- ## [140] "MOSSYROCK SCHOOL DISTRICT 206"
- ## [141] "NAPAVINE SCHOOL DISTRICT 14"
- ## [142] "ONALASKA SCHOOL DISTRICT 300"
- ## [143] "PE ELL SCHOOL DISTRICT 301"
- ## [144] "TOLEDO SCHOOL DISTRICT 237"
- ## [145] "WHITE PASS SCHOOL DISTRICT 303"
- ## [146] "WINLOCK SCHOOL DISTRICT 232"
- ## [147] "ALMIRA SCHOOL DISTRICT 17"
- ## [148] "CRESTON CONSOLIDATED SCHOOL DISTRICT 73"
- ## [149] "DAVENPORT SCHOOL DISTRICT 207"
- ## [150] "HARRINGTON SCHOOL DISTRICT 204"
- ## [151] "ODESSA SCHOOL DISTRICT 105-157-166J"
- ## [152] "REARDAN-EDWALL SCHOOL DISTRICT 9"
- ## [153] "SPRAGUE CONSOLIDATED SCHOOL DISTRICT 8"
- ## [154] "WILBUR CONSOLIDATED SCHOOL DISTRICT 200"
- ## [155] "NORTH MASON SCHOOL DISTRICT 403"
- ## [156] "GRAPEVIEW SCHOOL DISTRICT 54"
- ## [157] "HOOD CANAL CONSOLIDATED SCHOOL DISTRICT 404"
- ## [158] "MARY M KNIGHT SCHOOL DISTRICT 311"
- ## [159] "PIONEER SCHOOL DISTRICT 402"
- ## [160] "SHELTON SCHOOL DISTRICT 309"
- ## [161] "SOUTHSIDE SCHOOL DISTRICT 42"
- ## [162] "BREWSTER SCHOOL DISTRICT 111"
- ## [163] "NESPELEM SCHOOL DISTRICT 14"
- ## [164] "OKANOGAN SCHOOL DISTRICT 105"
- ## [165] "OMAK SCHOOL DISTRICT 19"
- ## [166] "OROVILLE SCHOOL DISTRICT 410"
- ## [167] "PATEROS SCHOOL DISTRICT 122"
- ## [168] "TONASKET SCHOOL DISTRICT 404"
- ## [169] "METHOW VALLEY SCHOOL DISTRICT 350"
- ## [170] "OCEAN BEACH SCHOOL DISTRICT 101"
- ## [171] "NASELLE GRAYS RIVER VALLEY SCHOOL DISTRICT 155"
- ## [172] "NORTH RIVER SCHOOL DISTRICT 200"
- ## [173] "RAYMOND SCHOOL DISTRICT 116"
- ## [174] "SOUTH BEND SCHOOL DISTRICT 118"
- ## [175] "WILLAPA VAL SCHOOL DISTRICT 160"
- ## [176] "CUSICK CONSOLIDATED SCHOOL DISTRICT 59"
- ## [177] "NEWPORT SCHOOL DISTRICT 56-415"
- ## [178] "SELKIRK SCHOOL DISTRICT 70"
- ## [179] "BETHEL SCHOOL DISTRICT 403"
- ## [180] "CARBONADO SCHOOL DISTRICT 19"
- ## [181] "CLOVER PARK SCHOOL DISTRICT 400"
- ## [182] "DIERINGER SCHOOL DISTRICT 343"
- ## [183] "EATONVILLE SCHOOL DISTRICT 404"
- ## [184] "FIFE SCHOOL DISTRICT 417"
- ## [185] "FRANKLIN PIERCE SCHOOL DISTRICT 402"
- ## [186] "ORTING SCHOOL DISTRICT 344"

```
## [187] "PENINSULA SCHOOL DISTRICT 401"
```

- ## [188] "PUYALLUP SCHOOL DISTRICT 3"
- ## [189] "STEILACOOM HISTORICAL SCHOOL DISTRICT 1"
- ## [190] "SUMNER SCHOOL DISTRICT 320"
- ## [191] "TACOMA SCHOOL DISTRICT 10"
- ## [192] "UNIVERSITY PLACE SCH DIST 83"
- ## [193] "WHITE RIVER SCHOOL DISTRICT 416"
- ## [194] "LOPEZ ISLAND SCHOOL DISTRICT 144"
- ## [195] "ORCAS ISLAND SCHOOL DISTRICT 137"
- ## [196] "SAN JUAN ISLAND SCHOOL DISTRICT 149"
- ## [197] "SHAW ISLAND SCHOOL DISTRICT 10"
- ## [198] "ANACORTES SCHOOL DISTRICT 103"
- ## [199] "BURLINGTON EDISON SCHOOL DISTRICT 100"
- ## [200] "CONCRETE SCHOOL DISTRICT 11"
- ## [201] "CONWAY SCHOOL DISTRICT 317"
- ## [202] "LA CONNER SCHOOL DISTRICT 311"
- ## [203] "MT VERNON SCHOOL DISTRICT 320"
- ## [204] "SEDRO WOOLLEY SCHOOL DISTRICT 101"
- ## [205] "NORTHWEST EDUCATIONAL SERVICE DISTRICT 189"
- ## [206] "MILL A SCHOOL DISTRICT 31"
- ## [207] "MT PLEASANT SCHOOL DISTRICT 29-93"
- ## [208] "SKAMANIA SCHOOL DISTRICT 2"
- ## [209] "STEVENSON-CARSON SCHOOL DISTRICT 303"
- ## [210] "ARLINGTON SCHOOL DISTRICT 16"
- ## [211] "DARRINGTON CONSOLIDATED SCHOOL DISTRICT 330"
- ## [212] "EDMONDS SCHOOL DISTRICT 15"
- ## [213] "EVERETT SCHOOL DISTRICT 2"
- ## [214] "GRANITE FALLS SCHOOL DISTRICT 332"
- ## [215] "INDEX SCHOOL DISTRICT 63"
- ## [216] "LAKE STEVENS SCHOOL DISTRICT 4"
- ## [217] "LAKEWOOD SCHOOL DISTRICT 306"
- ## [218] "MARYSVILLE SCHOOL DISTRICT 25"
- ## [219] "MONROE SCHOOL DISTRICT 103"
- ## [220] "MUKILTEO SCHOOL DISTRICT 6"
- ## [221] "SNOHOMISH SCHOOL DISTRICT 201"
- ## [222] "SULTAN SCHOOL DISTRICT 311"
- ## [223] "STANWOOD SCHOOL DISTRICT 401"
- ## [224] "CENTRAL VALLEY SCHOOL DISTRICT 356"
- ## [225] "CHENEY SCHOOL DISTRICT 360"
- ## [226] "DEER PARK SCHOOL DISTRICT 414"
- ## [227] "LIBERTY SCHOOL DISTRICT 362"
- ## [228] "FREEMAN SCHOOL DISTRICT 358"
- ## [229] "MEAD CONSOLIDATED SCHOOL DISTRICT 354"
- ## [230] "MEDICAL LAKE SCHOOL DISTRICT 326"
- ## [231] "NINE MILE FALLS SCHOOL DISTRICT 325"
- ## [232] "ORCHARD PRAIRIE SCHOOL DISTRICT 123"
- ## [233] "RIVERSIDE SCHOOL DISTRICT 416"
- ## [234] "SPOKANE SCHOOL DISTRICT 81"
- ## [235] "WEST VALLEY SCHOOL DISTRICT 363"
- ## [236] "EDUCATIONAL SERVICE DISTRICT 101"
- ## [237] "EAST VALLEY SCHOOL DISTRICT 361"
- ## [238] "GREAT NORTHERN SCHOOL DISTRICT 312"
- ## [239] "CHEWELAH SCHOOL DISTRICT 36"
- ## [240] "COLVILLE SCHOOL DISTRICT 115"

```
## [241] "COLUMBIA SCHOOL DISTRICT 206"
```

- ## [242] "EVERGREEN SCHOOL DISTRICT 205"
- ## [243] "KETTLE FALLS SCHOOL DISTRICT 212"
- ## [244] "LOON LAKE SCHOOL DISTRICT 183"
- ## [245] "NORTHPORT SCHOOL DISTRICT 211"
- ## [246] "ONION CREEK SCHOOL DISTRICT 30"
- ## [247] "MARY WALKER SCHOOL DISTRICT 207"
- ## [248] "SUMMIT VALLEY SCHOOL DISTRICT 202"
- ## [249] "VALLEY SCHOOL DISTRICT 70"
- ## [250] "WELLPINIT SCHOOL DISTRICT 49"
- ## [251] "GRIFFIN SCHOOL DISTRICT 324"
- ## [252] "NORTH THURSTON SCHOOL DISTRICT 3"
- ## [253] "OLYMPIA SCHOOL DISTRICT 111"
- ## [254] "RAINIER SCHOOL DISTRICT 307"
- ## [255] "ROCHESTER SCHOOL DISTRICT 401"
- ## [256] "TENINO SCHOOL DISTRICT 402"
- ## [257] "TUMWATER SCHOOL DISTRICT 33"
- ## [258] "YELM SCHOOL DISTRICT 2"
- ## [259] "EDUCATIONAL SERVICE DISTRICT 113"
- ## [260] "WAHKIAKUM SCHOOL DISTRICT 200"
- ## [261] "COLLEGE PLACE SCHOOL DISTRICT 250"
- ## [262] "COLUMBIA SCHOOL DISTRICT 400"
- ## [263] "DIXIE SCHOOL DISTRICT 101"
- ## [264] "PRESCOTT SCHOOL DISTRICT 402 37"
- ## [265] "TOUCHET SCHOOL DISTRICT 300"
- ## [266] "WAITSBURG SCHOOL DISTRICT 401-100"
- ## [267] "WALLA WALLA SCHOOL DISTRICT 140"
- ## [268] "EDUCATIONAL SERVICE DISTRICT 123"
- ## [269] "BELLINGHAM SCHOOL DISTRICT 501"
- ## [270] "BLAINE SCHOOL DISTRICT 503"
- ## [271] "FERNDALE SCHOOL DISTRICT 502"
- ## [272] "LYNDEN SCHOOL DISTRICT 504"
- ## [273] "MERIDIAN SCHOOL DISTRICT 505"
- # [274] "MOUNT BAKER SCHOOL DISTRICT 507"
- ## [275] "NOOKSACK VALLEY SCHOOL DISTRICT 506"
- ## [276] "COLFAX SCHOOL DISTRICT 300"
- ## [277] "COLTON SCHOOL DISTRICT 306"
- ## [278] "ENDICOTT SCHOOL DISTRICT 308"
- ## [279] "GARFIELD SCHOOL DISTRICT 302"
- ## [280] "LACROSSE SCHOOL DISTRICT 126"
- ## [281] "LAMONT SCHOOL DISTRICT 264"
- ## [282] "OAKESDALE SCHOOL DISTRICT 324"
- ## [283] "PALOUSE SCHOOL DISTRICT 301"
- ## [284] "PULLMAN SCHOOL DISTRICT 267"
- ## [285] "ROSALIA SCHOOL DISTRICT 320"
- ## [286] "ST JOHN SCHOOL DISTRICT 322"
- ## [287] "STEPTOE SCHOOL DISTRICT 304"
- ## [288] "TEKOA SCHOOL DISTRICT 265"
- ## [289] "GRANDVIEW SCHOOL DISTRICT 116-200"
- ## [290] "GRANGER SCHOOL DISTRICT 204"
- ## [291] "HIGHLAND SCHOOL DISTRICT 203"
- ## [292] "MABTON SCHOOL DISTRICT 120"
- ## [293] "EAST VALLEY SCHOOL DISTRICT 90"
- ## [294] "NACHES VALLEY JOINT SCHOOL DISTRICT 3"

```
## [295] "SELAH SCHOOL DISTRICT 119"

## [296] "SUNNYSIDE SCHOOL DISTRICT 201"

## [297] "TOPPENISH SCHOOL DISTRICT 202"

## [298] "UNION GAP SCHOOL DISTRICT 2"

## [299] "WAPATO SCHOOL DISTRICT 207"

## [300] "WEST VALLEY SCHOOL DISTRICT 208"

## [301] "YAKIMA SCHOOL DISTRICT 7"

## [302] "ZILLAH SCHOOL DISTRICT 205"

## [303] "EDUCATIONAL SERVICE DISTRICT 105"

## [304] "MOUNT ADAMS SCHOOL DISTRICT 209"
```

Next remove the unnecessary numbers

#### library(stringr)

## Warning: package 'stringr' was built under R version 3.4.3

(WAData\$NAMEbad=unlist(lapply(WAData\$NAME,word,-1)))

```
##
      [1] "122"
                           "158"
                                            "163-55"
                                                             "160-67"
      [5] "109-43"
                           "420"
                                            "J250-185"
                                                             "17"
##
                                            "116"
##
      [9] "52"
                           "50"
                                                             "400"
                                                             "127"
##
    [13] "53"
                           "222"
                                            "129"
    [17] "19"
                           "228"
                                            "69"
                                                             "246"
##
    [21] "DISTRICT"
                                            "313"
                                                             "121"
##
                           "401"
                           "323"
                                            "119"
                                                             "117"
##
    [25] "DISTRICT"
    [29] "114"
                                            "98"
                                                             "101"
##
                           "103"
##
    [33] "122"
                           "37"
                                            "112-6"
                                                             "112"
    [37] "2"
                           "35"
                                            "401"
                                                             "402"
##
##
    [41] "458"
                           "122"
                                            "130"
                                                             "404"
    [45] "75"
                           "206"
                                            "207"
                                                             "13"
##
##
    [49] "102"
                           "209"
                                            "50"
                                                             "70"
    [53] "3"
##
                           "65"
                                            "309"
                                                             "56"
##
    [57] "1"
                           "54"
                                            "J51-162"
                                                             "110"
                           "165"
                                            "301J"
                                                             "160"
##
    [61] "151"
    [65] "161"
                           "144-101"
                                            "156"
                                                             "146-161"
##
                                            "5"
                                                             "99"
##
    [69] "202"
                           "73"
                           "28"
                                            "65"
                                                             "66"
##
    [73] "68"
##
    [77] "400"
                           "172"
                                            "97"
                                                             "104"
    [81] "77"
                           "117"
                                            "64"
                                                             "204"
##
    [85] "201"
                           "206"
                                            "46"
                                                             "49"
##
                           "20"
                                            "48"
                                                             "408"
##
    [89] "50"
    [93] "405"
                           "417"
                                            "216"
                                                             "210"
##
##
    [97] "401"
                           "411"
                                            "415"
                                                             "414"
   [101] "407"
                           "400"
                                            "403"
                                                             "1"
##
                                            "410"
##
   [105] "412"
                           "404"
                                                             "406"
                                                             "303"
## [109] "409"
                           "402"
                                            "DISTRICT"
## [113] "C"
                                            "400"
                                                             "402"
                           "401"
                                            "7"
##
   「117] "114"
                           "404"
                                                             "28"
  [121] "401"
                           "403"
                                            "400"
                                                             "203"
                           "401"
  [125] "215"
                                            "404"
                                                             "402"
##
                                            "400"
                                                             "405-17"
## [129] "406"
                           "403"
## [133] "94"
                           "226"
                                            "234"
                                                             "401"
                                            "214"
                                                             "206"
## [137] "302"
                           "36"
## [141] "14"
                           "300"
                                            "301"
                                                             "237"
                                            "17"
## [145] "303"
                           "232"
                                                             "73"
```

```
## [149] "207"
                          "204"
                                           "105-157-166J" "9"
   [153] "8"
                          "200"
                                           "403"
                                                           "54"
                                           "402"
   [157] "404"
                          "311"
                                                           "309"
## [161] "42"
                          "111"
                                           "14"
                                                           "105"
##
   [165] "19"
                          "410"
                                           "122"
                                                           "404"
  [169] "350"
                          "101"
                                           "155"
                                                           "200"
##
## [173] "116"
                          "118"
                                           "160"
                                                           "59"
## [177] "56-415"
                          "70"
                                           "403"
                                                           "19"
##
   Γ181]
         "400"
                          "343"
                                           "404"
                                                           "417"
   [185] "402"
                          "344"
                                           "401"
                                                           "3"
##
  [189] "1"
                          "320"
                                           "10"
                                                           "83"
## [193] "416"
                          "144"
                                           "137"
                                                           "149"
   [197] "10"
                          "103"
                                           "100"
                                                           "11"
##
                                                           "101"
  [201] "317"
                          "311"
                                           "320"
##
## [205] "189"
                          "31"
                                           "29-93"
                                                           "2"
                                           "330"
                                                           "15"
## [209] "303"
                          "16"
   [213] "2"
                          "332"
                                           "63"
                                                           "4"
##
                                                           "6"
                          "25"
                                           "103"
  [217] "306"
## [221] "201"
                          "311"
                                           "401"
                                                           "356"
                                           "362"
                                                           "358"
## [225] "360"
                          "414"
## [229] "354"
                          "326"
                                           "325"
                                                           "123"
## [233] "416"
                          "81"
                                           "363"
                                                           "101"
## [237] "361"
                                           "36"
                                                           "115"
                          "312"
  [241] "206"
                          "205"
                                           "212"
                                                           "183"
##
## [245] "211"
                          "30"
                                           "207"
                                                           "202"
  [249] "70"
                          "49"
                                           "324"
                                                           "3"
                                           "401"
##
  [253] "111"
                          "307"
                                                           "402"
   [257] "33"
                          "2"
                                           "113"
                                                           "200"
##
## [261] "250"
                          "400"
                                           "101"
                                                           "37"
## [265] "300"
                          "401-100"
                                           "140"
                                                           "123"
                          "503"
                                           "502"
                                                           "504"
## [269] "501"
##
   [273] "505"
                          "507"
                                           "506"
                                                           "300"
## [277] "306"
                          "308"
                                           "302"
                                                           "126"
## [281] "264"
                          "324"
                                           "301"
                                                           "267"
                                           "304"
                                                           "265"
## [285] "320"
                          "322"
## [289] "116-200"
                          "204"
                                           "203"
                                                           "120"
## [293] "90"
                          "3"
                                           "119"
                                                           "201"
## [297] "202"
                          "2"
                                           "207"
                                                           "208"
## [301] "7"
                          "205"
                                           "105"
                                                           "209"
```

Conintue with the rest of data cleaning.

```
WAData$NAMEOK=NA
for (pos in 1:nrow(WAData)){
   if(WAData$NAMEbad[pos]!="DISTRICT"){
    cleanValue=sub(WAData$NAMEbad[pos],'',WAData$NAME[pos])
   WAData$NAMEOK[pos]=trimws(cleanValue)
   }else{WAData$NAMEOK[pos]=WAData$NAME[pos]}}

table(unlist(lapply(WAData$NAMEOK,word,-1)))
```

```
## ## 147 167 402 C DIST DISTRICT ## 1 1 1 1 2 298
```

```
WAData[word(WAData$NAMEOK,-1)=='DIST',]
                                           NAME YRDATA TOTALREV TFEDREV TSTREV
            STATE
## 15 Washington
                      LAKE CHELAN SCH DIST 129
                                                  2015
                                                          18058
                                                                   1502 11433
                                                          64898
## 192 Washington UNIVERSITY PLACE SCH DIST 83
                                                  2015
                                                                   3559 39937
       TLOCREV TOTALEXP TCURELSC TCURINST TCURSSVC TCUROTH NONELSEC TCAPOUT
## 15
          5123
                  19158
                           16240
                                     9258
                                               6039
                                                        943
                                                                   9
                                                                        2885
## 192
         21402
                  60766
                           56274
                                    31799
                                              21704
                                                       2771
                                                                   Λ
                                                                        1355
##
       NAMEbad
                                  NAMEOK
                    LAKE CHELAN SCH DIST
## 15
           129
## 192
            83 UNIVERSITY PLACE SCH DIST
WAData$NAMEbad=unlist(lapply(WAData$NAMEOK,word,-1))
for (pos in 1:nrow(WAData)){
    if (WAData$NAMEbad[pos] == 'DIST'){
        cleanValue=sub("DIST", 'DISTRICT', WAData$NAMEOK[pos])
        WAData$NAMEOK[pos]=trimws(cleanValue)}}
table(unlist(lapply(WAData$NAMEOK,word,-1)))
##
##
        147
                 167
                          402
                                     C DISTRICT
##
          1
                   1
                            1
                                             300
                                     1
(lastBad=names(table(unlist(lapply(WAData$NAMEOK,word,-1))))[-c(4,5)])
## [1] "147" "167" "402"
for (pos in 1:nrow(WAData)){
    if (WAData$NAMEbad[pos]%in% lastBad){
        cleanValue=sub(WAData$NAMEbad[pos],'',WAData$NAMEOK[pos])
        WAData$NAMEOK[pos]=trimws(cleanValue) }}
table(unlist(lapply(WAData$NAMEOK,word,-1)))
##
##
          C DISTRICT
                 303
##
WAData[word(WAData$NAMEOK,-1)=='C',]
            STATE
                                              NAME YRDATA TOTALREV TFEDREV
## 113 Washington BREMERTON SCHOOL DISTRICT 100 C
                                                     2015
                                                             65743
                                                                      6250
       TSTREV TLOCREV TOTALEXP TCURELSC TCURINST TCURSSVC TCUROTH NONELSEC
## 113 40421
                19072
                         61934
                                  56699
                                            32267
                                                     22048
                                                              2384
                                                                        599
##
       TCAPOUT NAMEbad
## 113
          2811
                     C BREMERTON SHOOL DISTRICT 100 C
WAData[word(WAData$NAMEOK,-1)=='C',]$NAMEOK='BREMERTON SCHOOL DISTRICT'
table(unlist(lapply(WAData$NAMEOK,word,-1)))
##
## DISTRICT
        304
length(WAData$NAMEOK)
```

```
## [1] 304
length(unique(WAData$NAMEOK))
## [1] 296
names (WAData)
    [1] "STATE"
                   "NAME"
                              "YRDATA"
                                          "TOTALREV" "TFEDREV" "TSTREV"
   [7] "TLOCREV"
                   "TOTALEXP" "TCURELSC" "TCURINST" "TCURSSVC" "TCUROTH"
## [13] "NONELSEC" "TCAPOUT"
                              "NAMEbad"
                                         "NAMEOK"
numericColumns =names(WAData)[4:14]
aggregateBY='NAMEOK'
(cleanWA=aggregate(WAData[,numericColumns], by=list(WAData[,aggregateBY]), sum ))
Merging the Data
As the Enrollment and Drop Out Rate datasets both had district codes, merge via "District Code".
gradenr=merge(EnrollmentWA, DropOut, by.x='District Code', by.y="District Code")
DropOutData <- merge(DropOut, EnrollmentWA, by="District Code")</pre>
As the Financials and the new datasets both had district codes, merge via "District Name".
FullData <- merge(WAFinance1, DropOutData, by="District Name")
Now we can take a look at the data frame variable.
str(FullData)
## 'data.frame':
                    210 obs. of 27 variables:
## $ District Name
                                                    "Aberdeen School District" "Adna School District" "A
                                             : chr
## $ State.x
                                             : chr
                                                    "Washington" "Washington" "Washington"
## $ Year
                                                   2015 2015 2015 2015 2015 ...
                                             : num
## $ Total Revenue
                                                    42595 6316 33541 60963 207809 ...
                                             : num
## $ State Revenue
                                                    28758 4670 18256 38934 127492 ...
                                             : num
   $ Local Revenue
                                                    9145 1140 13808 19327 65340 ...
                                             : num
                                                    "14005" "21226" "29103" "31016" ...
## $ District Code
                                             : chr
## $ Adjusted 5-Year Cohort Graduation Rate: chr
                                                    "77.685950413223139" "91.111111111111114" "87.053571
                                                    "16.528925619834713" "8.8888888888888888" "10.714285"
## $ Cohort dropout rate
                                             : chr
   $ School Year
                                             : num
                                                    2015 2015 2015 2015 2015 ...
                                                    "WA" "WA" "WA" "WA" ...
## $ State.y
                                             : chr
## $ K-12 Total
                                                    3221 608 2721 5479 15222 ...
                                             : num
## $ PK Total
                                                    49 4 31 56 226 49 87 118 68 243 ...
##
   $ Full K Total
                                                   266 0 192 71 1200 ...
                                             : num
##
  $ Half K Total
                                                   0 42 4 285 16 ...
## $ Gr 1 Total
                                                   265 47 210 368 1202 ...
                                             : num
##
   $ Gr 2 Total
                                                    264 34 218 424 1181 ...
                                             : num
##
   $ Gr 3 Total
                                                   257 42 196 397 1134 ...
                                             : num
## $ Gr 4 Total
                                                   202 35 209 392 1157 ...
                                             : num
## $ Gr 5 Total
                                                   236 42 185 424 1122 ...
                                             : num
   $ Gr 6 Total
                                             : num
                                                   240 51 218 411 1058 ...
```

: num

: num 217 47 222 440 1090 ...

: num 235 56 202 437 1085 ...

248 48 189 436 1278 ...

## \$ Gr 7 Total

## \$ Gr 8 Total

## \$ Gr 9 Total

```
## $ Gr 10 Total : num 266 61 214 443 1168 ...
## $ Gr 11 Total : num 227 60 235 475 1205 ...
## $ Gr 12 Total : num 298 43 227 476 1326 ...
```

Now we can look at a summary of the data.

#### summary(FullData)

```
State.x
                                                         Total Revenue
   District Name
                                               Year
##
   Length:210
                       Length:210
                                          Min.
                                                 :2015
                                                         Min.
                                                                : 1694
                                                         1st Qu.: 7496
##
   Class : character
                       Class : character
                                          1st Qu.:2015
   Mode :character
                                                         Median: 17644
                       Mode : character
                                          Median:2015
##
                                          Mean
                                                 :2015
                                                         Mean
                                                                : 52931
##
                                          3rd Qu.:2015
                                                         3rd Qu.: 53008
##
                                                 :2015
                                          Max.
                                                         Max.
                                                                :415924
##
   State Revenue
                     Local Revenue
                                      District Code
##
   Min.
          :
               504
                     Min.
                                 74
                                      Length:210
   1st Qu.: 4841
                     1st Qu.:
                              1541
                                      Class : character
   Median : 12090
                     Median :
                              3850
                                      Mode :character
##
          : 32659
##
   Mean
                     Mean
                           : 16428
##
   3rd Qu.: 36285
                     3rd Qu.: 16189
   Max.
          :263848
                     Max.
                            :169681
##
   Adjusted 5-Year Cohort Graduation Rate Cohort dropout rate School Year
##
   Length:210
                                           Length:210
                                                               Min.
                                                                      :2015
##
   Class : character
                                           Class : character
                                                               1st Qu.:2015
   Mode :character
##
                                           Mode :character
                                                               Median:2015
##
                                                               Mean :2015
##
                                                               3rd Qu.:2015
##
                                                               Max.
                                                                      :2015
                                                          Full K Total
##
                         K-12 Total
                                            PK Total
      State.y
                                                                    0.00
##
   Length:210
                       Min.
                              :
                                  44.0
                                         Min.
                                                : 0.0
                                                         Min.
##
   Class : character
                       1st Qu.: 566.2
                                         1st Qu.: 5.0
                                                         1st Qu.: 14.25
                       Median: 1521.5
   Mode :character
                                         Median: 17.0
                                                         Median: 60.50
##
                       Mean
                             : 4208.6
                                         Mean : 51.0
                                                         Mean
                                                               : 214.14
##
                       3rd Qu.: 4400.2
                                         3rd Qu.: 55.5
                                                         3rd Qu.: 196.25
##
                       Max.
                             :29851.0
                                         Max. :464.0
                                                         Max.
                                                               :2479.00
##
    Half K Total
                        Gr 1 Total
                                          Gr 2 Total
                                                           Gr 3 Total
##
   Min.
              0.00
                      Min.
                           :
                                 0.00
                                        Min. :
                                                   2.0
                                                         Min.
                                                               :
                                                                   1.00
##
    1st Qu.:
               0.00
                      1st Qu.: 41.25
                                        1st Qu.: 39.0
                                                         1st Qu.: 39.25
               2.00
                                                         Median: 105.00
##
   Median :
                      Median: 106.50
                                        Median: 108.0
##
   Mean : 104.80
                      Mean : 330.68
                                        Mean : 330.5
                                                         Mean : 321.32
##
    3rd Qu.: 77.75
                      3rd Qu.: 352.75
                                        3rd Qu.: 341.2
                                                         3rd Qu.: 348.00
##
   Max.
          :2005.00
                      Max. :2567.00
                                        Max. :2573.0
                                                         Max.
                                                                :2445.00
##
      Gr 4 Total
                       Gr 5 Total
                                        Gr 6 Total
                                                         Gr 7 Total
##
         :
                           :
                                             :
                                                              :
   Min.
               1.0
                     Min.
                                3.0
                                      Min.
                                                 0.0
                                                       Min.
                                                                  0.00
   1st Qu.: 40.0
                     1st Qu.: 39.5
                                      1st Qu.: 41.0
                                                       1st Qu.: 39.25
##
##
   Median : 108.5
                     Median : 106.0
                                      Median : 117.5
                                                       Median: 115.00
   Mean
         : 314.5
                     Mean
                            : 315.2
                                      Mean
                                           : 312.7
                                                       Mean
                                                              : 311.75
   3rd Qu.: 342.2
                     3rd Qu.: 342.2
##
                                      3rd Qu.: 350.8
                                                       3rd Qu.: 349.25
          :2266.0
##
   Max.
                     Max.
                            :2252.0
                                      Max.
                                            :2225.0
                                                       Max.
                                                              :2227.00
##
                       Gr 9 Total
      Gr 8 Total
                                        Gr 10 Total
                                                         Gr 11 Total
  Min.
        :
              2.0
                     Min.
                           :
                                1.00
                                       Min.
                                              :
                                                  1.0
                                                        Min. :
                                                                   1.00
##
   1st Qu.: 42.0
                     1st Qu.: 41.25
                                       1st Qu.: 44.0
                                                        1st Qu.: 39.25
   Median : 125.0
                     Median : 128.50
                                       Median : 125.0
                                                        Median: 124.50
   Mean
         : 319.2
                     Mean
                           : 335.70
                                       Mean
                                             : 328.0
                                                        Mean : 324.31
```

```
3rd Qu.: 362.5
                     3rd Qu.: 388.75
                                        3rd Qu.: 369.8
                                                          3rd Qu.: 381.50
##
   Max.
         :2200.0
                     Max. :2489.00
                                               :2238.0
                                                                 :2107.00
                                        Max.
                                                         Max.
    Gr 12 Total
##
## Min. :
               2.00
   1st Qu.: 40.25
## Median: 125.50
## Mean : 345.78
## 3rd Qu.: 415.50
## Max.
           :2330.00
Now we see if the updated data set has any missing values.
table(is.na(FullData))
##
## FALSE
## 5670
Now let's remove NA's.
FullData <- na.omit(FullData)</pre>
Perfect, and now I want to set the graduation and dropout rates to numeric values.
FullData$`Adjusted 5-Year Cohort Graduation Rate` <- as.numeric(as.character(FullData$`Adjusted 5-Year
## Warning: NAs introduced by coercion
FullData Cohort dropout rate <- as.numeric(as.character(FullData Cohort dropout rate)))
## Warning: NAs introduced by coercion
Good, no missing values. Now let's see which districts have the higest and lowest Local, State, and Total
Revenues
FullData[which.max(FullData$`State Revenue`),]
                                   State.x Year Total Revenue State Revenue
                 District Name
## 170 Spokane School District Washington 2015
                                                       403857
       Local Revenue District Code Adjusted 5-Year Cohort Graduation Rate
##
## 170
              105747
                              32081
##
       Cohort dropout rate School Year State.y K-12 Total PK Total
## 170
                  11.76776
                                   2015
                                             WA
                                                     29851
##
       Full K Total Half K Total Gr 1 Total Gr 2 Total Gr 3 Total Gr 4 Total
## 170
               2479
                               76
                                        2544
                                                   2559
                                                               2394
       Gr 5 Total Gr 6 Total Gr 7 Total Gr 8 Total Gr 9 Total Gr 10 Total
##
## 170
             2192
                        2225
                                    2227
                                               2200
                                                           2254
                                                                       2169
##
       Gr 11 Total Gr 12 Total
## 170
              2107
                          2159
FullData[which.max(FullData$`Total Revenue`),]
                District Name
                                  State.x Year Total Revenue State Revenue
## 175 Tacoma School District Washington 2015
                                                      415924
       Local Revenue District Code Adjusted 5-Year Cohort Graduation Rate
##
## 175
              154048
                              27010
       Cohort dropout rate School Year State.y K-12 Total PK Total
## 175
                  15.36797
                                   2015
                                             WA
                                                     29144
       Full K Total Half K Total Gr 1 Total Gr 2 Total Gr 3 Total Gr 4 Total
## 175
               1799
                              657
                                        2567
                                                   2573
                                                               2445
                                                                          2266
```

```
Gr 5 Total Gr 6 Total Gr 7 Total Gr 8 Total Gr 9 Total Gr 10 Total
## 175
            2223
                      1996
                                 2085
                                            1998
                                                      2124
                                                                  2080
      Gr 11 Total Gr 12 Total
             2001
                        2330
## 175
FullData[which.max(FullData$`Local Revenue`),]
##
               District Name
                               State.x Year Total Revenue State Revenue
## 8 Bellevue School District Washington 2015
                                                  307196
  Local Revenue District Code Adjusted 5-Year Cohort Graduation Rate
           169681
## 8
                         17405
   Cohort dropout rate School Year State.y K-12 Total PK Total Full K Total
## 8
               4.295302
                         2015
                                      WA
                                              19362
    Half K Total Gr 1 Total Gr 2 Total Gr 3 Total Gr 4 Total Gr 5 Total
                                           1458
## 8
            1296
                      1368
                                1534
                                                      1415
    Gr 6 Total Gr 7 Total Gr 8 Total Gr 9 Total Gr 10 Total Gr 11 Total
                    1498
                                          1589
          1488
                               1457
                                                     1545
    Gr 12 Total
## 8
           1582
FullData[which.min(FullData$`State Revenue`),]
##
                      District Name
                                       State.x Year Total Revenue
## 205 Wishkah Valley School District Washington 2015
      State Revenue Local Revenue District Code
                            1634
## 205
               504
                                        14117
##
      Adjusted 5-Year Cohort Graduation Rate Cohort dropout rate School Year
## 205
                                    95.2381
                                                      4.761905
##
      State.y K-12 Total PK Total Full K Total Half K Total Gr 1 Total
## 205
                   148
                              0
                                        9
        WA
      Gr 2 Total Gr 3 Total Gr 4 Total Gr 5 Total Gr 6 Total Gr 7 Total
                    8
                               14
                                          13
      Gr 8 Total Gr 9 Total Gr 10 Total Gr 11 Total Gr 12 Total
              6
                    8
                                    13
FullData[which.min(FullData$`Total Revenue`),]
##
                    District Name
                                    State.x Year Total Revenue
## 112 North River School District Washington 2015
      State Revenue Local Revenue District Code
## 112
              1554
                              89
                                         25200
      Adjusted 5-Year Cohort Graduation Rate Cohort dropout rate School Year
##
## 112
                                         NA
                                                                      2015
      State.y K-12 Total PK Total Full K Total Half K Total Gr 1 Total
##
## 112
        WA
                    52
                            0
                                           0
      Gr 2 Total Gr 3 Total Gr 4 Total Gr 5 Total Gr 6 Total Gr 7 Total
## 112
                                             3
                        4
                                   1
      Gr 8 Total Gr 9 Total Gr 10 Total Gr 11 Total Gr 12 Total
               3
                         7
                                     3
                                               10
FullData[which.min(FullData$`Local Revenue`),]
##
                District Name State.x Year Total Revenue State Revenue
## 206 Wishram School District Washington 2015 1898
      Local Revenue District Code Adjusted 5-Year Cohort Graduation Rate
## 206
                74
                           20094
      Cohort dropout rate School Year State.y K-12 Total PK Total
```

```
## 206
                                   2015
                                              WA
                                                         85
                         NA
##
       Full K Total Half K Total Gr 1 Total Gr 2 Total Gr 3 Total Gr 4 Total
## 206
                                0
                                            6
                                                       5
##
       Gr 5 Total Gr 6 Total Gr 7 Total Gr 8 Total Gr 9 Total Gr 10 Total
## 206
                7
                            8
                                        5
                                                   9
##
       Gr 11 Total Gr 12 Total
## 206
                 4
```

We can see

Ok, now let's look at the districts with the lowest graduation rates.

#### FullData[which.min(FullData\$`Adjusted 5-Year Cohort Graduation Rate`),]

```
##
                   District Name
                                     State.x Year Total Revenue State Revenue
## 166 Soap Lake School District Washington 2015
                                                            6389
                                                                           4429
       Local Revenue District Code Adjusted 5-Year Cohort Graduation Rate
##
## 166
                1063
                              13156
                                                                    38.88889
##
       Cohort dropout rate School Year State.y K-12 Total PK Total
## 166
                  55.55556
                                   2015
                                             WA
                                                        440
##
       Full K Total Half K Total Gr 1 Total Gr 2 Total Gr 3 Total Gr 4 Total
## 166
                 26
                                0
                                          34
                                                      28
                                                                  33
##
       Gr 5 Total Gr 6 Total Gr 7 Total Gr 8 Total Gr 9 Total Gr 10 Total
                                      33
## 166
               33
                           29
                                                  32
##
       Gr 11 Total Gr 12 Total
## 166
                37
```

## FullData[order(FullData\$`Adjusted 5-Year Cohort Graduation Rate`),]

```
District Name
                                             State.x Year Total Revenue
## 166
               Soap Lake School District Washington 2015
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| ## | 146 | 4982   | 1518   | 22009 |
| ## | 155 | 2441   | 1156   | 38320 |
| ## | 159 | 2734   | 1641   | 26070 |
| ## | 192 | 4038   | 1507   | 35200 |
| ## | 192 | 1743   | 1603   | 20203 |
| ## | TT  | 1743   | 1003   | 20203 |

| ## |     | 18192           | 5631            | 362      |        |              |        |      |
|----|-----|-----------------|-----------------|----------|--------|--------------|--------|------|
| ## |     | 1691            | 887             | 190      |        |              |        |      |
|    | 55  | 2012            | 369             | 383      |        |              |        |      |
| ## | 61  | 1803            | 579             | 222      |        |              |        |      |
| ## | 66  | 2634            | 160             | 100      | 70     |              |        |      |
| ## | 68  | 1721            | 170             | 110      | 56     |              |        |      |
| ## | 82  | 2946            | 1070            | 011      | .58    |              |        |      |
| ## | 87  | 1828            | 175             | 092      | 207    |              |        |      |
| ## | 112 | 1554            | 89              | 252      | 200    |              |        |      |
| ## | 113 | 2593            | 501             | 332      | 211    |              |        |      |
| ## | 116 | 1910            | 627             | 383      | 324    |              |        |      |
| ## | 163 | 1501            | 579             | 174      | 04     |              |        |      |
| ## | 180 | 1645            | 741             | 194      | 00     |              |        |      |
| ## | 186 | 2283            | 622             | 204      | -00    |              |        |      |
| ## | 189 | 6634            | 3204            | 330      | 70     |              |        |      |
| ## | 198 | 1840            | 201             | 011      | .09    |              |        |      |
| ## | 206 | 1701            | 74              | 200      | 94     |              |        |      |
| ## |     | Adjusted 5-Year | Cohort Graduati | on Rate  | Cohort | dropout rate | School | Year |
| ## | 166 | Ü               |                 | 88.8889  |        | 55.55556     |        | 2015 |
| ## | 176 |                 | 5               | 4.54545  |        | 36.363636    |        | 2015 |
| ## | 183 |                 | 5               | 55.16129 |        | 36.774194    |        | 2015 |
| ## | 121 |                 | 5               | 7.54717  |        | 32.075472    |        | 2015 |
| ## | 75  |                 | 6               | 34.28571 |        | 35.714286    |        | 2015 |
| ## | 27  |                 |                 | 35.00000 |        | 28.750000    |        | 2015 |
| ## | 101 |                 |                 | 37.56757 |        | 25.675676    |        | 2015 |
| ## | 33  |                 |                 | 88.75000 |        | 31.250000    |        | 2015 |
|    | 187 |                 |                 | 88.84422 |        | 29.145729    |        | 2015 |
|    | 117 |                 |                 | 9.23077  |        | 23.076923    |        | 2015 |
|    | 178 |                 |                 | 0.00000  |        | 30.000000    |        | 2015 |
|    | 201 |                 |                 | 0.26087  |        | 25.739130    |        | 2015 |
|    | 193 |                 |                 | 0.86614  |        | 26.771654    |        | 2015 |
|    | 50  |                 |                 | 2.19101  |        | 23.595506    |        | 2015 |
|    | 63  |                 |                 | 2.29978  |        | 22.556943    |        | 2015 |
|    | 208 |                 |                 | 3.47866  |        | 24.523161    |        | 2015 |
|    | 195 |                 |                 | 3.68421  |        | 24.812030    |        | 2015 |
|    | 57  |                 |                 | 4.41860  |        | 20.930233    |        | 2015 |
|    | 58  |                 |                 | 5.00000  |        | 20.588235    |        | 2015 |
| ## |     |                 |                 | 5.00000  |        | 18.750000    |        | 2015 |
|    | 142 |                 |                 | 75.00000 |        | 17.708333    |        | 2015 |
| ## |     |                 |                 | 75.15030 |        | 18.837675    |        | 2015 |
|    | 128 |                 |                 | 5.41667  |        | 22.916667    |        | 2015 |
|    | 105 |                 |                 | 6.00000  |        | 23.000000    |        | 2015 |
| ## |     |                 |                 | 6.31579  |        | 20.175439    |        | 2015 |
|    | 181 |                 |                 | 6.31579  |        | 21.052632    |        | 2015 |
| ## |     |                 |                 | 6.92308  |        | 16.410256    |        | 2015 |
| ## |     |                 |                 | 6.98413  |        | 22.222222    |        | 2015 |
| ## |     |                 |                 | 7.04348  |        | 18.956522    |        | 2015 |
| ## |     |                 |                 | 7.04346  |        | 19.672131    |        | 2015 |
|    |     |                 |                 |          |        |              |        |      |
|    | 143 |                 |                 | 7.24868  |        | 22.751323    |        | 2015 |
|    | 119 |                 |                 | 7.58621  |        | 20.689655    |        | 2015 |
| ## |     |                 |                 | 7.68595  |        | 16.528926    |        | 2015 |
| ## |     |                 |                 | 8.38150  |        | 17.456647    |        | 2015 |
|    | 130 |                 |                 | 8.43719  |        | 17.804154    |        | 2015 |
| ## | 1   |                 | 7               | 8.49246  |        | 16.984925    |        | 2015 |

| ## | 98  | 78.57143 | 21.428571 | 2015 |
|----|-----|----------|-----------|------|
| ## | 111 | 78.57143 | 20.918367 | 2015 |
| ## | 202 | 78.57143 | 21.428571 | 2015 |
| ## | 22  | 78.62903 | 18.951613 | 2015 |
|    | 188 | 79.06198 | 19.262982 | 2015 |
|    | 190 | 79.08654 | 16.766827 |      |
|    |     |          |           | 2015 |
|    | 151 | 79.31034 | 20.689655 | 2015 |
|    | 179 | 79.34783 | 20.652174 | 2015 |
| ## | 207 | 79.67914 | 17.112299 | 2015 |
| ## | 107 | 80.35714 | 16.964286 | 2015 |
| ## | 171 | 80.45977 | 17.241379 | 2015 |
| ## | 154 | 80.91603 | 12.977099 | 2015 |
| ## | 156 | 81.13208 | 16.981132 | 2015 |
| ## | 5   | 81.51042 | 15.711806 | 2015 |
| ## |     | 81.63636 | 16.060606 | 2015 |
| ## |     | 81.69935 | 16.339869 |      |
|    |     |          |           | 2015 |
| ## |     | 81.92771 | 14.056225 | 2015 |
| ## |     | 81.93833 | 15.418502 | 2015 |
| ## | 138 | 82.05128 | 14.871795 | 2015 |
| ## | 9   | 82.09607 | 15.502183 | 2015 |
| ## | 168 | 82.14748 | 12.807245 | 2015 |
| ## | 14  | 82.25806 | 16.129032 | 2015 |
| ## | 118 | 82.35294 | 15.686275 | 2015 |
| ## | 175 | 82.46753 | 15.367965 | 2015 |
|    | 147 | 82.54122 | 14.936954 | 2015 |
|    | 135 | 82.58065 | 15.483871 | 2015 |
| ## |     | 82.85714 | 17.142857 | 2015 |
|    | 71  | 82.98246 | 14.649123 | 2015 |
|    | 32  | 83.05085 | 15.819209 | 2015 |
|    |     |          |           |      |
|    | 209 | 83.29356 | 14.319809 | 2015 |
|    | 197 | 83.33333 | 15.000000 | 2015 |
|    | 158 | 83.61345 | 13.025210 | 2015 |
|    | 123 | 83.65385 | 16.346154 | 2015 |
| ## | 39  | 83.67347 | 14.795918 | 2015 |
| ## | 149 | 83.75000 | 11.562500 | 2015 |
| ## | 124 | 84.09091 | 11.363636 | 2015 |
| ## | 152 | 84.09091 | 12.878788 | 2015 |
| ## | 160 | 84.09091 | 14.545455 | 2015 |
| ## | 96  | 84.09704 | 13.746631 | 2015 |
|    | 161 | 84.25414 | 13.812155 | 2015 |
|    | 102 | 84.56790 | 14.197531 | 2015 |
|    | 25  | 84.61538 | 14.102564 | 2015 |
|    | 72  | 84.71233 | 12.821918 | 2015 |
|    | 46  |          |           |      |
|    |     | 84.74576 | 14.124294 | 2015 |
|    | 56  | 84.84848 | 15.151515 | 2015 |
|    | 26  | 84.88372 | 15.116279 | 2015 |
|    | 141 | 85.00000 | 10.000000 | 2015 |
| ## |     | 85.04274 | 14.102564 | 2015 |
| ## | 16  | 85.29412 | 11.764706 | 2015 |
| ## | 62  | 85.39326 | 14.606742 | 2015 |
| ## | 59  | 85.57692 | 13.461538 | 2015 |
| ## | 103 | 85.63485 | 10.750695 | 2015 |
| ## | 13  | 85.71429 | 12.698413 | 2015 |
|    | 110 | 86.17886 | 10.772358 | 2015 |
|    |     |          |           |      |

| ##       | 45  | 86.20690             | 13.793103             | 2015         |
|----------|-----|----------------------|-----------------------|--------------|
| ##       | 145 | 86.27451             | 11.764706             | 2015         |
| ##       | 4   | 86.29442             | 11.421320             | 2015         |
| ##       | 170 | 86.41783             | 11.767755             | 2015         |
| ##       | 169 | 86.52482             | 12.765957             | 2015         |
| ##       | 77  | 86.53846             | 9.615385              | 2015         |
| ##       | 90  | 86.53846             | 13.461538             | 2015         |
| ##       | 136 | 86.60714             | 13.392857             | 2015         |
| ##       | 42  | 86.66237             | 10.695876             | 2015         |
|          | 174 | 86.66667             | 11.904762             | 2015         |
| ##       | 53  | 86.81733             | 10.546139             | 2015         |
| ##       |     | 86.81818             | 8.636364              | 2015         |
|          | 173 | 86.90476             | 10.863095             | 2015         |
|          | 74  | 86.95652             | 13.043478             | 2015         |
|          | 10  | 87.01634             | 10.748065             | 2015         |
|          | 20  | 87.02929             | 10.146444             | 2015         |
|          | 3   | 87.05357             | 10.714286             | 2015         |
| ##       |     | 87.05882             | 11.372549             | 2015         |
| ##       |     | 87.12121             | 11.363636             | 2015         |
|          | 157 | 87.17949             | 8.974359              | 2015         |
|          | 133 | 87.29947             | 10.695187             | 2015         |
| ##       |     | 87.50000             | 12.500000             | 2015         |
| ##       |     | 87.61905             | 12.380952             | 2015         |
|          | 164 | 87.73585             | 9.080189              | 2015         |
| ##       |     | 87.80488             | 12.195122             | 2015         |
|          | 196 | 88.05970             | 10.447761             | 2015         |
| ##       |     | 88.39779             | 9.944751              | 2015         |
| ##       |     | 88.49315             | 10.684932             | 2015         |
| ##       |     | 88.57143             | 10.000000             | 2015         |
| ##       |     | 88.62069             | 9.655172              | 2015         |
|          | 125 | 88.88889             | 7.407407              | 2015         |
|          | 204 | 89.09091             | 9.090909              | 2015         |
|          | 108 | 89.18919             | 8.108108              | 2015         |
| ##<br>## |     | 89.37198<br>89.41176 | 10.628019<br>8.235294 | 2015         |
|          | 172 | 89.83051             | 8.474576              | 2015<br>2015 |
|          | 140 | 89.91860             | 8.829054              | 2015         |
| ##       |     | 89.92806             | 7.913669              | 2015         |
|          | 127 | 89.94413             | 9.497207              | 2015         |
|          | 203 | 89.96656             | 8.361204              | 2015         |
|          | 122 | 89.97253             | 8.104396              | 2015         |
| ##       |     | 90.00000             | 8.750000              | 2015         |
|          | 185 | 90.56604             | 7.547170              | 2015         |
|          | 109 | 90.66667             | 9.333333              | 2015         |
|          | 162 | 90.90909             | 7.451565              | 2015         |
|          | 2   | 91.11111             | 8.888889              | 2015         |
|          | 100 | 91.17647             | 8.823529              | 2015         |
|          | 104 | 91.30435             | 4.347826              | 2015         |
|          | 29  | 91.48936             | 8.510638              | 2015         |
|          | 165 | 91.75532             | 6.648936              | 2015         |
| ##       |     | 91.80328             | 8.196721              | 2015         |
|          | 153 | 91.82692             | 6.730769              | 2015         |
| ##       |     | 91.83908             | 6.321839              | 2015         |
|          | 115 | 92.00000             | 5.230769              | 2015         |
|          |     |                      |                       |              |

| ## | 64  | 92.12121             | 7.272727             | 2015         |
|----|-----|----------------------|----------------------|--------------|
| ## | 191 | 92.12598             | 7.086614             | 2015         |
| ## | 47  | 92.13483             | 5.617978             | 2015         |
| ## | 167 | 92.50000             | 5.000000             | 2015         |
| ## | 132 | 92.59259             | 7.407407             | 2015         |
| ## | 200 | 92.85714             | 7.142857             | 2015         |
|    | 177 | 92.94756             | 5.424955             | 2015         |
|    | 126 | 93.02326             | 4.651163             | 2015         |
|    | 17  | 93.26923             | 3.846154             | 2015         |
|    | 150 | 93.28859             | 5.369128             | 2015         |
|    | 114 | 93.30176             | 4.330176             | 2015         |
|    | 79  | 93.35022             | 5.256491             | 2015         |
| ## |     | 93.36456             | 5.620609             | 2015         |
|    | 18  | 93.40659             | 5.494505             | 2015         |
|    | 93  | 93.43284             | 4.179104             | 2015         |
|    | 182 | 93.47826             | 6.521739             | 2015         |
| ## |     | 93.75000             | 6.250000             | 2015         |
| ## | 210 | 93.93939             | 4.040404             | 2015         |
|    |     | 94.11765<br>94.26752 | 0.000000             | 2015         |
| ## | 139 | 94.26752             | 3.821656<br>3.338762 | 2015         |
|    | 194 | 94.73684             |                      | 2015         |
| ## |     | 94.75728             | 0.000000<br>5.242718 | 2015<br>2015 |
| ## |     | 94.89933             | 4.295302             | 2015         |
|    | 205 | 95.23810             | 4.761905             | 2015         |
| ## |     | 95.38905             | 4.034582             | 2015         |
|    | 144 | 95.45455             | 3.030303             | 2015         |
|    | 148 | 95.45455             | 0.000000             | 2015         |
| ## |     | 95.55556             | 2.22222              | 2015         |
|    | 199 | 95.65217             | 4.347826             | 2015         |
| ## |     | 95.80713             | 3.563941             | 2015         |
| ## | 95  | 96.15385             | 3.846154             | 2015         |
| ## | 106 | 96.22642             | 3.773585             | 2015         |
| ## | 73  | 96.29630             | 3.703704             | 2015         |
| ## | 134 | 96.55172             | 3.448276             | 2015         |
| ## | 184 | 96.96970             | 3.030303             | 2015         |
| ## | 81  | 97.14286             | 2.857143             | 2015         |
| ## | 37  | 100.00000            | 0.00000              | 2015         |
| ## | 54  | 100.00000            | 0.00000              | 2015         |
| ## | 88  | 100.00000            | 0.00000              | 2015         |
|    | 120 | 100.00000            | 0.000000             | 2015         |
|    | 129 | 100.00000            | 0.000000             | 2015         |
|    | 131 | 100.00000            | 0.000000             | 2015         |
|    | 137 | 100.00000            | 0.000000             | 2015         |
|    | 146 | 100.00000            | 0.000000             | 2015         |
|    | 155 | 100.00000            | 0.000000             | 2015         |
|    | 159 | 100.00000            | 0.000000             | 2015         |
|    | 192 | 100.00000            | 0.000000             | 2015         |
| ## | 11  | NA                   | NA                   | 2015         |
| ## | 30  | NA                   | NA                   | 2015         |
|    | 40  | NA                   | NA<br>NA             | 2015         |
| ## |     | NA                   | NA                   | 2015         |
|    | 61  | NA                   | NA<br>NA             | 2015         |
| ## | 00  | NA                   | NA                   | 2015         |

| ## |     |    |       |     | NA   |              | NA   | 2015 |
|----|-----|----|-------|-----|------|--------------|------|------|
| ## | 82  |    |       |     | NA   |              | NA   | 2015 |
|    | 87  |    |       |     | NA   |              | NA   | 2015 |
| ## | 112 |    |       |     | NA   |              | NA   | 2015 |
| ## | 113 |    |       |     | NA   |              | NA   | 2015 |
|    | 116 |    |       |     | NA   |              | NA   | 2015 |
| ## | 163 |    |       |     | NA   |              | NA   | 2015 |
| ## | 180 |    |       |     | NA   |              | NA   | 2015 |
| ## | 186 |    |       |     | NA   |              | NA   | 2015 |
| ## | 189 |    |       |     | NA   |              | NA   | 2015 |
| ## | 198 |    |       |     | NA   |              | NA   | 2015 |
|    | 206 |    |       |     | NA   |              | NA   | 2015 |
| ## |     | -  |       |     |      | Half K Total |      |      |
| ## | 166 | WA | 440   | 6   | 26   | 0            | 34   |      |
| ## | 176 | WA | 186   | 3   | 23   | 0            | 11   |      |
| ## | 183 | WA | 4248  | 52  | 350  | 0            | 320  |      |
| ## | 121 | WA | 1059  | 14  | 65   | 0            | 68   |      |
|    | 75  | WA | 80    | 0   | 0    | 2            | 8    |      |
|    | 27  | WA | 2639  | 38  | 186  | 0            | 200  |      |
|    | 101 | WA | 959   | 4   | 81   | 0            | 86   |      |
| ## | 33  | WA | 530   | 3   | 41   | 0            | 28   |      |
| ## | 187 | WA | 3059  | 0   | 275  | 1            | 241  |      |
| ## | 117 | WA | 224   | 6   | 20   | 0            | 14   |      |
| ## | 178 | WA | 191   | 2   | 8    | 0            | 12   |      |
| ## | 201 | WA | 7899  | 88  | 593  | 15           | 623  |      |
| ## | 193 | WA | 2308  | 22  | 197  | 0            | 234  |      |
|    | 50  | WA | 4888  | 64  | 345  | 7            | 334  |      |
| ## | 63  | WA | 19136 | 239 | 1616 | 0            | 1721 |      |
| ## | 208 | WA | 15818 | 285 | 1338 | 0            | 1329 |      |
| ## | 195 | WA | 3326  | 34  | 259  | 1            | 290  |      |
| ## | 57  | WA | 730   | 12  | 48   | 0            | 67   |      |
| ## | 58  | WA | 3630  | 33  | 320  | 1            | 321  |      |
| ## | 84  | WA | 221   | 3   | 21   | 0            | 17   |      |
| ## | 142 | WA | 3068  | 15  | 95   | 5            | 79   |      |
| ## | 83  | WA | 6595  | 124 | 521  | 2            | 550  |      |
| ## | 128 | WA | 4049  | 48  | 349  | 1            | 397  |      |
| ## | 105 | WA | 1063  | 17  | 78   | 0            | 61   |      |
| ## | 19  | WA | 1245  | 10  | 99   | 0            | 114  |      |
| ## | 181 | WA | 732   | 4   | 41   | 0            | 51   |      |
| ## | 60  | WA | 2041  | 23  | 0    | 133          | 121  |      |
| ## | 65  | WA | 1646  | 18  | 116  | 0            | 116  |      |
| ## | 99  | WA | 8221  | 134 | 686  | 0            | 657  |      |
| ## | 86  | WA | 938   | 6   | 89   | 0            | 82   |      |
| ## | 143 | WA | 2874  | 42  | 249  | 0            | 261  |      |
| ## | 119 | WA | 622   | 2   | 43   | 0            | 42   |      |
| ## | 1   | WA | 3221  | 49  | 266  | 0            | 265  |      |
| ## | 91  | WA | 11289 | 148 | 468  | 345          | 961  |      |
| ## | 130 | WA | 16987 | 118 | 881  | 565          | 1485 |      |
| ## | 7   | WA | 13465 | 87  | 124  | 664          | 947  |      |
| ## | 98  | WA | 300   | 6   | 22   | 0            | 14   |      |
| ## | 111 | WA | 2106  | 53  | 159  | 2            | 144  |      |
| ## | 202 | WA | 415   | 3   | 24   | 0            | 22   |      |
| ## | 22  | WA | 3628  | 77  | 322  | 2            | 283  |      |
| ## | 188 | WA | 6153  | 73  | 187  | 198          | 379  |      |
|    |     |    |       |     |      |              |      |      |

| ## | 190        | WA       | 23294        | 186       | 1823      | 18       | 1889      |
|----|------------|----------|--------------|-----------|-----------|----------|-----------|
|    | 151        | WA       | 357          | 7         | 0         | 26       | 26        |
| ## | 179        | WA       | 1206         | 18        | 95        | 0        | 86        |
| ## | 207        | WA       | 2253         | 14        | 145       | 3        | 154       |
| ## | 107        | WA       | 1585         | 41        | 140       | 0        | 148       |
| ## | 171        | WA       | 941          | 21        | 68        | 0        | 73        |
| ## | 154        | WA       | 2217         | 33        | 170       | 1        | 163       |
| ## | 156        | WA       | 1660         | 19        | 158       | 0        | 166       |
| ## | 5          | WA       | 15222        | 226       | 1200      | 16       | 1202      |
| ## | 49         | WA       | 22211        | 331       | 1651      | 0        | 1799      |
| ## | 12         | WA       | 2157         | 49        | 0         | 155      | 160       |
| ## | 28         | WA       | 12346        | 337       | 910       | 383      | 1288      |
| ## | 23         | WA       | 3002         | 16        | 189       | 0        | 203       |
| ## | 138        | WA       | 2807         | 30        | 209       | 0        | 199       |
| ## | 9          | WA       | 11060        | 68        | 791       | 0        | 887       |
| ## | 168        | WA       | 9559         | 98        | 537       | 189      | 695       |
| ## | 14         | WA       | 828          | 14        | 75        | 0        | 87        |
| ## | 118        | WA       | 986          | 20        | 76        | 0        | 82        |
|    | 175        | WA       | 29144        | 264       | 1799      | 657      | 2567      |
|    | 147        | WA       | 15331        | 260       | 1286      | 48       | 1338      |
|    | 135        | WA       | 3752         | 52        | 254       | 2        | 293       |
|    | 34         | WA       | 909          | 16        | 0         | 49       | 60        |
|    | 71         | WA       | 17187        | 187       | 162       | 1245     | 1372      |
| ## | 32         | WA       | 1779         | 35        | 118       | 1        | 132       |
|    | 209        | WA       | 5570         | 68        | 416       | 2        | 437       |
|    | 197        | WA       | 3148         | 21        | 222       | 0        | 231       |
|    | 158        | WA.      | 3511         | 32        | 261       | 4        | 264       |
|    | 123        | WA       | 5325         | 46        | 151       | 209<br>1 | 390       |
|    | 39         | WA       | 5772         | 64<br>161 | 417<br>70 | 836      | 487       |
|    | 149<br>124 | WA<br>WA | 12471<br>744 | 9         | 70<br>54  | 11       | 940<br>55 |
|    | 152        | WA       | 1435         | 15        | 83        | 3        | 93        |
| ## | 160        | WA       | 2860         | 52        | 0         | 170      | 197       |
| ## | 96         | WA       | 7250         | 62        | 194       | 287      | 469       |
|    | 161        | WA       | 4161         | 107       | 292       | 0        | 259       |
|    | 102        | WA       | 1863         | 32        | 59        | 93       | 151       |
| ## |            | WA       | 856          | 9         | 47        | 0        | 41        |
| ## |            | WA       | 27439        | 264       | 2067      | 9        | 2111      |
| ## |            | WA       | 4055         | 40        | 4         | 295      | 297       |
| ## |            | WA       | 917          | 9         | 64        | 0        | 59        |
| ## | 26         | WA       | 1069         | 16        | 74        | 2        | 72        |
| ## | 141        | WA       | 332          | 0         | 0         | 10       | 23        |
| ## | 43         | WA       | 3102         | 56        | 248       | 6        | 259       |
| ## | 16         | WA       | 446          | 10        | 30        | 0        | 42        |
| ## | 62         | WA       | 1191         | 11        | 81        | 0        | 87        |
| ## | 59         | WA       | 1496         | 27        | 120       | 0        | 137       |
| ## | 103        | WA       | 15012        | 127       | 0         | 1078     | 1231      |
| ## | 13         | WA       | 980          | 24        | 98        | 0        | 89        |
| ## | 110        | WA       | 5997         | 117       | 248       | 180      | 432       |
|    | 45         | WA       | 351          | 4         | 31        | 0        | 31        |
|    | 145        | WA       | 639          | 6         | 27        | 0        | 48        |
|    | 4          | WA       | 5479         | 56        | 71        | 285      | 368       |
|    | 170        | WA       | 29851        | 464       | 2479      | 76       | 2544      |
| ## | 169        | WA       | 1463         | 10        | 1         | 77       | 71        |

| ##       | 77         | τ.7 Λ    | 600         | E       | 0         | 21      | 45        |
|----------|------------|----------|-------------|---------|-----------|---------|-----------|
| ##       | 77<br>90   | WA<br>WA | 622<br>501  | 5<br>3  | 33        | 31<br>5 | 45<br>31  |
| ##       | 136        | WA       | 1223        | 17      | 56        | 26      | 88        |
|          | 42         | WA       | 20570       | 340     | 1037      | 544     | 1634      |
| ##       | 174        | WA       | 6615        | 50      | 533       | 21      | 550       |
| ##       | 53         | WA       | 7500        | 84      | 625       | 2       | 615       |
| ##       | 85         | WA       | 2886        | 54      | 0         | 221     | 231       |
| ##       | 173        | WA       | 8914        | 79      | 319       | 323     | 662       |
| ##       | 74         | WA       | 637         | 9       | 46        | 0       | 38        |
| ##       | 10         | WA       | 18234       | 243     | 1314      | 85      | 1460      |
| ##       | 20         | WA       | 10970       | 116     | 42        | 723     | 839       |
| ##       | 3          | WA       | 2721        | 31      | 192       | 4       | 210       |
| ##       | 51         | WA       | 3595        | 57      | 301       | 0       | 268       |
| ##       | 76         | WA       | 1621        | 10      | 105       | 2       | 108       |
| ##       | 157        | WA       | 795         | 6       | 0         | 48      | 43        |
| ##       | 133        | WA       | 8852        | 116     | 0         | 533     | 513       |
| ##       | 35         | WA       | 285         | 0       | 12        | 14      | 26        |
| ##       | 94         | WA.      | 1738        | 27      | 0         | 129     | 137       |
| ##       | 164        | WA       | 10100       | 94<br>9 | 0         | 620     | 639       |
| ##<br>## | 52<br>196  | WA<br>WA | 906<br>989  | 14      | 68<br>85  | 0       | 62<br>82  |
| ##       | 80         | WA       | 2345        | 27      | 19        | 131     | 215       |
| ##       | 70         | WA       | 4912        | 31      | 363       | 2       | 359       |
| ##       | 41         | WA       | 1891        | 16      | 121       | 3       | 107       |
| ##       | 24         | WA       | 4362        | 103     | 262       | 104     | 370       |
| ##       | 125        | WA       | 885         | 7       | 0         | 69      | 71        |
| ##       | 204        | WA       | 649         | 10      | 44        | 0       | 51        |
| ##       | 108        | WA       | 667         | 8       | 50        | 0       | 57        |
| ##       | 38         | WA       | 2403        | 17      | 127       | 21      | 171       |
| ##       | 97         | WA       | 1281        | 24      | 23        | 55      | 90        |
| ##       | 172        | WA       | 2021        | 23      | 50        | 96      | 153       |
| ##       | 140        | WA       | 21339       | 310     | 1608      | 0       | 1554      |
| ##       | 92         | WA       | 1876        | 35      | 67        | 88      | 151       |
| ##       | 127        | WA       | 2402        | 34      | 192       | 1       | 191       |
|          | 203        | WA       | 3603        | 38      | 237       | 83      | 259       |
| ##       | 122        | WA       | 9601        | 156     | 416       | 251     | 670       |
| ##       |            | WA       | 927         | 7       | 0         | 58      | 70<br>46  |
|          | 185<br>109 | WA<br>WA | 611<br>2082 | 9<br>34 | 40<br>174 | 0       | 46<br>148 |
|          | 162        | WA       | 9213        | 118     | 654       | 40      | 734       |
| ##       |            | WA       | 608         | 4       | 004       | 42      | 47        |
|          | 100        | WA       | 532         | 2       | 41        | 0       | 48        |
|          | 104        | WA       | 784         | 8       | 39        | 17      | 66        |
|          | 29         | WA       | 591         | 5       | 0         | 39      | 39        |
|          | 165        | WA       | 6571        | 114     | 263       | 271     | 530       |
| ##       | 44         | WA       | 1469        | 32      | 104       | 0       | 93        |
| ##       | 153        | WA       | 3238        | 44      | 44        | 166     | 226       |
| ##       | 21         | WA       | 12810       | 101     | 545       | 347     | 981       |
|          | 115        | WA       | 5558        | 120     | 155       | 321     | 495       |
|          | 64         | WA       | 1896        | 12      | 0         | 126     | 129       |
|          | 191        | WA       | 1562        | 10      | 0         | 85      | 90        |
| ##       |            | WA       | 2400        | 18      | 174       | 2       | 185       |
|          | 167        | WA       | 544         | 13      | 39        | 0       | 49        |
| ##       | 132        | WA       | 259         | 0       | 21        | 0       | 19        |

| ##       | 200        | WA          | 557        | 3      | 47       | 0      | 29       |
|----------|------------|-------------|------------|--------|----------|--------|----------|
|          | 177        | WA          | 7984       | 77     | 169      | 423    | 613      |
| ##       | 126        | WA          | 560        | 11     | 47       | 0      | 42       |
| ##       | 17         | WA          | 1295       | 10     | 0        | 90     | 102      |
| ##       | 150        | WA          | 2312       | 18     | 19       | 160    | 185      |
| ##       | 114        | WA          | 20653      | 228    | 0        | 1475   | 1662     |
| ##       | 79         | WA          | 26934      | 236    | 0        | 2005   | 2289     |
| ##       | 67         | WA          | 19184      | 238    | 915      | 474    | 1493     |
| ##       | 18         | WA          | 1547       | 10     | 0        | 124    | 119      |
| ##       | 93         | WA          | 4413       | 36     | 190      | 59     | 290      |
| ##       | 182        | WA          | 1087       | 11     | 90       | 1      | 81       |
| ##       | 89         | WA          | 172        | 2      | 12       | 0      | 13       |
| ##       | 210        | WA          | 1332       | 9      | 97       | 0      | 95       |
| ##       | 31         | WA          | 163        | 3      | 0        | 13     | 8        |
| ##       | 139        | WA          | 2632       | 53     | 0        | 204    | 236      |
|          | 48         | WA          | 19372      | 244    | 1176     | 379    | 1685     |
| ##       | 194        | WA          | 295        | 2      | 18       | 0      | 17       |
| ##       | 78         | WA          | 8354       | 76     | 219      | 434    | 673      |
|          | 8          | WA          | 19362      | 118    | 93       | 1296   | 1368     |
|          | 205        | WA          | 148        | 0      | 9        | 0      | 10       |
| ##       |            | WA          | 3851       | 49     | 87       | 84     | 257      |
|          | 144<br>148 | WA          | 823        | 9<br>4 | 61       | 3      | 55       |
| ##<br>## | 36         | WA          | 304<br>585 | 4<br>5 | 13<br>47 | 1<br>1 | 22<br>47 |
| ##       | 199        | WA<br>WA    | 265        | 1      | 14       | 0      | 14       |
| ##       | 159        | WA          | 6566       | 50     | 0        | 392    | 448      |
| ##       | 95         | WA          | 630        | 8      | 0        | 46     | 45       |
| ##       | 106        | WA          | 1468       | 20     | 0        | 78     | 83       |
|          | 73         | WA          | 922        | 6      | 60       | 0      | 54       |
| ##       | 134        | WA          | 314        | 3      | 23       | 0      | 23       |
| ##       | 184        | WA          | 234        | 4      | 20       | 0      | 12       |
|          | 81         | WA          | 412        | 5      | 32       | 0      | 29       |
| ##       | 37         | WA          | 436        | 7      | 38       | 0      | 31       |
| ##       | 54         | WA          | 913        | 7      | 0        | 56     | 55       |
| ##       | 88         | WA          | 663        | 5      | 55       | 0      | 64       |
| ##       | 120        | WA          | 220        | 3      | 20       | 0      | 13       |
| ##       | 129        | WA          | 175        | 3      | 6        | 0      | 18       |
| ##       | 131        | WA          | 295        | 0      | 17       | 0      | 24       |
|          | 137        | WA          | 337        | 4      | 27       | 0      | 32       |
|          | 146        | WA          | 589        | 7      | 40       | 0      | 40       |
|          | 155        | WA          | 199        | 3      | 10       | 0      | 15       |
|          | 159        | WA          | 242        | 5      | 15       | 1      | 21       |
|          | 192        | WA          | 455        | 5      | 33       | 0      | 31       |
| ##       | 11         | WA          | 88         | 1      | 0        | 7      | 7        |
|          | 30         | WA          | 1101       | 8      | 113      | 0      | 106      |
| ##       |            | WA          | 109        | 2      | 8        | 0      | 8        |
| ##       |            | WA          | 102        | 0      | 0        | 8      | 10       |
| ##       |            | AW          | 90         | 1      | 5        | 0      | 5        |
| ##       |            | AW<br>M.J.A | 226        | 6      | 15       | 0      | 19       |
| ##       |            | AW<br>M.J.A | 44<br>176  | 3      | 2        | 0      | 1        |
| ##<br>## |            | WA<br>WA    | 176<br>87  | 0      | 15<br>2  | 0<br>5 | 14<br>3  |
|          | 112        | WA<br>WA    | 52         | 0      | 0        | 5      | 0        |
|          | 113        | WA          | 250        | 0      | 17       | 0      | 15       |
| ##       | 113        | WA          | ∠50        | U      | 17       | 0      | 19       |

| ## | 116                               | WA         | 93         | 0          | 0          | 6          | 4          |
|----|-----------------------------------|------------|------------|------------|------------|------------|------------|
|    | 163                               | WA         | 44         | 0          | 0          | 6          | 3          |
| ## | 180                               | WA         | 81         | 0          | 9          | 0          | 12         |
| ## | 186                               | WA         | 219        | 1          | 0          | 16         | 14         |
| ## | 189                               | WA         | 689        | 5          | 21         | 35         | 54         |
| ## | 198                               | WA         | 46         | 1          | 0          | 2          | 1          |
| ## | 206                               | WA         | 85         | 1          | 7          | 0          | 6          |
| ## |                                   | Gr 2 Total | Gr 3 Total | Gr 4 Total | Gr 5 Total | Gr 6 Total | Gr 7 Total |
| ## | 166                               | 28         | 33         | 30         | 33         | 29         | 33         |
| ## | 176                               | 12         | 16         | 11         | 16         | 15         | 11         |
| ## | 183                               | 309        | 323        | 298        | 294        | 317        | 305        |
| ## | 121                               | 92         | 68         | 84         | 83         | 80         | 99         |
|    | 75                                | 6          | 8          | 5          | 6          | 0          | 10         |
| ## | 27                                | 192        | 211        | 187        | 186        | 180        | 203        |
| ## | 101                               | 83         | 83         | 85         | 85         | 69         | 69         |
| ## | 33                                | 42         | 42         | 28         | 39         | 52         | 37         |
| ## | 187                               | 243        | 232        | 237        | 219        | 237        | 244        |
|    | <ul><li>117</li><li>178</li></ul> | 17<br>9    | 17<br>16   | 24<br>17   | 17<br>19   | 12<br>21   | 12<br>12   |
|    | 201                               | 558        | 612        | 575        | 564        | 554        | 587        |
|    | 193                               | 213        | 216        | 216        | 176        | 173        | 139        |
|    | 50                                | 342        | 362        | 330        | 362        | 371        | 359        |
|    | 63                                | 1593       | 1496       | 1432       | 1389       | 1310       | 1368       |
|    | 208                               | 1361       | 1250       | 1163       | 1178       | 1102       | 1127       |
|    | 195                               | 273        | 303        | 274        | 258        | 281        | 260        |
|    | 57                                | 63         | 56         | 48         | 55         | 51         | 53         |
| ## | 58                                | 302        | 326        | 265        | 284        | 276        | 277        |
| ## | 84                                | 16         | 16         | 19         | 17         | 14         | 11         |
| ## | 142                               | 96         | 88         | 99         | 80         | 83         | 87         |
| ## | 83                                | 519        | 519        | 487        | 492        | 471        | 491        |
| ## | 128                               | 355        | 352        | 334        | 307        | 301        | 295        |
| ## | 105                               | 75         | 82         | 65         | 84         | 92         | 81         |
| ## | 19                                | 74         | 108        | 102        | 79         | 95         | 94         |
| ## | 181                               | 39         | 49         | 53         | 45         | 48         | 46         |
|    | 60                                | 142        | 130        | 120        | 158        | 142        | 136        |
| ## | 65                                | 129        | 114        | 125        | 113        | 118        | 140        |
| ## |                                   | 645        | 630        | 669        | 592        | 610        | 622        |
| ## |                                   | 78         | 84         | 62         | 75         | 62         | 71         |
|    | 143                               | 222<br>48  | 235<br>49  | 184<br>48  | 221<br>41  | 193<br>53  | 201<br>51  |
| ## | 119<br>1                          | 264        | 257        | 202        | 236        | 240        | 217        |
| ## |                                   | 886        | 848        | 827        | 817        | 801        | 825        |
|    | 130                               | 1487       | 1416       | 1380       | 1319       | 1313       | 1210       |
|    | 7                                 | 943        | 956        | 946        | 1010       | 1030       | 1040       |
| ## | 98                                | 29         | 17         | 26         | 27         | 26         | 33         |
|    | 111                               | 140        | 153        | 139        | 144        | 128        | 147        |
| ## | 202                               | 23         | 34         | 40         | 24         | 25         | 39         |
| ## | 22                                | 284        | 280        | 263        | 235        | 255        | 275        |
| ## | 188                               | 383        | 400        | 433        | 445        | 467        | 475        |
| ## | 190                               | 1965       | 1847       | 1775       | 1754       | 1689       | 1689       |
| ## | 151                               | 32         | 30         | 19         | 20         | 21         | 30         |
| ## | 179                               | 103        | 93         | 105        | 99         | 78         | 106        |
| ## | 207                               | 185        | 151        | 176        | 173        | 176        | 166        |
| ## | 107                               | 133        | 117        | 115        | 103        | 121        | 117        |

| ##              | 171        | 76         | 75          | 59         | 57         | 67         | 73         |
|-----------------|------------|------------|-------------|------------|------------|------------|------------|
|                 | 154        | 186        | 164         | 168        | 170        | 187        | 150        |
|                 | 156        | 117        | 139         | 116        | 141        | 122        | 117        |
| ##              | 5          | 1181       | 1134        | 1157       | 1122       | 1058       | 1090       |
| ##              | 49         | 1675       | 1636        | 1578       | 1669       | 1684       | 1579       |
| ##              | 12         | 178        | 153         | 171        | 146        | 153        | 185        |
| ##              | 28         | 1227       | 1122        | 1040       | 941        | 902        | 830        |
| ##              | 23         | 187        | 183         | 201        | 213        | 205        | 224        |
| ##              | 138        | 224        | 188         | 200        | 203        | 215        | 222        |
| ##              | 9          | 767        | 816         | 837        | 774        | 816        | 785        |
| ##              | 168        | 711        | 700         | 719        | 748        | 726        | 726        |
| ##              | 14         | 74         | 64          | 68         | 60         | 52         | 60         |
| ##              | 118        | 84         | 78          | 72         | 74         | 84         | 83         |
| ##              | 175        | 2573       | 2445        | 2266       | 2223       | 1996       | 2085       |
| ##              | 147        | 1326       | 1251        | 1177       | 1104       | 1078       | 1059       |
| ##              | 135        | 292        | 284         | 257        | 287        | 261        | 293        |
| ##              | 34         | 76         | 59          | 73         | 72         | 66         | 81         |
| ##              | 71         | 1414       | 1380        | 1273       | 1278       | 1300       | 1256       |
| ##              | 32         | 132        | 106         | 127        | 127        | 132        | 123        |
|                 | 209        | 422        | 387         | 409        | 400        | 432        | 407        |
|                 | 197<br>158 | 229        | 233<br>247  | 266<br>247 | 219        | 241<br>237 | 249<br>281 |
|                 | 123        | 268<br>351 | 416         | 407        | 289<br>450 | 421        | 565        |
|                 | 39         | 446        | 416         | 414        | 425        | 442        | 424        |
|                 | 149        | 960        | 953         | 856        | 965        | 991        | 930        |
| ##              | 124        | 55         | 62          | 61         | 60         | 45         | 45         |
| ##              | 152        | 108        | 112         | 90         | 106        | 110        | 130        |
| ##              | 160        | 195        | 194         | 195        | 223        | 207        | 209        |
| ##              | 96         | 503        | 479         | 493        | 471        | 480        | 485        |
| ##              | 161        | 267        | 307         | 274        | 277        | 259        | 251        |
| ##              | 102        | 142        | 132         | 156        | 142        | 140        | 115        |
| ##              | 25         | 55         | 53          | 54         | 54         | 53         | 64         |
| ##              | 72         | 2175       | 2055        | 1935       | 2102       | 2006       | 2091       |
| ##              | 46         | 286        | 288         | 283        | 301        | 288        | 292        |
| ##              | 56         | 66         | 64          | 69         | 70         | 67         | 68         |
| ##              | 26         | 70         | 77          | 68         | 84         | 89         | 75         |
| ##              | 141        | 46         | 26          | 27         | 32         | 25         | 27         |
| ##              | 43         | 243        | 224         | 222        | 236        | 227        | 224        |
|                 | 16         | 33         | 34          | 26         | 32         | 40         | 27         |
|                 | 62         | 88         | 91          | 92         | 103        | 77         | 85         |
|                 | 59         | 117        | 111         | 122        | 120        | 117        | 95         |
|                 | 103        | 1239       | 1200        | 1141       | 1227       | 1133       | 1145       |
|                 | 13         | 82         | 89          | 62         | 73         | 65         | 80         |
| ##              | 110        | 423        | 450         | 430        | 438        | 452        | 450        |
|                 | 45         | 30         | 22          | 25         | 19         | 26         | 32         |
| ##              | 145        | 33         | 41          | 37         | 47         | 73         | 64         |
| ##              | 4          | 424        | 397<br>2394 | 392        | 424        | 411        | 440        |
|                 | 170        | 2559       |             | 2266       | 2192       | 2225       | 2227       |
| ##<br>##        | 169<br>77  | 97<br>49   | 100<br>44   | 107<br>44  | 106<br>50  | 102<br>51  | 115<br>40  |
|                 | 90         | 49         | 32          | 32         | 39         | 34         | 40         |
|                 | 136        | 75         | 90          | 110        | 80         | 89         | 76         |
|                 | 42         | 1568       | 1486        | 1459       | 1493       | 1520       | 1468       |
|                 | 42<br>174  | 592        | 520         | 542        | 522        | 483        | 474        |
| ıт <del>П</del> | -1 T       | 002        | 020         | UTZ        | UZZ        | ±03        | 717        |

| ##       | 53         | 609        | 601       | 538       | 546       | 540        | 538       |
|----------|------------|------------|-----------|-----------|-----------|------------|-----------|
| ##       |            | 211        | 264       | 206       | 209       | 217        | 194       |
|          | 173        | 638        | 647       | 602       | 613       | 624        | 642       |
| ##       | 74         | 42         | 49        | 43        | 59        | 58         | 63        |
| ##       | 10         | 1491       | 1414      | 1392      | 1352      | 1370       | 1330      |
| ##       | 20         | 788        | 805       | 800       | 847       | 841        | 848       |
| ##       | 3          | 218        | 196       | 209       | 185       | 218        | 222       |
| ##       | 51         | 300        | 273       | 259       | 275       | 289        | 272       |
| ##       | 76         | 108        | 104       | 111       | 127       | 128        | 118       |
| ##       | 157        | 50         | 58        | 65        | 56        | 51         | 66        |
| ##       | 133        | 567        | 619       | 644       | 631       | 650        | 684       |
| ##       | 35         | 27         | 20        | 27        | 25        | 17         | 24        |
| ##       | 94         | 157        | 134       | 133       | 144       | 117        | 152       |
| ##       | 164        | 683        | 618       | 749       | 695       | 792        | 744       |
| ##       | 52         | 62         | 56        | 68        | 71        | 60         | 79        |
| ##       | 196        | 78         | 86        | 59        | 69        | 65         | 64        |
| ##       | 80         | 183        | 184       | 168       | 178       | 174        | 182       |
| ##       | 70         | 339        | 380       | 379       | 346       | 387        | 372       |
| ##       | 41         | 137        | 122       | 145       | 139       | 144        | 144       |
| ##       | 24         | 353        | 336       | 345       | 331       | 320        | 320       |
| ##       | 125        | 76         | 74        | 94        | 73        | 93         | 71        |
| ##       | 204        | 38         | 59        | 53        | 47        | 45         | 47        |
| ##       | 108        | 54         | 48        | 46        | 62        | 39         | 45        |
| ##       | 38         | 196        | 179       | 204       | 191       | 184        | 200       |
| ##       | 97         | 115        | 76        | 103       | 106       | 108        | 113       |
| ##       | 172        | 154        | 137       | 149       | 126       | 155        | 158       |
| ##       | 140        | 1627       | 1537      | 1513      | 1564      | 1603       | 1605      |
| ##       | 92         | 173        | 136       | 151       | 131       | 133        | 138       |
| ##       | 127        | 183        | 193       | 166       | 173       | 174        | 184       |
| ##       | 203        | 245        | 247       | 242       | 265       | 243        | 268       |
| ##       | 122        | 702        | 681       | 699       | 697       | 682        | 656       |
|          | 69         | 68         | 69        | 82        | 77        | 65         | 73        |
| ##       | 185        | 38         | 45        | 45        | 43        | 52         | 46        |
| ##<br>## | 109<br>162 | 165<br>752 | 152       | 177       | 162       | 160<br>672 | 150       |
| ##       | 2          | 34         | 686<br>42 | 661<br>35 | 746<br>42 | 51         | 692<br>47 |
|          | 100        | 43         | 39        | 41        | 35        | 27         | 39        |
|          | 104        | 60         | 72        | 56        | 57        | 65         | 52        |
| ##       | 29         | 38         | 44        | 53        | 32        | 47         | 40        |
|          | 165        | 557        | 517       | 509       | 541       | 514        | 483       |
|          | 44         | 90         | 99        | 97        | 75        | 115        | 113       |
|          | 153        | 234        | 261       | 268       | 235       | 264        | 237       |
| ##       | 21         | 977        | 975       | 981       | 970       | 1005       | 959       |
| ##       | 115        | 462        | 437       | 409       | 410       | 372        | 415       |
| ##       | 64         | 119        | 129       | 126       | 137       | 131        | 160       |
| ##       | 191        | 99         | 98        | 115       | 79        | 127        | 118       |
| ##       | 47         | 188        | 207       | 173       | 148       | 186        | 176       |
| ##       | 167        | 39         | 50        | 64        | 37        | 41         | 36        |
| ##       | 132        | 19         | 18        | 19        | 27        | 18         | 16        |
| ##       | 200        | 35         | 25        | 36        | 22        | 26         | 25        |
| ##       | 177        | 645        | 600       | 625       | 579       | 642        | 622       |
| ##       | 126        | 55         | 36        | 40        | 46        | 41         | 34        |
| ##       | 17         | 96         | 85        | 74        | 91        | 101        | 101       |
| ##       | 150        | 182        | 186       | 169       | 184       | 182        | 176       |
|          |            |            |           |           |           |            |           |

| ## | 114        | 1622     | 1667     | 1603     | 1551     | 1577     | 1502     |
|----|------------|----------|----------|----------|----------|----------|----------|
|    | 79         | 2284     | 2266     | 2256     | 2252     | 2123     | 2018     |
|    | 67         | 1552     | 1480     | 1545     | 1554     | 1513     | 1497     |
| ## | 18         | 119      | 119      | 105      | 105      | 129      | 118      |
| ## | 93         | 318      | 320      | 364      | 360      | 361      | 360      |
| ## | 182        | 83       | 100      | 93       | 84       | 78       | 85       |
| ## | 89         | 10       | 7        | 14       | 18       | 15       | 12       |
| ## | 210        | 82       | 103      | 91       | 108      | 119      | 96       |
| ## | 31         | 9        | 11       | 8        | 13       | 16       | 13       |
| ## | 139        | 241      | 199      | 202      | 203      | 206      | 206      |
| ## | 48         | 1619     | 1533     | 1506     | 1552     | 1402     | 1370     |
| ## | 194        | 17       | 26       | 28       | 17       | 14       | 30       |
| ## | 78         | 659      | 604      | 707      | 630      | 652      | 615      |
|    | 8          | 1534     | 1458     | 1415     | 1454     | 1488     | 1498     |
|    | 205        | 9        | 8        | 14       | 13       | 19       | 16       |
|    | 6          | 247      | 260      | 288      | 313      | 312      | 316      |
|    | 144        | 64       | 57       | 57       | 67       | 56       | 59       |
|    | 148        | 27       | 24       | 24       | 29       | 19       | 23       |
|    | 36         | 43       | 32       | 45       | 45       | 43       | 59       |
|    | 199        | 19       | 12       | 14       | 15       | 20       | 17       |
|    | 15         | 437      | 527      | 470      | 504      | 570      | 536      |
|    | 95         | 55       | 40       | 53       | 58       | 46       | 37       |
|    | 106        | 92       | 88       | 92       | 112      | 133      | 107      |
|    | 73         | 55       | 50       | 44       | 60       | 48       | 59<br>07 |
|    | 134<br>184 | 22<br>14 | 26       | 21<br>16 | 18<br>17 | 20<br>15 | 27<br>14 |
|    | 81         | 30       | 20<br>39 | 27       | 36       | 28       | 35       |
|    | 37         | 35       | 36       | 32       | 34       | 30       | 20       |
|    | 54         | 64       | 55       | 55       | 61       | 77       | 88       |
|    | 88         | 52       | 51       | 56       | 45       | 56       | 47       |
|    | 120        | 18       | 18       | 22       | 15       | 18       | 22       |
|    | 129        | 13       | 11       | 17       | 16       | 12       | 10       |
|    | 131        | 21       | 23       | 19       | 24       | 23       | 19       |
|    | 137        | 29       | 38       | 23       | 19       | 23       | 25       |
|    | 146        | 46       | 38       | 40       | 48       | 36       | 54       |
| ## | 155        | 10       | 12       | 21       | 17       | 19       | 11       |
| ## | 159        | 15       | 12       | 23       | 11       | 13       | 24       |
| ## | 192        | 27       | 36       | 40       | 32       | 38       | 30       |
| ## | 11         | 7        | 4        | 6        | 4        | 5        | 6        |
| ## | 30         | 94       | 102      | 84       | 103      | 92       | 100      |
| ## |            | 11       | 11       | 2        | 14       | 10       | 11       |
| ## |            | 9        | 8        | 7        | 8        | 8        | 9        |
|    | 61         | 4        | 4        | 12       | 5        | 12       | 0        |
| ## | 66         | 26       | 25       | 20       | 14       | 18       | 15       |
| ## | 68         | 4        | 7        | 5        | 4        | 3        | 5        |
| ## | 82         | 18       | 11       | 9        | 15       | 13       | 18       |
|    | 87         | 8        | 9        | 9        | 6        | 6        | 8        |
|    | 112        | 3        | 4        | 1        | 3        | 2        | 6        |
|    | 113        | 29       | 15       | 19       | 17       | 20       | 16       |
|    | 116        | 7        | 6        | 7        | 8        | 5        | 12       |
|    | 163        | 4        | 3        | 1        | 3        | 4        | 2        |
|    | 180        | 9        | 4        | 7        | 12       | 9        | 6        |
|    | 186        | 24       | 15<br>71 | 16<br>75 | 21       | 28       | 15       |
| ## | 189        | 83       | 71       | 75       | 70       | 75       | 81       |

|          | 198                               |      | 2         |    |   | 1         |    |     | 3           |    |    | 6         |          |     | 7         | 5 |
|----------|-----------------------------------|------|-----------|----|---|-----------|----|-----|-------------|----|----|-----------|----------|-----|-----------|---|
|          | 206                               | a 0  | 5         | ~  | _ | 5         | ~  | 4.0 | 6           | ~  |    | 7         | <b>a</b> | 4.0 | 8         | 5 |
| ##       | 166                               | Gr 8 | Total     | Gr | 9 |           | Gr | 10  | 1otal<br>37 | Gr | 11 |           | Gr       | 12  |           |   |
|          | 166<br>176                        |      | 32<br>17  |    |   | 39<br>12  |    |     | 16          |    |    | 37<br>11  |          |     | 49<br>15  |   |
|          | 183                               |      | 286       |    |   | 353       |    |     | 335         |    |    | 336       |          |     | 422       |   |
|          | 121                               |      | 80        |    |   | 71        |    |     | 91          |    |    | 89        |          |     | 89        |   |
|          | 75                                |      | 8         |    |   | 4         |    |     | 6           |    |    | 8         |          |     | 9         |   |
| ##       |                                   |      | 168       |    |   | 220       |    |     | 224         |    |    | 227       |          |     | 255       |   |
| ##       | 101                               |      | 66        |    |   | 70        |    |     | 51          |    |    | 50        |          |     | 81        |   |
| ##       | 33                                |      | 43        |    |   | 50        |    |     | 49          |    |    | 49        |          |     | 30        |   |
| ##       | 187                               |      | 208       |    |   | 239       |    |     | 226         |    |    | 208       |          |     | 249       |   |
| ##       | 117                               |      | 13        |    |   | 17        |    |     | 18          |    |    | 19        |          |     | 24        |   |
| ##       | 178                               |      | 12        |    |   | 12        |    |     | 22          |    |    | 13        |          |     | 18        |   |
| ##       | 201                               |      | 652       |    |   | 642       |    |     | 572         |    |    | 650       |          |     | 702       |   |
| ##       | 193                               |      | 156       |    |   | 168       |    |     | 138         |    |    | 158       |          |     | 124       |   |
| ##       | 50                                |      | 384       |    |   | 449       |    |     | 414         |    |    | 433       |          |     | 396       |   |
| ##       | 63                                |      | 1272      |    |   | 1653      |    |     | 1491        |    |    | 1359      |          |     | 1436      |   |
| ##       | 208                               |      | 1156      |    |   | 1183      |    |     | 1172        |    |    | 1102      |          |     | 1357      |   |
|          | 195                               |      | 254       |    |   | 243       |    |     | 185         |    |    | 218       |          |     | 227       |   |
|          | 57                                |      | 59        |    |   | 63        |    |     | 50          |    |    | 50        |          |     | 67        |   |
|          | 58                                |      | 259       |    |   | 255       |    |     | 241         |    |    | 227       |          |     | 276       |   |
| ##       |                                   |      | 19        |    |   | 26        |    |     | 21          |    |    | 12        |          |     | 12        |   |
|          | 142                               |      | 83        |    |   | 250       |    |     | 460         |    |    | 581       |          |     | 982       |   |
|          | 83                                |      | 484       |    |   | 529       |    |     | 501         |    |    | 494       |          |     | 535       |   |
|          | 128                               |      | 280       |    |   | 258       |    |     | 288         |    |    | 258       |          |     | 274       |   |
| ##       | 105                               |      | 71        |    |   | 93        |    |     | 101         |    |    | 85        |          |     | 95        |   |
| ##       | 19                                |      | 94        |    |   | 95<br>65  |    |     | 93          |    |    | 92        |          |     | 106       |   |
| ##<br>## | 181<br>60                         |      | 66<br>153 |    |   | 65<br>146 |    |     | 68<br>219   |    |    | 82<br>177 |          |     | 79<br>264 |   |
| ##       | 65                                |      | 136       |    |   | 161       |    |     | 138         |    |    | 124       |          |     | 116       |   |
|          | 99                                |      | 598       |    |   | 627       |    |     | 626         |    |    | 588       |          |     | 671       |   |
|          | 86                                |      | 67        |    |   | 73        |    |     | 59          |    |    | 62        |          |     | 74        |   |
|          | 143                               |      | 213       |    |   | 233       |    |     | 195         |    |    | 216       |          |     | 251       |   |
| ##       | 119                               |      | 57        |    |   | 37        |    |     | 41          |    |    | 59        |          |     | 53        |   |
| ##       | 1                                 |      | 235       |    |   | 248       |    |     | 266         |    |    | 227       |          |     | 298       |   |
| ##       | 91                                |      | 867       |    |   | 863       |    |     | 926         |    |    | 867       |          |     | 988       |   |
| ##       | 130                               |      | 1294      |    |   | 1182      |    |     | 1140        |    |    | 1176      |          |     | 1139      |   |
| ##       | 7                                 |      | 1088      |    |   | 1246      |    |     | 1188        |    |    | 1137      |          |     | 1146      |   |
| ##       | 98                                |      | 20        |    |   | 21        |    |     | 20          |    |    | 26        |          |     | 19        |   |
| ##       | 111                               |      | 156       |    |   | 177       |    |     | 186         |    |    | 194       |          |     | 237       |   |
| ##       | 202                               |      | 42        |    |   | 39        |    |     | 44          |    |    | 34        |          |     | 25        |   |
| ##       |                                   |      | 265       |    |   | 316       |    |     | 284         |    |    | 265       |          |     | 299       |   |
|          | 188                               |      | 525       |    |   | 532       |    |     | 535         |    |    | 550       |          |     | 644       |   |
|          | 190                               |      | 1762      |    |   | 1795      |    |     | 1788        |    |    | 1643      |          |     | 1857      |   |
|          | 151                               |      | 19        |    |   | 38        |    |     | 33          |    |    | 31        |          |     | 32        |   |
|          | 179                               |      | 84        |    |   | 88        |    |     | 99          |    |    | 87        |          |     | 83        |   |
|          | 207                               |      | 172       |    |   | 169       |    |     | 183         |    |    | 177       |          |     | 223       |   |
|          | 107                               |      | 102       |    |   | 132       |    |     | 109         |    |    | 122       |          |     | 126       |   |
|          | <ul><li>171</li><li>154</li></ul> |      | 74<br>191 |    |   | 80<br>174 |    |     | 88<br>168   |    |    | 70<br>153 |          |     | 81<br>172 |   |
|          | 154                               |      | 133       |    |   | 125       |    |     | 119         |    |    | 119       |          |     | 88        |   |
| ##       |                                   |      | 1085      |    |   | 1278      |    |     | 1168        |    |    | 1205      |          |     | 1326      |   |
| ##       |                                   |      | 1657      |    |   | 1711      |    |     | 1883        |    |    | 1793      |          |     | 1896      |   |
|          | -                                 |      |           |    |   | ·         |    |     |             |    |    |           |          |     |           |   |

|          | 12       | 158        | 168       | 184       | 167        | 179        |
|----------|----------|------------|-----------|-----------|------------|------------|
|          | 28       | 823        | 774       | 777       | 681        | 648        |
|          | 23       | 217        | 233       | 254       | 304        | 389        |
|          | 138      | 211        | 223       | 230       | 251        | 232        |
|          | 9        | 832        | 889       | 939       | 919        | 1008       |
|          | 168      | 775        | 716       | 701       | 741        | 875        |
|          | 14       | 62         | 62        | 47        | 61         | 56         |
|          | 118      | 68         | 73        | 62        | 81         | 69         |
|          | 175      | 1998       | 2124      | 2080      | 2001       | 2330       |
| ##       | 147      | 1115       | 1117      | 1132      | 1066       | 1234       |
|          | 135      | 283        | 277       | 300       | 314        | 355        |
| ##       | 34       | 73         | 77        | 75        | 73         | 75         |
| ##       | 71       | 1230       | 1370      | 1333      | 1235       | 1339       |
| ##       | 32       | 136        | 144       | 153       | 144        | 204        |
|          | 209      | 436        | 408       | 468       | 466        | 480        |
|          | 197      | 249        | 274       | 238       | 239        | 258        |
| ##       | 158      | 288        | 290       | 301       | 260        | 274        |
|          | 123      | 689        | 396       | 351       | 305        | 224        |
|          | 39       | 452        | 430       | 447       | 475        | 463        |
|          | 149      | 926        | 1071      | 981       | 975        | 1017       |
|          | 124      | 55         | 64        | 56        | 66         | 55         |
|          | 152      | 136        | 128       | 110       | 107        | 119        |
|          | 160      | 227        | 231       | 275       | 265        | 272        |
|          | 96       | 502        | 630       | 587       | 559        | 1111       |
|          | 161      | 284        | 432       | 418       | 408        | 433        |
|          | 102      | 161        | 130       | 152       | 137        | 153        |
| ##       | 25       | 74         | 85        | 84        | 88         | 104        |
| ##       | 72       | 2080       | 2489      | 2238      | 2091       | 1990       |
| ##       | 46       | 324        | 342       | 320       | 360        | 375        |
| ##       | 56       | 72         | 89        | 76        | 75         | 78         |
| ##       | 26       | 92         | 92        | 92        | 97         | 85         |
| ##       | 141      | 25         | 21        | 23        | 27         | 20         |
| ##       | 43       | 233        | 258       | 235       | 237        | 250        |
| ##       | 16       | 31         | 42        | 38        | 37         | 34         |
| ##<br>## | 62<br>59 | 106<br>126 | 67<br>122 | 87<br>107 | 108<br>101 | 119<br>101 |
|          | 103      | 1107       | 1119      | 1143      | 1123       | 1126       |
|          | 13       | 73         | 73        | 64        | 63         | 69         |
|          | 110      | 503        | 476       | 484       | 493        | 538        |
| ##       |          | 24         | 24        | 29        | 22         | 36         |
|          | 145      | 86         | 40        | 43        | 57         | 43         |
|          | 4        | 437        | 436       | 443       | 475        | 476        |
|          | 170      | 2200       | 2254      | 2169      | 2107       | 2159       |
|          | 169      | 115        | 129       | 129       | 154        | 160        |
|          | 77       | 41         | 62        | 69        | 58         | 38         |
| ##       | 90       | 44         | 40        | 42        | 44         | 34         |
|          | 136      | 82         | 98        | 121       | 107        | 125        |
|          | 42       | 1473       | 1625      | 1578      | 1686       | 1999       |
|          | 174      | 519        | 491       | 447       | 477        | 444        |
| ##       | 53       | 544        | 578       | 584       | 576        | 604        |
|          | 85       | 238        | 219       | 213       | 222        | 241        |
|          | 173      | 677        | 876       | 867       | 741        | 683        |
|          | 74       | 50         | 60        | 58        | 31         | 40         |
|          | 10       | 1422       | 1454      | 1308      | 1364       | 1478       |
|          |          |            | 1101      | 1000      | 1001       | 11.0       |

|    | 20  | 839  | 876  | 893  | 884  | 945  |
|----|-----|------|------|------|------|------|
| ## | 3   | 202  | 189  | 214  | 235  | 227  |
| ## | 51  | 270  | 310  | 247  | 271  | 260  |
| ## | 76  | 146  | 159  | 134  | 140  | 131  |
| ## | 157 | 66   | 65   | 70   | 76   | 81   |
| ## | 133 | 713  | 769  | 792  | 879  | 858  |
| ## | 35  | 16   | 23   | 22   | 14   | 18   |
| ## | 94  | 134  | 136  | 110  | 125  | 130  |
| ## | 164 | 775  | 943  | 938  | 910  | 994  |
| ## | 52  | 69   | 88   | 81   | 72   | 70   |
| ## | 196 | 78   | 86   | 86   | 86   | 65   |
| ## | 80  | 175  | 168  | 196  | 184  | 188  |
| ## | 70  | 388  | 413  | 376  | 383  | 425  |
| ## | 41  | 158  | 173  | 171  | 179  | 148  |
| ## | 24  | 328  | 346  | 309  | 313  | 325  |
| ## | 125 | 66   | 52   | 55   | 57   | 34   |
| ## | 204 | 52   | 50   | 59   | 55   | 49   |
| ## | 108 | 47   | 44   | 57   | 60   | 58   |
| ## | 38  | 189  | 177  | 180  | 205  | 179  |
| ## | 97  | 72   | 132  | 110  | 83   | 95   |
| ## | 172 | 152  | 182  | 172  | 140  | 197  |
| ## | 140 | 1724 | 1728 | 1735 | 1771 | 1770 |
| ## | 92  | 140  | 120  | 146  | 149  | 153  |
| ## | 127 | 205  | 187  | 187  | 182  | 184  |
| ## | 203 | 289  | 297  | 294  | 296  | 338  |
| ## | 122 | 716  | 873  | 830  | 841  | 887  |
| ## | 69  | 71   | 81   | 70   | 74   | 69   |
| ## | 185 | 41   | 48   | 61   | 54   | 52   |
| ## | 109 | 154  | 156  | 172  | 155  | 157  |
| ## | 162 | 703  | 813  | 735  | 726  | 599  |
| ## | 2   | 56   | 48   | 61   | 60   | 43   |
| ## | 100 | 42   | 32   | 45   | 48   | 52   |
| ## | 104 | 66   | 66   | 55   | 48   | 65   |
| ## | 29  | 41   | 70   | 41   | 56   | 51   |
| ## | 165 | 508  | 489  | 469  | 459  | 461  |
| ## |     | 99   | 115  | 143  | 146  | 180  |
|    | 153 | 264  | 274  | 250  | 246  | 269  |
| ## |     | 1048 | 1042 | 985  | 969  | 1026 |
|    | 115 | 401  | 413  | 397  | 408  | 463  |
| ## |     | 140  | 189  | 147  | 188  | 175  |
|    | 191 | 143  | 164  | 158  | 145  | 141  |
| ## |     | 188  | 192  | 195  | 197  | 189  |
| ## | 167 | 43   | 41   | 32   | 39   | 34   |
| ## | 132 | 22   | 22   | 19   | 19   | 20   |
|    | 200 | 34   | 45   | 44   | 62   | 127  |
| ## | 177 | 618  | 626  | 581  | 606  | 635  |
| ## | 126 | 40   | 54   | 52   | 35   | 38   |
| ## | 17  | 103  | 113  | 100  | 126  | 113  |
| ## | 150 | 190  | 167  | 189  | 166  | 157  |
| ## | 114 | 1571 | 1510 | 1616 | 1551 | 1746 |
|    | 79  | 2060 | 1935 | 1852 | 1827 | 1767 |
| ## |     | 1442 | 1532 | 1395 | 1447 | 1345 |
| ## | 18  | 124  | 122  | 131  | 114  | 118  |
| ## | 93  | 374  | 364  | 334  | 377  | 342  |

| ##       | 182       | 81        | 78        | 72        | 68        | 93        |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|
|          | 89        | 16        | 13        | 13        | 10        | 19        |
| ##       | 210       | 101       | 116       | 111       | 107       | 106       |
| ##       | 31        | 18        | 15        | 13        | 9         | 17        |
| ##       | 139       | 203       | 204       | 181       | 175       | 172       |
|          | 48        | 1448      | 1444      | 1408      | 1408      | 1442      |
| ##<br>## | 194<br>78 | 23<br>708 | 27<br>619 | 32<br>611 | 22<br>614 | 24<br>609 |
| ##       | 8         | 1457      | 1589      | 1545      | 1585      | 1582      |
| ##       | 205       | 6         | 8         | 1343      | 1385      | 1382      |
| ##       | 6         | 280       | 367       | 347       | 345       | 348       |
| ##       | 144       | 73        | 71        | 66        | 75        | 59        |
| ##       | 148       | 20        | 29        | 24        | 25        | 24        |
| ##       | 36        | 47        | 53        | 45        | 39        | 39        |
| ##       | 199       | 27        | 32        | 21        | 34        | 26        |
| ##       | 15        | 541       | 567       | 553       | 513       | 508       |
| ##       | 95        | 54        | 47        | 48        | 45        | 56        |
| ##       | 106       | 128       | 143       | 134       | 139       | 139       |
|          | 73        | 54        | 113       | 118       | 82        | 125       |
| ##       | 134       | 33        | 22        | 25        | 24        | 30        |
| ##       | 184       | 17        | 27        | 22        | 24        | 16        |
| ##       | 81        | 35        | 34        | 31        | 27        | 29        |
| ##       | 37        | 37        | 29        | 45        | 28        | 41        |
| ##       | 54        | 75        | 84        | 86        | 76        | 81        |
| ##       | 88        | 44        | 41        | 62        | 40        | 50        |
| ##       | 120       | 15        | 13        | 18        | 13        | 15        |
| ##       | 129       | 14        | 20        | 7         | 14        | 17        |
| ##       | 131       | 24        | 20        | 29        | 21        | 31        |
| ##       | 137       | 23        | 18        | 26        | 27        | 27        |
| ##       | 146       | 35        | 55        | 49        | 48        | 60        |
| ##       | 155       | 16        | 21        | 8         | 20        | 19        |
| ##       | 159       | 27        | 22        | 20        | 26        | 12        |
| ##       | 192       | 34        | 33        | 31        | 35        | 55        |
| ##       | 11        | 5         | 12        | 11        | 8         | 6         |
| ##       | 30        | 82        | 118       | 18        | 39        | 50        |
|          | 40        | 8         | 12        | 8         | 3         | 3         |
| ##       |           | 9         | 6         | 9         | 1         | 10        |
| ##       |           | 8         | 10        | 8         | 10        | 7         |
| ##       |           | 18        | 17        | 13        | 16        | 10        |
| ##       |           | 4         | 3         | 1         | 2         | 3         |
| ##       |           | 18        | 13        | 10        | 16        | 6         |
| ##       |           | 9         | 6         | 6         | 4         | 6         |
|          | 112       | 3         | 7         | 3         | 10        | 5         |
|          | 113       | 20        | 22        | 20        | 17        | 23        |
|          | 116       | 13        | 6         | 8         | 8         | 3         |
|          | 163       | 3         | 5         | 4         | 4         | 2         |
|          | 180       | 2         | 1         | 2         | 4         | 4         |
|          | 186       | 14        | 15        | 13        | 15        | 13        |
|          | 189       | 95        | 9         | 10        | 5         | 5         |
|          | 198       | 4         | 2         | 5         | 3         | 5         |
| ##       | 206       | 9         | 8         | 8         | 4         | 7         |

I am currious what the order of School Districts with highest revenue rates looks like.

### FullData[order(-FullData\$`Total Revenue`),]

| ## |           |                   | Dict   | rict Name        | State.x            | Voor | To+al | Powonijo       |
|----|-----------|-------------------|--------|------------------|--------------------|------|-------|----------------|
|    | 175       | Tacoma            |        |                  | Washington         |      | Iouai | 415924         |
|    | 170       |                   |        |                  | Washington         |      |       | 403857         |
| ## |           | Lake Washington   |        |                  | _                  |      |       | 347870         |
| ## |           | _                 |        |                  | Washington         |      |       | 324455         |
| ## | . –       |                   |        |                  | Washington         |      |       | 307196         |
| ## | 49        | Federal Way       |        |                  | •                  |      |       | 278629         |
| ## |           | •                 |        |                  | Washington         |      |       | 269240         |
| ## | 190       |                   |        |                  | Washington         |      |       | 269135         |
| ## | 114       |                   |        |                  | Washington         |      |       | 266155         |
| ## | 140       |                   |        |                  | Washington         |      |       | 252248         |
| ## | 48        |                   |        |                  | Washington         |      |       | 248748         |
| ## | 63        |                   |        |                  | Washington         |      |       | 248401         |
| ## | 67        | _                 |        |                  | Washington         |      |       | 246417         |
| ## | 130       | _                 |        |                  | Washington         |      |       | 236614         |
| ## | 10        |                   |        |                  | Washington         |      |       | 228415         |
| ## | 147       |                   |        |                  | Washington         |      |       | 218285         |
| ## | 208       | Yakima            | School | District         | Washington         | 2015 |       | 213556         |
| ## | 5         | Auburn            | School | District         | Washington         | 2015 |       | 207809         |
| ## | 71        | Kennewick         | School | District         | Washington         | 2015 |       | 197862         |
| ## | 28        | Clover Park       | School | District         | Washington         | 2015 |       | 194044         |
| ## | 103       | Mukilteo          | School | District         | Washington         | 2015 |       | 184170         |
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## 163
                 1501
                                  579
                                                17404
## 87
                 1828
                                  175
                                                09207
## 198
                 1840
                                  201
                                               01109
## 68
                                  170
                 1721
                                                11056
## 206
                 1701
                                   74
                                                20094
                                   89
## 112
                 1554
                                                25200
##
       Adjusted 5-Year Cohort Graduation Rate Cohort dropout rate School Year
## 175
                                         82.46753
                                                                                 2015
                                                              15.367965
## 170
                                         86.41783
                                                              11.767755
                                                                                 2015
## 79
                                         93.35022
                                                               5.256491
                                                                                 2015
## 72
                                         84.71233
                                                              12.821918
                                                                                 2015
## 8
                                         94.89933
                                                               4.295302
                                                                                 2015
## 49
                                         81.63636
                                                              16.060606
                                                                                 2015
## 42
                                         86.66237
                                                              10.695876
                                                                                 2015
```

| ## | 190 | 79.08654 | 16.766827 | 2015 |
|----|-----|----------|-----------|------|
| ## | 114 | 93.30176 | 4.330176  | 2015 |
| ## | 140 | 89.91860 | 8.829054  | 2015 |
| ## | 48  | 94.46254 | 3.338762  | 2015 |
| ## | 63  | 72.29978 | 22.556943 | 2015 |
| ## | 67  | 93.36456 | 5.620609  | 2015 |
| ## | 130 | 78.43719 | 17.804154 | 2015 |
| ## | 10  | 87.01634 | 10.748065 | 2015 |
| ## | 147 | 82.54122 | 14.936954 | 2015 |
| ## | 208 | 73.47866 | 24.523161 | 2015 |
| ## | 5   | 81.51042 | 15.711806 | 2015 |
| ## | 71  | 82.98246 | 14.649123 | 2015 |
| ## | 28  | 81.92771 | 14.056225 | 2015 |
| ## | 103 | 85.63485 | 10.750695 | 2015 |
| ## | 149 | 83.75000 | 11.562500 | 2015 |
| ## | 9   | 82.09607 | 15.502183 | 2015 |
| ## | 21  | 91.83908 | 6.321839  | 2015 |
| ## | 7   | 78.49246 | 16.984925 | 2015 |
| ## | 20  | 87.02929 | 10.146444 | 2015 |
| ## | 91  | 78.38150 | 17.456647 | 2015 |
| ## | 164 | 87.73585 | 9.080189  | 2015 |
| ## | 162 | 90.90909 | 7.451565  | 2015 |
| ## | 122 | 89.97253 | 8.104396  | 2015 |
| ## | 173 | 86.90476 | 10.863095 | 2015 |
| ## | 168 | 82.14748 | 12.807245 | 2015 |
| ## | 177 | 92.94756 | 5.424955  | 2015 |
| ## | 53  | 86.81733 | 10.546139 | 2015 |
| ## | 133 | 87.29947 | 10.695187 | 2015 |
| ## | 99  | 77.04348 | 18.956522 | 2015 |
| ## | 201 | 70.26087 | 25.739130 | 2015 |
| ## | 78  | 94.75728 | 5.242718  | 2015 |
| ## | 188 | 79.06198 | 19.262982 | 2015 |
| ## | 83  | 75.15030 | 18.837675 | 2015 |
| ## | 96  | 84.09704 | 13.746631 | 2015 |
| ## | 15  | 95.80713 | 3.563941  | 2015 |
| ## | 174 | 86.66667 | 11.904762 | 2015 |
| ## | 165 | 91.75532 | 6.648936  | 2015 |
| ## | 110 | 86.17886 | 10.772358 | 2015 |
| ## | 39  | 83.67347 | 14.795918 | 2015 |
| ## | 115 | 92.00000 | 5.230769  | 2015 |
| ## | 209 | 83.29356 | 14.319809 | 2015 |
| ## | 4   | 86.29442 | 11.421320 | 2015 |
| ## | 93  | 93.43284 | 4.179104  | 2015 |
| ## | 50  | 72.19101 | 23.595506 | 2015 |
| ## | 158 | 83.61345 | 13.025210 | 2015 |
| ## | 70  | 88.49315 | 10.684932 | 2015 |
| ## |     | 88.62069 | 9.655172  | 2015 |
|    | 161 | 84.25414 | 13.812155 | 2015 |
| ## |     | 95.38905 | 4.034582  | 2015 |
| ## |     | 84.74576 | 14.124294 | 2015 |
|    | 128 | 75.41667 | 22.916667 | 2015 |
|    | 203 | 89.96656 | 8.361204  | 2015 |
|    | 187 | 68.84422 | 29.145729 | 2015 |
|    | 183 | 55.16129 | 36.774194 | 2015 |
|    |     | -        | -         |      |

| ## 123 | 83.65385 | 16.346154 | 2015 |
|--------|----------|-----------|------|
| ## 135 | 82.58065 | 15.483871 | 2015 |
| ## 1   | 77.68595 | 16.528926 | 2015 |
| ## 51  | 87.05882 | 11.372549 | 2015 |
| ## 207 | 79.67914 | 17.112299 | 2015 |
| ## 195 | 73.68421 | 24.812030 | 2015 |
| ## 22  | 78.62903 | 18.951613 | 2015 |
| ## 153 | 91.82692 | 6.730769  | 2015 |
| ## 58  | 75.00000 | 20.588235 | 2015 |
| ## 197 | 83.33333 | 15.000000 | 2015 |
| ## 43  | 85.04274 | 14.102564 | 2015 |
| ## 3   | 87.05357 | 10.714286 | 2015 |
| ## 23  | 81.93833 | 15.418502 | 2015 |
| ## 143 | 77.24868 | 22.751323 | 2015 |
| ## 138 | 82.05128 | 14.871795 | 2015 |
| ## 139 | 94.26752 | 3.821656  | 2015 |
| ## 160 | 84.09091 | 14.545455 | 2015 |
| ## 27  | 65.00000 | 28.750000 | 2015 |
| ## 85  | 86.81818 | 8.636364  | 2015 |
| ## 80  | 88.39779 | 9.944751  | 2015 |
| ## 12  | 81.69935 | 16.339869 | 2015 |
| ## 38  | 89.37198 | 10.628019 | 2015 |
| ## 127 | 89.94413 | 9.497207  | 2015 |
| ## 60  | 76.92308 | 16.410256 | 2015 |
| ## 150 | 93.28859 | 5.369128  | 2015 |
| ## 142 | 75.00000 | 17.708333 | 2015 |
| ## 154 | 80.91603 | 12.977099 | 2015 |
| ## 111 | 78.57143 | 20.918367 | 2015 |
| ## 47  | 92.13483 | 5.617978  | 2015 |
| ## 193 | 70.86614 | 26.771654 | 2015 |
| ## 30  | NA       | NA        | 2015 |
| ## 156 | 81.13208 | 16.981132 | 2015 |
| ## 109 | 90.66667 | 9.333333  | 2015 |
| ## 102 | 84.56790 | 14.197531 | 2015 |
| ## 191 | 92.12598 | 7.086614  | 2015 |
| ## 172 | 89.83051 | 8.474576  | 2015 |
| ## 41  | 88.57143 | 10.000000 | 2015 |
| ## 92  | 89.92806 | 7.913669  | 2015 |
| ## 65  | 76.98413 | 22.22222  | 2015 |
| ## 64  | 92.12121 | 7.272727  | 2015 |
| ## 32  | 83.05085 | 15.819209 | 2015 |
| ## 107 | 80.35714 | 16.964286 | 2015 |
| ## 94  | 87.61905 | 12.380952 | 2015 |
| ## 169 | 86.52482 | 12.765957 | 2015 |
| ## 59  | 85.57692 | 13.461538 | 2015 |
| ## 44  | 91.80328 | 8.196721  | 2015 |
| ## 152 | 84.09091 | 12.878788 | 2015 |
| ## 18  | 93.40659 | 5.494505  | 2015 |
| ## 106 | 96.22642 | 3.773585  | 2015 |
| ## 76  | 87.12121 | 11.363636 | 2015 |
| ## 17  | 93.26923 | 3.846154  | 2015 |
| ## 97  | 89.41176 | 8.235294  | 2015 |
| ## 136 | 86.60714 | 13.392857 | 2015 |
| ## 118 | 82.35294 | 15.686275 | 2015 |
|        |          |           |      |

| ## | 210 | 93.93939  | 4.040404  | 2015 |
|----|-----|-----------|-----------|------|
| ## | 62  | 85.39326  | 14.606742 | 2015 |
| ## | 101 | 67.56757  | 25.675676 | 2015 |
| ## | 19  | 76.31579  | 20.175439 | 2015 |
| ## | 26  | 84.88372  | 15.116279 | 2015 |
| ## |     | 86.53846  | 9.615385  | 2015 |
|    | 105 | 76.00000  | 23.000000 | 2015 |
| ## |     | 74.41860  | 20.930233 | 2015 |
|    | 179 | 79.34783  | 20.652174 | 2015 |
|    | 121 | 57.54717  | 32.075472 | 2015 |
|    | 182 | 93.47826  |           |      |
|    |     |           | 6.521739  | 2015 |
| ## |     | 82.85714  | 17.142857 | 2015 |
|    | 196 | 88.05970  | 10.447761 | 2015 |
|    | 13  | 85.71429  | 12.698413 | 2015 |
| ## |     | 84.84848  | 15.151515 | 2015 |
|    | 171 | 80.45977  | 17.241379 | 2015 |
| ## | 54  | 100.00000 | 0.00000   | 2015 |
| ## | 52  | 87.80488  | 12.195122 | 2015 |
| ## | 86  | 77.04918  | 19.672131 | 2015 |
| ## | 157 | 87.17949  | 8.974359  | 2015 |
| ## | 125 | 88.88889  | 7.407407  | 2015 |
| ## | 189 | NA        | NA        | 2015 |
| ## | 144 | 95.45455  | 3.030303  | 2015 |
| ## | 119 | 77.58621  | 20.689655 | 2015 |
| ## | 25  | 84.61538  | 14.102564 | 2015 |
| ## |     | 100.00000 | 0.00000   | 2015 |
| ## |     | 96.29630  | 3.703704  | 2015 |
|    | 108 | 89.18919  | 8.108108  | 2015 |
|    | 14  | 82.25806  | 16.129032 | 2015 |
| ## |     | 90.00000  | 8.750000  | 2015 |
|    |     |           |           |      |
|    | 16  | 85.29412  | 11.764706 | 2015 |
|    | 200 | 92.85714  | 7.142857  | 2015 |
|    | 124 | 84.09091  | 11.363636 | 2015 |
|    | 167 | 92.50000  | 5.000000  | 2015 |
|    | 145 | 86.27451  | 11.764706 | 2015 |
|    | 204 | 89.09091  | 9.090909  | 2015 |
| ## | 104 | 91.30435  | 4.347826  | 2015 |
| ## | 95  | 96.15385  | 3.846154  | 2015 |
| ## | 74  | 86.95652  | 13.043478 | 2015 |
| ## | 181 | 76.31579  | 21.052632 | 2015 |
| ## | 36  | 95.55556  | 2.22222   | 2015 |
| ## | 126 | 93.02326  | 4.651163  | 2015 |
| ## | 29  | 91.48936  | 8.510638  | 2015 |
| ## | 33  | 68.75000  | 31.250000 | 2015 |
| ## | 202 | 78.57143  | 21.428571 | 2015 |
| ## | 100 | 91.17647  | 8.823529  | 2015 |
| ## | 146 | 100.00000 | 0.00000   | 2015 |
|    | 185 | 90.56604  | 7.547170  | 2015 |
| ## | 166 | 38.88889  | 55.55556  | 2015 |
| ## | 90  | 86.53846  | 13.461538 | 2015 |
| ## |     | 91.11111  | 8.888889  | 2015 |
|    | 131 | 100.00000 | 0.00000   | 2015 |
|    |     |           |           |      |
| ## |     | 86.20690  | 13.793103 | 2015 |
| ## | 01  | 97.14286  | 2.857143  | 2015 |

| ## | 37  |         |      |       |    |       | 100  | 00   | 0000  |      |   | 0 00  | 00000 |       | 2015 |
|----|-----|---------|------|-------|----|-------|------|------|-------|------|---|-------|-------|-------|------|
|    | 192 |         |      |       |    |       | 100  |      |       |      |   |       | 00000 |       | 2015 |
|    | 31  |         |      |       |    |       |      |      | 765   |      |   |       | 00000 |       | 2015 |
|    | 141 |         |      |       |    |       |      |      | 0000  |      |   |       | 00000 |       | 2015 |
|    | 134 |         |      |       |    |       |      |      | 5172  |      |   |       | 48276 |       | 2015 |
|    | 137 |         |      |       |    |       | 100  |      |       |      |   |       | 00000 |       | 2015 |
|    | 184 |         |      |       |    |       |      |      | 970   |      |   |       | 30303 |       | 2015 |
|    | 98  |         |      |       |    |       |      |      | 143   |      |   |       | 28571 |       | 2015 |
|    | 151 |         |      |       |    |       |      |      | .034  |      |   |       | 89655 |       | 2015 |
|    | 159 |         |      |       |    |       | 100  |      |       |      |   |       | 00000 |       | 2015 |
|    | 176 |         |      |       |    |       |      |      | 545   |      |   |       | 63636 |       | 2015 |
|    | 148 |         |      |       |    |       |      |      |       |      |   |       |       |       | 2015 |
|    | 84  |         |      |       |    |       |      |      | 455   |      |   |       | 00000 |       | 2015 |
|    |     |         |      |       |    |       | 15.  | . 00 | 0000  |      |   | 10.73 | 50000 |       |      |
| ## | 66  |         |      |       |    |       | ٥٦   | ٥.   | NA    |      |   | 4 0   | NA    |       | 2015 |
|    | 199 |         |      |       |    |       | 95   | . 65 | 217   |      |   | 4.34  | 47826 |       | 2015 |
|    | 82  |         |      |       |    |       | 0.4  | 7.0  | NA    |      |   | 0.04  | NA    |       | 2015 |
|    | 194 |         |      |       |    |       |      |      | 8684  |      |   |       | 00000 |       | 2015 |
|    | 132 |         |      |       |    |       |      |      | 259   |      |   |       | 07407 |       | 2015 |
|    | 117 |         |      |       |    |       |      |      | 3077  |      |   |       | 76923 |       | 2015 |
|    | 155 |         |      |       |    |       | 100  |      |       |      |   |       | 00000 |       | 2015 |
|    | 120 |         |      |       |    |       | 100  | . 00 |       |      |   | 0.00  | 00000 |       | 2015 |
|    | 113 |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
|    | 11  |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
|    | 35  |         |      |       |    |       |      |      | 0000  |      |   |       | 00000 |       | 2015 |
| ## |     |         |      |       |    |       |      |      | 000   |      |   |       | 50000 |       | 2015 |
|    | 178 |         |      |       |    |       |      |      | 0000  |      |   |       | 00000 |       | 2015 |
|    | 75  |         |      |       |    |       | 64   | . 28 | 3571  |      |   | 35.7  | 14286 |       | 2015 |
|    | 186 |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
|    | 129 |         |      |       |    |       | 100  | .00  | 0000  |      |   | 0.00  | 00000 |       | 2015 |
| ## | 40  |         |      |       |    |       |      |      | ΝA    |      |   |       | NA    |       | 2015 |
| ## | 116 |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
|    | 55  |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
|    | 180 |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
|    | 61  |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
|    | 205 |         |      |       |    |       | 95   | . 23 | 8810  |      |   | 4.76  | 61905 |       | 2015 |
|    | 163 |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
| ## |     |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
| ## | 198 |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
| ## | 68  |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
| ## | 206 |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
| ## | 112 |         |      |       |    |       |      |      | NA    |      |   |       | NA    |       | 2015 |
| ## |     | State.y | K-12 | Total | PK | Total | Full | K    | Total | Half | K | Total | Gr 1  | Total |      |
| ## | 175 | WA      |      | 29144 |    | 264   |      |      | 1799  |      |   | 657   |       | 2567  |      |
| ## | 170 | WA      |      | 29851 |    | 464   |      |      | 2479  |      |   | 76    |       | 2544  |      |
| ## | 79  | WA      |      | 26934 |    | 236   |      |      | 0     |      |   | 2005  |       | 2289  |      |
| ## | 72  | WA      |      | 27439 |    | 264   |      |      | 2067  |      |   | 9     |       | 2111  |      |
| ## | 8   | WA      |      | 19362 |    | 118   |      |      | 93    |      |   | 1296  |       | 1368  |      |
| ## | 49  | WA      |      | 22211 |    | 331   |      |      | 1651  |      |   | 0     |       | 1799  |      |
| ## | 42  | WA      |      | 20570 |    | 340   |      |      | 1037  |      |   | 544   |       | 1634  |      |
| ## | 190 | WA      |      | 23294 |    | 186   |      |      | 1823  |      |   | 18    |       | 1889  |      |
| ## | 114 | WA      |      | 20653 |    | 228   |      |      | 0     |      |   | 1475  |       | 1662  |      |
| ## | 140 | WA      |      | 21339 |    | 310   |      |      | 1608  |      |   | 0     |       | 1554  |      |
| ## | 48  | WA      |      | 19372 |    | 244   |      |      | 1176  |      |   | 379   |       | 1685  |      |
| ## | 63  | WA      |      | 19136 |    | 239   |      |      | 1616  |      |   | 0     |       | 1721  |      |
|    |     |         |      |       |    |       |      |      |       |      |   |       |       |       |      |

|    | 67  | WA | 19184 | 238 | 915  | 474  | 1493 |
|----|-----|----|-------|-----|------|------|------|
| ## | 130 | WA | 16987 | 118 | 881  | 565  | 1485 |
| ## | 10  | WA | 18234 | 243 | 1314 | 85   | 1460 |
| ## | 147 | WA | 15331 | 260 | 1286 | 48   | 1338 |
| ## | 208 | WA | 15818 | 285 | 1338 | 0    | 1329 |
| ## | 5   | WA | 15222 | 226 | 1200 | 16   | 1202 |
| ## | 71  | WA | 17187 | 187 | 162  | 1245 | 1372 |
| ## | 28  | WA | 12346 | 337 | 910  | 383  | 1288 |
| ## | 103 | WA | 15012 | 127 | 0    | 1078 | 1231 |
| ## | 149 | WA | 12471 | 161 | 70   | 836  | 940  |
| ## | 9   | WA | 11060 | 68  | 791  | 0    | 887  |
| ## | 21  | WA | 12810 | 101 | 545  | 347  | 981  |
| ## | 7   | WA | 13465 | 87  | 124  | 664  | 947  |
| ## | 20  | WA | 10970 | 116 | 42   | 723  | 839  |
| ## | 91  | WA | 11289 | 148 | 468  | 345  | 961  |
| ## | 164 | WA | 10100 | 94  | 0    | 620  | 639  |
| ## | 162 | WA | 9213  | 118 | 654  | 40   | 734  |
| ## | 122 | WA | 9601  | 156 | 416  | 251  | 670  |
| ## | 173 | WA | 8914  | 79  | 319  | 323  | 662  |
| ## | 168 | WA | 9559  | 98  | 537  | 189  | 695  |
| ## | 177 | WA | 7984  | 77  | 169  | 423  | 613  |
| ## | 53  | WA | 7500  | 84  | 625  | 2    | 615  |
| ## | 133 | WA | 8852  | 116 | 0    | 533  | 513  |
| ## | 99  | WA | 8221  | 134 | 686  | 0    | 657  |
| ## | 201 | WA | 7899  | 88  | 593  | 15   | 623  |
| ## | 78  | WA | 8354  | 76  | 219  | 434  | 673  |
| ## | 188 | WA | 6153  | 73  | 187  | 198  | 379  |
| ## | 83  | WA | 6595  | 124 | 521  | 2    | 550  |
| ## | 96  | WA | 7250  | 62  | 194  | 287  | 469  |
| ## | 15  | WA | 6566  | 50  | 0    | 392  | 448  |
| ## | 174 | WA | 6615  | 50  | 533  | 21   | 550  |
| ## | 165 | WA | 6571  | 114 | 263  | 271  | 530  |
| ## | 110 | WA | 5997  | 117 | 248  | 180  | 432  |
| ## | 39  | WA | 5772  | 64  | 417  | 1    | 487  |
| ## | 115 | WA | 5558  | 120 | 155  | 321  | 495  |
| ## | 209 | WA | 5570  | 68  | 416  | 2    | 437  |
| ## | 4   | WA | 5479  | 56  | 71   | 285  | 368  |
|    | 93  | WA | 4413  | 36  | 190  | 59   | 290  |
|    | 50  | WA | 4888  | 64  | 345  | 7    | 334  |
|    | 158 | WA | 3511  | 32  | 261  | 4    | 264  |
|    | 70  | WA | 4912  | 31  | 363  | 2    | 359  |
| ## | 24  | WA | 4362  | 103 | 262  | 104  | 370  |
| ## | 161 | WA | 4161  | 107 | 292  | 0    | 259  |
|    | 6   | WA | 3851  | 49  | 87   | 84   | 257  |
|    | 46  | WA | 4055  | 40  | 4    | 295  | 297  |
|    | 128 | WA | 4049  | 48  | 349  | 1    | 397  |
|    | 203 | WA | 3603  | 38  | 237  | 83   | 259  |
|    | 187 | WA | 3059  | 0   | 275  | 1    | 241  |
|    | 183 | WA | 4248  | 52  | 350  | 0    | 320  |
|    | 123 | WA | 5325  | 46  | 151  | 209  | 390  |
|    | 135 | WA | 3752  | 52  | 254  | 2    | 293  |
| ## | 1   | WA | 3221  | 49  | 266  | 0    | 265  |
|    | 51  | WA | 3595  | 57  | 301  | 0    | 268  |
| ## | 207 | WA | 2253  | 14  | 145  | 3    | 154  |
|    |     |    |       |     |      |      |      |

| ##       | 195       | WA       | 3326         | 34       | 259    | 1         | 290       |
|----------|-----------|----------|--------------|----------|--------|-----------|-----------|
|          | 22        | WA       | 3628         | 77       | 322    | 2         | 283       |
| ##       | 153       | WA       | 3238         | 44       | 44     | 166       | 226       |
| ##       | 58        | WA       | 3630         | 33       | 320    | 1         | 321       |
|          | 197       | WA       | 3148         | 21       | 222    | 0         | 231       |
|          | 43        | WA       | 3102         | 56       | 248    | 6         | 259       |
| ##       | 3         | WA       | 2721         | 31       | 192    | 4         | 210       |
| ##       | 23        | WA       | 3002         | 16       | 189    | 0         | 203       |
|          | 143       | WA       | 2874         | 42       | 249    | 0         | 261       |
|          | 138       | WA       | 2807         | 30       | 209    | 0         | 199       |
|          | 139       | WA       | 2632         | 53       | 0      | 204       | 236       |
| ##       | 160       | WA       | 2860         | 52       | 0      | 170       | 197       |
| ##       | 27        | WA       | 2639         | 38       | 186    | 0         | 200       |
| ##       | 85        | WA       | 2886         | 54       | 0      | 221       | 231       |
| ##       | 80        | WA       | 2345         | 27       | 19     | 131       | 215       |
| ##       | 12        | WA       | 2157         | 49       | 0      | 155       | 160       |
| ##       | 38        | WA       | 2403         | 17       | 127    | 21        | 171       |
| ##       | 127       | WA       | 2402         | 34       | 192    | 1         | 191       |
| ##       | 60        | WA       | 2041         | 23       | 0      | 133       | 121       |
| ##       | 150       | WA       | 2312         | 18       | 19     | 160       | 185       |
| ##       | 142       | WA       | 3068         | 15       | 95     | 5         | 79        |
| ##       | 154       | WA       | 2217         | 33       | 170    | 1         | 163       |
| ##       | 111       | WA       | 2106         | 53       | 159    | 2         | 144       |
| ##       | 47        | WA       | 2400         | 18       | 174    | 2         | 185       |
|          | 193       | WA       | 2308         | 22       | 197    | 0         | 234       |
| ##       | 30        | WA       | 1101         | 8        | 113    | 0         | 106       |
| ##       | 156       | WA       | 1660         | 19       | 158    | 0         | 166       |
| ##       | 109       | WA       | 2082         | 34       | 174    | 0         | 148       |
| ##       | 102       | WA       | 1863         | 32       | 59     | 93        | 151       |
| ##       | 191       | WA       | 1562         | 10       | 0      | 85        | 90        |
| ##       | 172       | WA       | 2021         | 23       | 50     | 96        | 153       |
|          | 41        | WA       | 1891         | 16       | 121    | 3         | 107       |
| ##       | 92        | WA       | 1876         | 35       | 67     | 88        | 151       |
| ##       | 65        | WA       | 1646         | 18       | 116    | 0         | 116       |
|          | 64        | WA       | 1896         | 12       | 0      | 126       | 129       |
| ##       | 32        | WA       | 1779         | 35       | 118    | 1         | 132       |
|          | 107       | WA       | 1585         | 41       | 140    | 0         | 148       |
| ##<br>## | 94<br>169 | WA<br>WA | 1738<br>1463 | 27       | 0<br>1 | 129<br>77 | 137<br>71 |
| ##       |           | WA       | 1403         | 10<br>27 | 120    | 0         | 137       |
| ##       |           | WA       | 1469         | 32       | 104    | 0         | 93        |
|          | 152       | WA       | 1435         | 15       | 83     | 3         | 93        |
|          | 18        | WA       | 1547         | 10       | 0      | 124       | 119       |
| ##       | 106       | WA       | 1468         | 20       | 0      | 78        | 83        |
| ##       | 76        | WA       | 1621         | 10       | 105    | 2         | 108       |
| ##       | 17        | WA       | 1295         | 10       | 0      | 90        | 102       |
| ##       | 97        | WA       | 1281         | 24       | 23     | 55        | 90        |
| ##       | 136       | WA       | 1223         | 17       | 56     | 26        | 88        |
| ##       | 118       | WA       | 986          | 20       | 76     | 0         | 82        |
| ##       | 210       | WA       | 1332         | 9        | 97     | 0         | 95        |
| ##       | 62        | WA       | 1191         | 11       | 81     | 0         | 87        |
| ##       | 101       | WA       | 959          | 4        | 81     | 0         | 86        |
| ##       | 19        | WA       | 1245         | 10       | 99     | 0         | 114       |
| ##       | 26        | WA       | 1069         | 16       | 74     | 2         | 72        |
|          |           |          |              |          |        |           |           |

| ##       | 77         | WA       | 622        | 5       | 0       | 31      | 45       |
|----------|------------|----------|------------|---------|---------|---------|----------|
| ##       | 105        | WA       | 1063       | 17      | 78      | 0       | 61       |
|          | 57         | WA       | 730        | 12      | 48      | 0       | 67       |
|          | 179        | WA       | 1206       | 18      | 95      | 0       | 86       |
| ##       | 121        | WA       | 1059       | 14      | 65      | 0       | 68       |
| ##       | 182        | WA       | 1087       | 11      | 90      | 1       | 81       |
| ##       | 34         | WA       | 909        | 16      | 0       | 49      | 60       |
| ##       | 196        | WA       | 989        | 14      | 85      | 0       | 82       |
| ##       | 13         | WA       | 980        | 24      | 98      | 0       | 89       |
|          | 56         | WA       | 917        | 9       | 64      | 0       | 59       |
| ##       | 171        | WA       | 941        | 21      | 68      | 0       | 73       |
| ##       | 54         | WA       | 913        | 7       | 0       | 56      | 55       |
| ##       | 52         | WA       | 906        | 9       | 68      | 0       | 62       |
| ##       | 86         | WA       | 938        | 6       | 89      | 0       | 82       |
| ##       | 157        | WA       | 795        | 6       | 0       | 48      | 43       |
| ##       | 125        | WA       | 885        | 7       | 0       | 69      | 71       |
| ##       | 189        | WA       | 689        | 5       | 21      | 35      | 54       |
| ##       | 144        | WA       | 823        | 9       | 61      | 3       | 55       |
| ##       | 119        | WA       | 622        | 2       | 43      | 0       | 42       |
| ##       | 25         | WA       | 856        | 9       | 47      | 0       | 41       |
| ##       | 88         | WA       | 663        | 5       | 55      | 0       | 64       |
| ##       | 73         | WA       | 922        | 6       | 60      | 0       | 54       |
| ##       | 108        | WA       | 667        | 8       | 50      | 0       | 57       |
|          | 14         | WA       | 828        | 14      | 75      | 0       | 87       |
| ##       | 69         | WA       | 927        | 7       | 0       | 58      | 70       |
|          | 16         | WA       | 446        | 10      | 30      | 0       | 42       |
| ##       | 200        | WA       | 557        | 3       | 47      | 0       | 29       |
| ##       | 124        | WA       | 744        | 9       | 54      | 11      | 55       |
| ##       | 167        | WA       | 544        | 13      | 39      | 0       | 49       |
| ##       | 145        | WA       | 639        | 6       | 27      | 0       | 48       |
| ##<br>## | 204<br>104 | WA       | 649<br>784 | 10<br>8 | 44      | 0<br>17 | 51<br>66 |
| ##       | 95         | WA<br>WA | 630        | 8       | 39<br>0 | 46      | 45       |
|          | 74         | WA       | 637        | 9       | 46      | 0       | 38       |
| ##       | 181        | WA       | 732        | 4       | 41      | 0       | 51       |
|          | 36         | WA       | 585        | 5       | 47      | 1       | 47       |
|          | 126        | WA       | 560        | 11      | 47      | 0       | 42       |
| ##       |            | WA       | 591        | 5       | 0       | 39      | 39       |
|          | 33         | WA       | 530        | 3       | 41      | 0       | 28       |
|          | 202        | WA       | 415        | 3       | 24      | 0       | 22       |
|          | 100        | WA       | 532        | 2       | 41      | 0       | 48       |
| ##       | 146        | WA       | 589        | 7       | 40      | 0       | 40       |
| ##       | 185        | WA       | 611        | 9       | 40      | 0       | 46       |
| ##       | 166        | WA       | 440        | 6       | 26      | 0       | 34       |
| ##       | 90         | WA       | 501        | 3       | 33      | 5       | 31       |
| ##       | 2          | WA       | 608        | 4       | 0       | 42      | 47       |
|          | 131        | WA       | 295        | 0       | 17      | 0       | 24       |
| ##       |            | WA       | 351        | 4       | 31      | 0       | 31       |
| ##       |            | WA       | 412        | 5       | 32      | 0       | 29       |
|          | 37         | WA       | 436        | 7       | 38      | 0       | 31       |
|          | 192        | WA       | 455        | 5       | 33      | 0       | 31       |
| ##       |            | WA       | 163        | 3       | 0       | 13      | 8        |
|          | 141        | WA       | 332        | 0       | 0       | 10      | 23       |
| ##       | 134        | WA       | 314        | 3       | 23      | 0       | 23       |

|    | 407 | 7.74       | 007        | 4          | 07         | •             | 20      |
|----|-----|------------|------------|------------|------------|---------------|---------|
|    | 137 | WA         | 337        | 4          | 27         | 0             | 32      |
|    | 184 | WA         | 234        | 4          | 20         | 0             | 12      |
|    | 98  | WA         | 300        | 6          | 22         | 0             | 14      |
|    | 151 | WA         | 357        | 7          | 0          | 26            | 26      |
|    | 159 | WA         | 242        | 5          | 15         | 1             | 21      |
|    | 176 | WA         | 186        | 3          | 23         | 0             | 11      |
|    | 148 | WA         | 304        | 4          | 13         | 1             | 22      |
|    | 84  | WA         | 221        | 3          | 21         | 0             | 17      |
|    | 66  | WA         | 226        | 6          | 15         | 0             | 19      |
| ## | 199 | WA         | 265        | 1          | 14         | 0             | 14      |
| ## | 82  | WA         | 176        | 3          | 15         | 0             | 14      |
| ## | 194 | WA         | 295        | 2          | 18         | 0             | 17      |
| ## | 132 | WA         | 259        | 0          | 21         | 0             | 19      |
| ## | 117 | WA         | 224        | 6          | 20         | 0             | 14      |
| ## | 155 | WA         | 199        | 3          | 10         | 0             | 15      |
| ## | 120 | WA         | 220        | 3          | 20         | 0             | 13      |
| ## | 113 | WA         | 250        | 0          | 17         | 0             | 15      |
| ## | 11  | WA         | 88         | 1          | 0          | 7             | 7       |
| ## | 35  | WA         | 285        | 0          | 12         | 14            | 26      |
| ## | 89  | WA         | 172        | 2          | 12         | 0             | 13      |
| ## | 178 | WA         | 191        | 2          | 8          | 0             | 12      |
| ## | 75  | WA         | 80         | 0          | 0          | 2             | 8       |
| ## | 186 | WA         | 219        | 1          | 0          | 16            | 14      |
| ## | 129 | WA         | 175        | 3          | 6          | 0             | 18      |
| ## | 40  | WA         | 109        | 2          | 8          | 0             | 8       |
| ## | 116 | WA         | 93         | 0          | 0          | 6             | 4       |
| ## | 55  | WA         | 102        | 0          | 0          | 8             | 10      |
| ## | 180 | WA         | 81         | 0          | 9          | 0             | 12      |
| ## | 61  | WA         | 90         | 1          | 5          | 0             | 5       |
| ## | 205 | WA         | 148        | 0          | 9          | 0             | 10      |
| ## | 163 | WA         | 44         | 0          | 0          | 6             | 3       |
| ## | 87  | WA         | 87         | 0          | 2          | 5             | 3       |
| ## | 198 | WA         | 46         | 1          | 0          | 2             | 1       |
| ## | 68  | WA         | 44         | 3          | 2          | 0             | 1       |
| ## | 206 | WA         | 85         | 1          | 7          | 0             | 6       |
| ## | 112 | WA         | 52         | 0          | 0          | 5             | 0       |
| ## |     | Gr 2 Total | Gr 3 Total | Gr 4 Total | Gr 5 Total | Gr 6 Total Gr | 7 Total |
| ## | 175 | 2573       | 2445       | 2266       | 2223       | 1996          | 2085    |
| ## | 170 | 2559       | 2394       | 2266       | 2192       | 2225          | 2227    |
| ## | 79  | 2284       | 2266       | 2256       | 2252       | 2123          | 2018    |
| ## | 72  | 2175       | 2055       | 1935       | 2102       | 2006          | 2091    |
| ## | 8   | 1534       | 1458       | 1415       | 1454       | 1488          | 1498    |
| ## | 49  | 1675       | 1636       | 1578       | 1669       | 1684          | 1579    |
| ## | 42  | 1568       | 1486       | 1459       | 1493       | 1520          | 1468    |
| ## | 190 | 1965       | 1847       | 1775       | 1754       | 1689          | 1689    |
| ## | 114 | 1622       | 1667       | 1603       | 1551       | 1577          | 1502    |
| ## | 140 | 1627       | 1537       | 1513       | 1564       | 1603          | 1605    |
|    | 48  | 1619       | 1533       | 1506       | 1552       | 1402          | 1370    |
| ## | 63  | 1593       | 1496       | 1432       | 1389       | 1310          | 1368    |
| ## |     | 1552       | 1480       | 1545       | 1554       | 1513          | 1497    |
|    | 130 | 1487       | 1416       | 1380       | 1319       | 1313          | 1210    |
|    | 10  | 1491       | 1414       | 1392       | 1352       | 1370          | 1330    |
|    | 147 | 1326       | 1251       | 1177       | 1104       | 1078          | 1059    |
|    | 208 | 1361       | 1250       | 1163       | 1178       | 1102          | 1127    |
|    |     | 1001       | 1200       | 1100       | 11.0       |               |         |

| ## |           | 1181       | 1134       | 1157       | 1122       | 1058       | 1090       |
|----|-----------|------------|------------|------------|------------|------------|------------|
| ## | 71        | 1414       | 1380       | 1273       | 1278       | 1300       | 1256       |
| ## | 28        | 1227       | 1122       | 1040       | 941        | 902        | 830        |
| ## | 103       | 1239       | 1200       | 1141       | 1227       | 1133       | 1145       |
|    | 149       | 960        | 953        | 856        | 965        | 991        | 930        |
| ## |           | 767        | 816        | 837        | 774        | 816        | 785        |
| ## |           | 977        | 975        | 981        | 970        | 1005       | 959        |
|    | 7         | 943        | 956        | 946        | 1010       | 1030       | 1040       |
| ## |           | 788        | 805        | 800        | 847        | 841        | 848        |
| ## |           | 886        | 848        | 827        | 817        | 801        | 825        |
|    | 164       | 683        | 618        | 749        | 695        | 792        | 744        |
|    | 162       | 752        | 686        | 661        | 746        | 672        | 692        |
|    | 122       | 702        | 681        | 699        | 697        | 682        | 656        |
|    | 173       | 638        | 647        | 602        | 613        | 624        | 642        |
|    | 168       | 711        | 700        | 719        | 748        | 726        | 726        |
|    | 177       | 645        | 600        | 625        | 579        | 642        | 622        |
|    | 53        | 609        | 601        | 538        | 546        | 540        | 538        |
|    | 133       | 567        | 619        | 644        | 631        | 650        | 684        |
|    | 99<br>201 | 645        | 630        | 669<br>575 | 592        | 610        | 622<br>587 |
|    | 78        | 558<br>659 | 612<br>604 | 575<br>707 | 564<br>630 | 554<br>652 | 615        |
|    | 188       | 383        | 400        | 433        | 445        | 467        | 475        |
|    | 83        | 519        | 519        | 433        | 492        | 471        | 491        |
|    | 96        | 503        | 479        | 493        | 471        | 480        | 485        |
|    | 15        | 437        | 527        | 470        | 504        | 570        | 536        |
|    | 174       | 592        | 520        | 542        | 522        | 483        | 474        |
|    | 165       | 557        | 517        | 509        | 541        | 514        | 483        |
|    | 110       | 423        | 450        | 430        | 438        | 452        | 450        |
|    | 39        | 446        | 449        | 414        | 425        | 442        | 424        |
|    | 115       | 462        | 437        | 409        | 410        | 372        | 415        |
| ## | 209       | 422        | 387        | 409        | 400        | 432        | 407        |
| ## | 4         | 424        | 397        | 392        | 424        | 411        | 440        |
| ## | 93        | 318        | 320        | 364        | 360        | 361        | 360        |
| ## | 50        | 342        | 362        | 330        | 362        | 371        | 359        |
| ## | 158       | 268        | 247        | 247        | 289        | 237        | 281        |
| ## | 70        | 339        | 380        | 379        | 346        | 387        | 372        |
| ## | 24        | 353        | 336        | 345        | 331        | 320        | 320        |
| ## | 161       | 267        | 307        | 274        | 277        | 259        | 251        |
| ## | 6         | 247        | 260        | 288        | 313        | 312        | 316        |
| ## | 46        | 286        | 288        | 283        | 301        | 288        | 292        |
|    | 128       | 355        | 352        | 334        | 307        | 301        | 295        |
|    | 203       | 245        | 247        | 242        | 265        | 243        | 268        |
|    | 187       | 243        | 232        | 237        | 219        | 237        | 244        |
|    | 183       | 309        | 323        | 298        | 294        | 317        | 305        |
|    | 123       | 351        | 416        | 407        | 450        | 421        | 565        |
|    | 135       | 292        | 284        | 257        | 287        | 261        | 293        |
|    | 1         | 264        | 257        | 202        | 236        | 240        | 217        |
|    | 51        | 300        | 273        | 259        | 275        | 289        | 272        |
|    | 207       | 185        | 151        | 176        | 173        | 176        | 166        |
|    | 195       | 273        | 303        | 274        | 258        | 281        | 260        |
|    | 22        | 284        | 280        | 263        | 235        | 255        | 275        |
|    | 153       | 234        | 261        | 268        | 235        | 264        | 237        |
|    | 58        | 302        | 326        | 265        | 284        | 276        | 277        |
| ## | 197       | 229        | 233        | 266        | 219        | 241        | 249        |

| ## | 12  | 243        | 224        | 222        | 236 | 227 | 224        |
|----|-----|------------|------------|------------|-----|-----|------------|
|    | 3   | 218        | 196        | 209        | 185 | 218 | 222        |
|    | 23  | 187        | 183        | 203        | 213 | 205 | 224        |
|    | 143 | 222        | 235        | 184        | 221 | 193 | 201        |
|    | 138 | 224        | 188        | 200        | 203 | 215 | 222        |
|    | 139 | 241        | 199        | 202        | 203 | 206 | 206        |
|    | 160 | 195        | 194        | 195        | 223 |     | 209        |
|    | 27  | 193        |            | 187        | 186 | 207 | 203        |
|    | 85  |            | 211        |            |     | 180 |            |
|    | 80  | 211<br>183 | 264<br>184 | 206        | 209 | 217 | 194<br>182 |
| ## | 12  | 178        | 153        | 168<br>171 | 178 | 174 | 185        |
|    |     |            |            |            | 146 | 153 |            |
| ## | 38  | 196        | 179        | 204        | 191 | 184 | 200        |
| ## | 127 | 183        | 193        | 166        | 173 | 174 | 184        |
|    | 60  | 142        | 130        | 120        | 158 | 142 | 136        |
|    | 150 | 182        | 186        | 169        | 184 | 182 | 176        |
|    | 142 | 96         | 88         | 99         | 80  | 83  | 87         |
|    | 154 | 186        | 164        | 168        | 170 | 187 | 150        |
|    | 111 | 140        | 153        | 139        | 144 | 128 | 147        |
| ## |     | 188        | 207        | 173        | 148 | 186 | 176        |
|    | 193 | 213        | 216        | 216        | 176 | 173 | 139        |
|    | 30  | 94         | 102        | 84         | 103 | 92  | 100        |
|    | 156 | 117        | 139        | 116        | 141 | 122 | 117        |
|    | 109 | 165        | 152        | 177        | 162 | 160 | 150        |
|    | 102 | 142        | 132        | 156        | 142 | 140 | 115        |
|    | 191 | 99         | 98         | 115        | 79  | 127 | 118        |
|    | 172 | 154        | 137        | 149        | 126 | 155 | 158        |
|    | 41  | 137        | 122        | 145        | 139 | 144 | 144        |
| ## | 92  | 173        | 136        | 151        | 131 | 133 | 138        |
| ## | 65  | 129        | 114        | 125        | 113 | 118 | 140        |
|    | 64  | 119        | 129        | 126        | 137 | 131 | 160        |
| ## | 32  | 132        | 106        | 127        | 127 | 132 | 123        |
| ## | 107 | 133        | 117        | 115        | 103 | 121 | 117        |
|    | 94  | 157        | 134        | 133        | 144 | 117 | 152        |
| ## | 169 | 97         | 100        | 107        | 106 | 102 | 115        |
|    | 59  | 117        | 111        | 122        | 120 | 117 | 95         |
|    | 44  | 90         | 99         | 97         | 75  | 115 | 113        |
|    | 152 | 108        | 112        | 90         | 106 | 110 | 130        |
|    | 18  | 119        | 119        | 105        | 105 | 129 | 118        |
|    | 106 | 92         | 88         | 92         | 112 | 133 | 107        |
|    | 76  | 108        | 104        | 111        | 127 | 128 | 118        |
| ## | 17  | 96         | 85         | 74         | 91  | 101 | 101        |
|    | 97  | 115        | 76         | 103        | 106 | 108 | 113        |
|    | 136 | 75<br>24   | 90         | 110        | 80  | 89  | 76         |
| ## | 118 | 84         | 78         | 72         | 74  | 84  | 83         |
| ## | 210 | 82         | 103        | 91         | 108 | 119 | 96         |
| ## | 62  | 88         | 91         | 92         | 103 | 77  | 85         |
| ## | 101 | 83         | 83         | 85         | 85  | 69  | 69         |
| ## | 19  | 74         | 108        | 102        | 79  | 95  | 94         |
| ## | 26  | 70         | 77         | 68         | 84  | 89  | 75         |
| ## | 77  | 49         | 44         | 44         | 50  | 51  | 40         |
| ## | 105 | 75<br>22   | 82         | 65         | 84  | 92  | 81         |
| ## | 57  | 63         | 56         | 48         | 55  | 51  | 53         |
|    | 179 | 103        | 93         | 105        | 99  | 78  | 106        |
| ## | 121 | 92         | 68         | 84         | 83  | 80  | 99         |

|    | 100 | 00 | 100 | 00 | 0.4 | 70 | 0.5 |
|----|-----|----|-----|----|-----|----|-----|
|    | 182 |    | 100 | 93 | 84  | 78 | 85  |
| ## | 34  | 76 | 59  | 73 | 72  | 66 | 81  |
| ## | 196 | 78 | 86  | 59 | 69  | 65 | 64  |
| ## | 13  | 82 | 89  | 62 | 73  | 65 | 80  |
|    | 56  | 66 | 64  | 69 | 70  | 67 | 68  |
| ## | 171 | 76 | 75  | 59 | 57  | 67 | 73  |
| ## | 54  | 64 | 55  | 55 | 61  | 77 | 88  |
| ## | 52  | 62 | 56  | 68 | 71  | 60 | 79  |
| ## | 86  | 78 | 84  | 62 | 75  | 62 | 71  |
| ## | 157 | 50 | 58  | 65 | 56  | 51 | 66  |
| ## | 125 | 76 | 74  | 94 | 73  | 93 | 71  |
| ## | 189 | 83 | 71  | 75 | 70  | 75 | 81  |
| ## | 144 | 64 | 57  | 57 | 67  | 56 | 59  |
| ## | 119 | 48 | 49  | 48 | 41  | 53 | 51  |
| ## | 25  | 55 | 53  | 54 | 54  | 53 | 64  |
| ## | 88  | 52 | 51  | 56 | 45  | 56 | 47  |
| ## | 73  | 55 | 50  | 44 | 60  | 48 | 59  |
| ## | 108 | 54 | 48  | 46 | 62  | 39 | 45  |
| ## | 14  | 74 | 64  | 68 | 60  | 52 | 60  |
| ## | 69  | 68 | 69  | 82 | 77  | 65 | 73  |
| ## | 16  | 33 | 34  | 26 | 32  | 40 | 27  |
| ## | 200 | 35 | 25  | 36 | 22  | 26 | 25  |
| ## | 124 | 55 | 62  | 61 | 60  | 45 | 45  |
| ## | 167 | 39 | 50  | 64 | 37  | 41 | 36  |
| ## | 145 | 33 | 41  | 37 | 47  | 73 | 64  |
| ## | 204 | 38 | 59  | 53 | 47  | 45 | 47  |
| ## | 104 | 60 | 72  | 56 | 57  | 65 | 52  |
| ## | 95  | 55 | 40  | 53 | 58  | 46 | 37  |
| ## | 74  | 42 | 49  | 43 | 59  | 58 | 63  |
| ## | 181 | 39 | 49  | 53 | 45  | 48 | 46  |
| ## | 36  | 43 | 32  | 45 | 45  | 43 | 59  |
| ## | 126 | 55 | 36  | 40 | 46  | 41 | 34  |
| ## | 29  | 38 | 44  | 53 | 32  | 47 | 40  |
| ## | 33  | 42 | 42  | 28 | 39  | 52 | 37  |
| ## | 202 | 23 | 34  | 40 | 24  | 25 | 39  |
| ## | 100 | 43 | 39  | 41 | 35  | 27 | 39  |
| ## | 146 | 46 | 38  | 40 | 48  | 36 | 54  |
| ## | 185 | 38 | 45  | 45 | 43  | 52 | 46  |
|    | 166 | 28 | 33  | 30 | 33  | 29 | 33  |
| ## |     | 42 | 32  | 32 | 39  | 34 | 49  |
| ## |     | 34 | 42  | 35 | 42  | 51 | 47  |
|    | 131 | 21 | 23  | 19 | 24  | 23 | 19  |
| ## |     | 30 | 22  | 25 | 19  | 26 | 32  |
| ## |     | 30 | 39  | 27 | 36  | 28 | 35  |
| ## |     | 35 | 36  | 32 | 34  | 30 | 20  |
|    | 192 | 27 | 36  | 40 | 32  | 38 | 30  |
|    | 31  | 9  | 11  | 8  | 13  | 16 | 13  |
| ## | 141 | 46 | 26  | 27 | 32  | 25 | 27  |
| ## | 134 | 22 | 26  | 21 | 18  | 20 | 27  |
| ## | 137 | 29 | 38  | 23 | 19  | 23 | 25  |
| ## | 184 | 14 | 20  | 16 | 17  | 15 | 14  |
| ## |     | 29 | 17  | 26 | 27  | 26 | 33  |
|    | 151 | 32 | 30  | 19 | 20  | 21 | 30  |
|    | 159 | 15 | 12  | 23 | 11  | 13 | 24  |
|    |     |    |     |    |     |    |     |

|    | 176 | 12         |            | 11          | 16          | 15          | 11 |
|----|-----|------------|------------|-------------|-------------|-------------|----|
|    | 148 | 27         |            | 24          | 29          | 19          | 23 |
|    | 84  | 16         |            | 19          | 17          | 14          | 11 |
|    | 66  | 26         | 25         | 20          | 14          | 18          | 15 |
| ## | 199 | 19         | 12         | 14          | 15          | 20          | 17 |
| ## | 82  | 18         | 11         | 9           | 15          | 13          | 18 |
| ## | 194 | 17         | 26         | 28          | 17          | 14          | 30 |
| ## | 132 | 19         | 18         | 19          | 27          | 18          | 16 |
| ## | 117 | 17         | 17         | 24          | 17          | 12          | 12 |
| ## | 155 | 10         | 12         | 21          | 17          | 19          | 11 |
| ## | 120 | 18         | 18         | 22          | 15          | 18          | 22 |
| ## | 113 | 29         |            | 19          | 17          | 20          | 16 |
| ## | 11  | 7          |            | 6           | 4           | 5           | 6  |
| ## | 35  | 27         | 20         | 27          | 25          | 17          | 24 |
| ## | 89  | 10         |            | 14          | 18          | 15          | 12 |
| ## | 178 | 9          |            | 17          | 19          | 21          | 12 |
| ## | 75  | 6          |            | 5           | 6           | 0           | 10 |
| ## | 186 | 24         |            | 16          | 21          | 28          | 15 |
| ## | 129 | 13         |            | 17          | 16          | 12          | 10 |
| ## | 40  | 11         |            | 2           | 14          | 10          | 11 |
| ## | 116 | 7          |            | 7           | 8           | 5           | 12 |
| ## | 55  | 9          |            | 7           | 8           | 8           | 9  |
| ## | 180 | 9          |            | 7           | 12          | 9           | 6  |
| ## | 61  | 4          |            | 12          | 5           | 12          | 0  |
|    | 205 | 9          |            | 14          | 13          | 19          | 16 |
| ## | 163 | 4          |            | 1           | 3           | 4           | 2  |
| ## | 87  | 8          |            | 9           | 6           | 6           | 8  |
| ## | 198 | 2          | . 1        | 3           | 6           | 7           | 5  |
| ## | 68  | 4          | . 7        | 5           | 4           | 3           | 5  |
| ## | 206 | 5          | 5          | 6           | 7           | 8           | 5  |
| ## | 112 | 3          | 4          | 1           | 3           | 2           | 6  |
| ## |     | Gr 8 Total | Gr 9 Total | Gr 10 Total | Gr 11 Total | Gr 12 Total |    |
| ## | 175 | 1998       |            | 2080        | 2001        | 2330        |    |
| ## | 170 | 2200       |            | 2169        | 2107        | 2159        |    |
| ## | 79  | 2060       | 1935       | 1852        | 1827        | 1767        |    |
| ## | 72  | 2080       |            | 2238        | 2091        | 1990        |    |
| ## | 8   | 1457       | 1589       | 1545        | 1585        | 1582        |    |
| ## | 49  | 1657       | 1711       | 1883        | 1793        | 1896        |    |
| ## | 42  | 1473       | 1625       | 1578        | 1686        | 1999        |    |
| ## | 190 | 1762       | 1795       | 1788        | 1643        | 1857        |    |
| ## | 114 | 1571       | 1510       | 1616        | 1551        | 1746        |    |
| ## | 140 | 1724       | 1728       | 1735        | 1771        | 1770        |    |
| ## | 48  | 1448       | 1444       | 1408        | 1408        | 1442        |    |
| ## | 63  | 1272       | 1653       | 1491        | 1359        | 1436        |    |
| ## | 67  | 1442       | 1532       | 1395        | 1447        | 1345        |    |
| ## | 130 | 1294       | 1182       | 1140        | 1176        | 1139        |    |
| ## | 10  | 1422       | 1454       | 1308        | 1364        | 1478        |    |
| ## | 147 | 1115       | 1117       | 1132        | 1066        | 1234        |    |
| ## | 208 | 1156       | 1183       | 1172        | 1102        | 1357        |    |
| ## | 5   | 1085       | 1278       | 1168        | 1205        | 1326        |    |
| ## | 71  | 1230       | 1370       | 1333        | 1235        | 1339        |    |
| ## | 28  | 823        | 774        | 777         | 681         | 648         |    |
| ## | 103 | 1107       | 1119       | 1143        | 1123        | 1126        |    |
| ## | 149 | 926        | 1071       | 981         | 975         | 1017        |    |
|    |     |            |            |             |             |             |    |

| ##       | 9          | 832        | 889        | 939        | 919        | 1008       |
|----------|------------|------------|------------|------------|------------|------------|
| ##       | 21         | 1048       | 1042       | 985        | 969        | 1026       |
| ##       | 7          | 1088       | 1246       | 1188       | 1137       | 1146       |
| ##       | 20         | 839        | 876        | 893        | 884        | 945        |
| ##       | 91         | 867        | 863        | 926        | 867        | 988        |
| ##       | 164        | 775        | 943        | 938        | 910        | 994        |
| ##       | 162        | 703        | 813        | 735        | 726        | 599        |
| ##       | 122        | 716        | 873        | 830        | 841        | 887        |
| ##       | 173        | 677        | 876        | 867        | 741        | 683        |
| ##       | 168        | 775        | 716        | 701        | 741        | 875        |
| ##       | 177        | 618        | 626        | 581        | 606        | 635        |
| ##       | 53         | 544        | 578        | 584        | 576        | 604        |
| ##       | 133        | 713        | 769        | 792        | 879        | 858        |
| ##       | 99         | 598        | 627        | 626        | 588        | 671        |
| ##       | 201        | 652        | 642        | 572        | 650        | 702        |
| ##       | 78         | 708        | 619        | 611        | 614        | 609        |
| ##       | 188        | 525        | 532        | 535        | 550        | 644        |
| ##       | 83         | 484        | 529        | 501        | 494        | 535        |
| ##       | 96         | 502        | 630        | 587        | 559        | 1111       |
| ##       | 15         | 541        | 567        | 553        | 513        | 508        |
| ##       | 174        | 519        | 491        | 447        | 477        | 444        |
| ##       | 165        | 508        | 489        | 469        | 459        | 461        |
| ##       | 110        | 503        | 476        | 484        | 493        | 538        |
| ##       | 39         | 452        | 430        | 447        | 475        | 463        |
| ##       | 115        | 401        | 413        | 397        | 408        | 463        |
| ##       | 209        | 436        | 408        | 468        | 466        | 480        |
| ##       | 4          | 437        | 436        | 443        | 475        | 476        |
| ##       | 93         | 374        | 364        | 334        | 377        | 342        |
| ##       | 50         | 384        | 449        | 414        | 433        | 396        |
| ##       | 158        | 288        | 290        | 301        | 260        | 274        |
| ##       | 70         | 388        | 413        | 376        | 383        | 425        |
| ##       | 24         | 328        | 346        | 309        | 313        | 325        |
| ##       | 161        | 284        | 432        | 418        | 408        | 433        |
| ##       | 6          | 280        | 367        | 347        | 345        | 348        |
| ##<br>## | 46         | 324        | 342        | 320        | 360        | 375        |
|          | 128<br>203 | 280<br>289 | 258<br>297 | 288<br>294 | 258<br>296 | 274<br>338 |
| ##       | 187        |            | 239        |            |            |            |
| ##       | 183        | 208<br>286 | 353        | 226<br>335 | 208<br>336 | 249<br>422 |
| ##       | 123        | 689        | 396        | 351        | 305        | 224        |
| ##       | 135        | 283        | 277        | 300        | 314        | 355        |
| ##       | 1          | 235        | 248        | 266        | 227        | 298        |
|          | 51         | 270        | 310        | 247        | 271        | 260        |
| ##       | 207        | 172        | 169        | 183        | 177        | 223        |
| ##       | 195        | 254        | 243        | 185        | 218        | 227        |
| ##       | 22         | 265        | 316        | 284        | 265        | 299        |
| ##       | 153        | 264        | 274        | 250        | 246        | 269        |
| ##       | 58         | 259        | 255        | 241        | 227        | 276        |
| ##       | 197        | 249        | 274        | 238        | 239        | 258        |
|          | 43         | 233        | 258        | 235        | 237        | 250        |
| ##       | 3          | 202        | 189        | 214        | 235        | 227        |
|          | 23         | 217        | 233        | 254        | 304        | 389        |
|          | 143        | 213        | 233        | 195        | 216        | 251        |
|          | 138        | 211        | 223        | 230        | 251        | 232        |
|          |            |            |            |            |            |            |

| ## | 139 | 203 | 204 | 181 | 175 | 172 |
|----|-----|-----|-----|-----|-----|-----|
| ## | 160 | 227 | 231 | 275 | 265 | 272 |
| ## | 27  | 168 | 220 | 224 | 227 | 255 |
| ## | 85  | 238 | 219 | 213 | 222 | 241 |
| ## | 80  | 175 | 168 | 196 | 184 | 188 |
| ## | 12  | 158 | 168 | 184 | 167 | 179 |
| ## | 38  | 189 | 177 | 180 | 205 | 179 |
| ## | 127 | 205 | 187 | 187 | 182 | 184 |
|    | 60  |     | 146 | 219 |     | 264 |
|    |     | 153 |     |     | 177 |     |
| ## | 150 | 190 | 167 | 189 | 166 | 157 |
| ## | 142 | 83  | 250 | 460 | 581 | 982 |
| ## | 154 | 191 | 174 | 168 | 153 | 172 |
| ## | 111 | 156 | 177 | 186 | 194 | 237 |
| ## | 47  | 188 | 192 | 195 | 197 | 189 |
| ## | 193 | 156 | 168 | 138 | 158 | 124 |
| ## | 30  | 82  | 118 | 18  | 39  | 50  |
| ## | 156 | 133 | 125 | 119 | 119 | 88  |
| ## | 109 | 154 | 156 | 172 | 155 | 157 |
| ## | 102 | 161 | 130 | 152 | 137 | 153 |
| ## | 191 | 143 | 164 | 158 | 145 | 141 |
| ## | 172 | 152 | 182 | 172 | 140 | 197 |
|    | 41  | 158 | 173 | 171 | 179 | 148 |
| ## | 92  | 140 | 120 | 146 | 149 | 153 |
|    | 65  | 136 | 161 | 138 | 124 | 116 |
|    |     |     |     |     |     |     |
|    | 64  | 140 | 189 | 147 | 188 | 175 |
|    | 32  | 136 | 144 | 153 | 144 | 204 |
| ## | 107 | 102 | 132 | 109 | 122 | 126 |
| ## | 94  | 134 | 136 | 110 | 125 | 130 |
| ## | 169 | 115 | 129 | 129 | 154 | 160 |
| ## | 59  | 126 | 122 | 107 | 101 | 101 |
| ## | 44  | 99  | 115 | 143 | 146 | 180 |
| ## | 152 | 136 | 128 | 110 | 107 | 119 |
| ## | 18  | 124 | 122 | 131 | 114 | 118 |
| ## | 106 | 128 | 143 | 134 | 139 | 139 |
| ## | 76  | 146 | 159 | 134 | 140 | 131 |
| ## | 17  | 103 | 113 | 100 | 126 | 113 |
| ## | 97  | 72  | 132 | 110 | 83  | 95  |
| ## | 136 | 82  | 98  | 121 | 107 | 125 |
| ## | 118 | 68  | 73  | 62  | 81  | 69  |
|    | 210 | 101 | 116 | 111 | 107 | 106 |
|    | 62  | 106 | 67  | 87  | 108 | 119 |
| ## | 101 | 66  | 70  | 51  | 50  | 81  |
|    |     |     |     |     |     |     |
| ## | 19  | 94  | 95  | 93  | 92  | 106 |
| ## | 26  | 92  | 92  | 92  | 97  | 85  |
| ## | 77  | 41  | 62  | 69  | 58  | 38  |
| ## | 105 | 71  | 93  | 101 | 85  | 95  |
| ## | 57  | 59  | 63  | 50  | 50  | 67  |
| ## | 179 | 84  | 88  | 99  | 87  | 83  |
| ## | 121 | 80  | 71  | 91  | 89  | 89  |
| ## | 182 | 81  | 78  | 72  | 68  | 93  |
| ## | 34  | 73  | 77  | 75  | 73  | 75  |
| ## | 196 | 78  | 86  | 86  | 86  | 65  |
| ## | 13  | 73  | 73  | 64  | 63  | 69  |
| ## |     | 72  | 89  | 76  | 75  | 78  |
|    |     |     |     |     |     |     |

| ##       | 171      | 74       | 80        | 88        | 70       | 81        |
|----------|----------|----------|-----------|-----------|----------|-----------|
| ##       | 54       | 75       | 84        | 86        | 76       | 81        |
| ##       | 52       | 69       | 88        | 81        | 72       | 70        |
|          | 86       | 67       | 73        | 59        | 62       | 74        |
| ##       | 157      | 66       | 65        | 70        | 76       | 81        |
| ##       | 125      | 66       | 52        | 55        | 57       | 34        |
| ##       | 189      | 95       | 9         | 10        | 5        | 5         |
| ##       | 144      | 73       | 71        | 66        | 75       | 59        |
| ##       | 119      | 57       | 37        | 41        | 59       | 53        |
| ##       | 25       | 74       | 85        | 84        | 88       | 104       |
| ##<br>## | 88<br>73 | 44       | 41<br>113 | 62        | 40       | 50<br>125 |
| ##       | 108      | 54<br>47 | 44        | 118<br>57 | 82<br>60 | 58        |
| ##       | 14       | 62       | 62        | 47        | 61       | 56        |
| ##       | 69       | 71       | 81        | 70        | 74       | 69        |
| ##       | 16       | 31       | 42        | 38        | 37       | 34        |
| ##       | 200      | 34       | 45        | 44        | 62       | 127       |
| ##       | 124      | 55       | 64        | 56        | 66       | 55        |
| ##       | 167      | 43       | 41        | 32        | 39       | 34        |
| ##       | 145      | 86       | 40        | 43        | 57       | 43        |
| ##       | 204      | 52       | 50        | 59        | 55       | 49        |
| ##       | 104      | 66       | 66        | 55        | 48       | 65        |
| ##       | 95       | 54       | 47        | 48        | 45       | 56        |
| ##       | 74       | 50       | 60        | 58        | 31       | 40        |
| ##       | 181      | 66       | 65        | 68        | 82       | 79        |
| ##       | 36       | 47       | 53        | 45        | 39       | 39        |
| ##       | 126      | 40       | 54        | 52        | 35       | 38        |
| ##       | 29       | 41       | 70        | 41        | 56       | 51        |
| ##       | 33       | 43       | 50        | 49        | 49       | 30        |
| ##       | 202      | 42       | 39        | 44        | 34       | 25        |
| ##       | 100      | 42       | 32        | 45        | 48       | 52        |
| ##       | 146      | 35       | 55        | 49        | 48       | 60        |
| ##       | 185      | 41       | 48        | 61        | 54       | 52        |
| ##       | 166      | 32       | 39        | 37        | 37       | 49        |
| ##       | 90<br>2  | 44       | 40        | 42        | 44       | 34        |
| ##<br>## | 131      | 56<br>24 | 48<br>20  | 61<br>29  | 60<br>21 | 43<br>31  |
|          |          |          |           |           |          |           |
| ##       | 81       | 24<br>35 | 24<br>34  | 29<br>31  | 22<br>27 | 36<br>29  |
|          | 37       | 37       | 29        | 45        | 28       | 41        |
|          | 192      | 34       | 33        | 31        | 35       | 55        |
|          | 31       | 18       | 15        | 13        | 9        | 17        |
|          | 141      | 25       | 21        | 23        | 27       | 20        |
|          | 134      | 33       | 22        | 25        | 24       | 30        |
| ##       | 137      | 23       | 18        | 26        | 27       | 27        |
| ##       | 184      | 17       | 27        | 22        | 24       | 16        |
| ##       | 98       | 20       | 21        | 20        | 26       | 19        |
| ##       | 151      | 19       | 38        | 33        | 31       | 32        |
|          | 159      | 27       | 22        | 20        | 26       | 12        |
|          | 176      | 17       | 12        | 16        | 11       | 15        |
|          | 148      | 20       | 29        | 24        | 25       | 24        |
| ##       |          | 19       | 26        | 21        | 12       | 12        |
| ##       |          | 18       | 17        | 13        | 16       | 10        |
| ##       | 199      | 27       | 32        | 21        | 34       | 26        |

| ## | 82  | 18 | 13 | 10 | 16 | 6  |
|----|-----|----|----|----|----|----|
| ## | 194 | 23 | 27 | 32 | 22 | 24 |
| ## | 132 | 22 | 22 | 19 | 19 | 20 |
| ## | 117 | 13 | 17 | 18 | 19 | 24 |
| ## | 155 | 16 | 21 | 8  | 20 | 19 |
| ## | 120 | 15 | 13 | 18 | 13 | 15 |
| ## | 113 | 20 | 22 | 20 | 17 | 23 |
| ## | 11  | 5  | 12 | 11 | 8  | 6  |
| ## | 35  | 16 | 23 | 22 | 14 | 18 |
| ## | 89  | 16 | 13 | 13 | 10 | 19 |
| ## | 178 | 12 | 12 | 22 | 13 | 18 |
| ## | 75  | 8  | 4  | 6  | 8  | 9  |
| ## | 186 | 14 | 15 | 13 | 15 | 13 |
|    | 129 | 14 | 20 | 7  | 14 | 17 |
| ## | 40  | 8  | 12 | 8  | 3  | 3  |
| ## | 116 | 13 | 6  | 8  | 8  | 3  |
| ## | 55  | 9  | 6  | 9  | 1  | 10 |
| ## | 180 | 2  | 1  | 2  | 4  | 4  |
| ## |     | 8  | 10 | 8  | 10 | 7  |
| ## | 205 | 6  | 8  | 13 | 9  | 14 |
| ## | 163 | 3  | 5  | 4  | 4  | 2  |
| ## | 87  | 9  | 6  | 6  | 4  | 6  |
| ## | 198 | 4  | 2  | 5  | 3  | 5  |
| ## | 68  | 4  | 3  | 1  | 2  | 3  |
|    | 206 | 9  | 8  | 8  | 4  | 7  |
| ## | 112 | 3  | 7  | 3  | 10 | 5  |

Now I'd like to see descriptive statistics for total revenue.

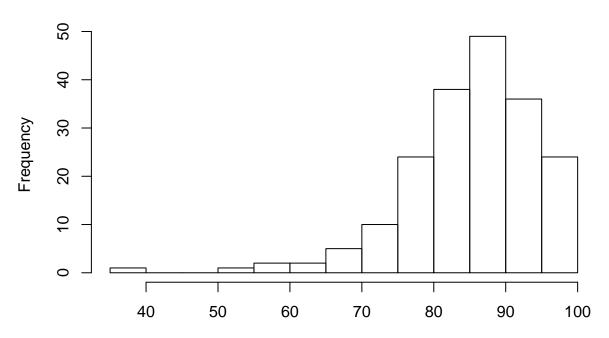
## [1] 4.856858

```
summary(FullData$'Total Revenue')
##
      Min. 1st Qu. Median
                               Mean 3rd Qu.
                                                Max.
##
      1694
              7496
                     17644
                              52931
                                      53008 415924
Standard deviation:
library(DescTools)
## Warning: package 'DescTools' was built under R version 3.4.3
sd(FullData$`Total Revenue`,na.rm = T)
## [1] 80461.45
Coefficient of Variation
sd(FullData$`Total Revenue`,na.rm = T)/mean(FullData$`Total Revenue`,na.rm = T)
## [1] 1.520114
Skewness
Skew(FullData$`State Revenue`,na.rm = T)
## [1] 2.246316
\operatorname{Kurtosis}
Kurt(FullData$`State Revenue`,na.rm = T)
```

Now let's look start creating a correlation.

```
data=FullData[is.finite(FullData$`Adjusted 5-Year Cohort Graduation Rate`),]
hist(FullData$`Adjusted 5-Year Cohort Graduation Rate`)
```

## Histogram of FullData\$'Adjusted 5-Year Cohort Graduation Rate'



FullData\$'Adjusted 5-Year Cohort Graduation Rate'

```
explanans=names(FullData)[c(3,4,9)]
for (x in explanans){
   par=cbind(FullData[,x],FullData$`Adjusted 5-Year Cohort Graduation Rate`)
   p=cor.test(FullData[,x],FullData$`Adjusted 5-Year Cohort Graduation Rate`)
    print(paste("Pearson:",p$estimate," - Is significative?",p$p.value<0.05))</pre>
}
## Warning in cor(x, y): the standard deviation is zero
## [1] "Pearson: NA - Is significative? NA"
## [1] "Pearson: -0.0304517916739964 - Is significative? FALSE"
## [1] "Pearson: -0.980426774306284 - Is significative? TRUE"
cor(FullData[explanans])
## Warning in cor(FullData[explanans]): the standard deviation is zero
##
                       Year Total Revenue Cohort dropout rate
## Year
                                       NA
## Total Revenue
                         NA
                                                            NA
                                        1
## Cohort dropout rate
                         NA
                                       NA
                                                             1
row.names(FullData)=FullData$`District Name`
names (FullData)
  [1] "District Name"
   [2] "State.x"
```

```
[3] "Year"
   [4] "Total Revenue"
##
   [5] "State Revenue"
   [6] "Local Revenue"
##
    [7] "District Code"
   [8] "Adjusted 5-Year Cohort Graduation Rate"
##
  [9] "Cohort dropout rate"
## [10] "School Year"
## [11] "State.y"
## [12] "K-12 Total"
## [13] "PK Total"
## [14] "Full K Total"
## [15] "Half K Total"
## [16] "Gr 1 Total"
## [17] "Gr 2 Total"
## [18] "Gr 3 Total"
## [19] "Gr 4 Total"
## [20] "Gr 5 Total"
## [21] "Gr 6 Total"
## [22] "Gr 7 Total"
## [23] "Gr 8 Total"
## [24] "Gr 9 Total"
## [25] "Gr 10 Total"
## [26] "Gr 11 Total"
## [27] "Gr 12 Total"
Let's run a linear regression to see if there are any correlations.
```

```
LinRegEPI = lm(`Adjusted 5-Year Cohort Graduation Rate` ~ `Total Revenue` + `State Revenue` + `Local Re
              data = FullData)
```

Now we can view a summary.

```
summary(LinRegEPI)
```

```
##
## Call:
## lm(formula = `Adjusted 5-Year Cohort Graduation Rate` ~ `Total Revenue` +
##
       `State Revenue` + `Local Revenue` + `K-12 Total`, data = FullData)
##
## Residuals:
      Min
               10 Median
                               3Q
                                      Max
## -46.967 -4.647
                    0.633
                            5.933 14.122
## Coefficients:
##
                    Estimate Std. Error t value Pr(>|t|)
## (Intercept)
                   86.1761798 0.8172087 105.452
                                                   <2e-16 ***
## `Total Revenue` -0.0003388 0.0001880 -1.801
                                                   0.0732 .
## `State Revenue`
                   0.0003606 0.0002604
                                          1.385
                                                   0.1678
## `Local Revenue`
                   0.0005006 0.0001998
                                          2.506
                                                  0.0131 *
## `K-12 Total`
                  -0.0006479 0.0011588 -0.559
                                                   0.5767
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
## Residual standard error: 9 on 187 degrees of freedom
     (18 observations deleted due to missingness)
```

```
## Multiple R-squared: 0.07621, Adjusted R-squared: 0.05645
## F-statistic: 3.857 on 4 and 187 DF, p-value: 0.004909
```

Now we will collect the results of the regression.

```
results=coef(summary(LinRegEPI))
data.frame(Coefficient=results[,1],Significant=results[,4]<0.05)</pre>
```

```
##
                     Coefficient Significant
                   86.1761797589
## (Intercept)
                                         TRUE
## `Total Revenue` -0.0003387524
                                        FALSE
## `State Revenue`
                    0.0003605731
                                        FALSE
## `Local Revenue`
                    0.0005006454
                                        TRUE
## `K-12 Total`
                   -0.0006479249
                                        FALSE
summary(LinRegEPI)$adj.r.squared
```

#### ## [1] 0.0564482

Let's develop scatter plots. First, we need to assign variables.

```
var2=data$`State Revenue`

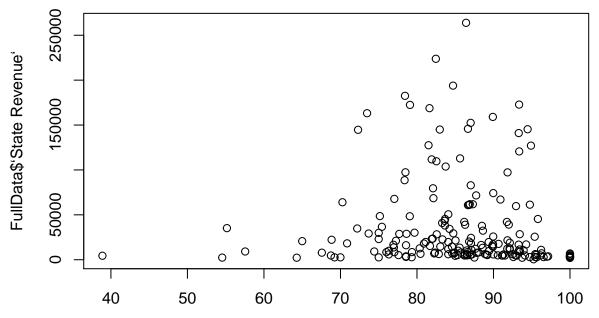
# Saving mean and sd:

mnVar2=mean(var2,na.rm = T)
sdVar2=sd(var2,na.rm = T)

library(ggplot2)

#Multivariate Scatter Plot State Revenue.

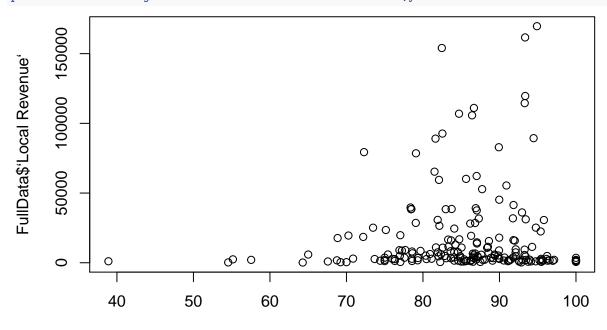
plot(x=FullData$`Adjusted 5-Year Cohort Graduation Rate`,y=FullData$`State Revenue`)
```



FullData\$'Adjusted 5-Year Cohort Graduation Rate'



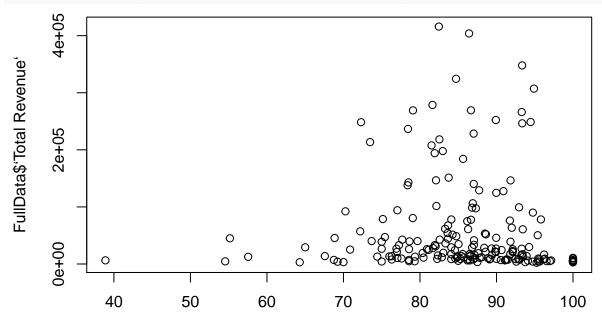
plot(x=FullData\$`Adjusted 5-Year Cohort Graduation Rate`,y=FullData\$`Local Revenue`)



FullData\$'Adjusted 5-Year Cohort Graduation Rate'

#Multivariate Scatter Plot Total Revenue.

plot(x=FullData\$`Adjusted 5-Year Cohort Graduation Rate`,y=FullData\$`Total Revenue`)



FullData\$'Adjusted 5-Year Cohort Graduation Rate'

Now plot a histogram of Graduation Rates.

```
data=FullData[is.finite(FullData$`State Revenue`),]
var=data$`Adjusted 5-Year Cohort Graduation Rate`
mnVar=mean(var,na.rm = T)
sdVar=sd(var,na.rm = T)
base = ggplot(data, aes(x=var))
hist = base + geom_histogram(fill="blue",
                              color='grey',
                              aes(y=..density..))
histAndNormal = hist + stat_function(fun=dnorm,
                                       color="red",
                                       args=list(mean=mnVar,sd=sdVar))
histAndNormal
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
## Warning: Removed 18 rows containing non-finite values (stat_bin).
   0.06 -
   0.04 -
density
   0.02 -
   0.00 -
                                      60
                                                              80
              40
                                                                                      100
```

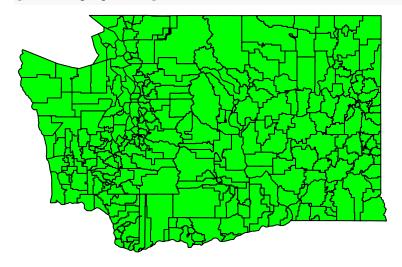
#### Import Washington State School Districts Map

```
# Import Map Files

compressedMap= 'https://github.com/awood59/PROJECT/raw/master/WAOFM%20-%20GIS%20-%20School%20District%2
```

var

```
library(utils)
temp=tempfile()
download.file(compressedMap, temp)
unzip(temp)
(maps=list.files(pattern = 'shp'))
## [1] "geo_export_4f6f751a-05f3-48de-adf9-962964ba024e.shp"
library(rgdal)
## Warning: package 'rgdal' was built under R version 3.4.3
## Loading required package: sp
## Warning: package 'sp' was built under R version 3.4.3
## rgdal: version: 1.2-16, (SVN revision 701)
\hbox{\tt\#\#} \quad \hbox{\tt Geospatial Data Abstraction Library extensions to R successfully loaded}
## Loaded GDAL runtime: GDAL 2.1.3, released 2017/20/01
## Path to GDAL shared files: /Library/Frameworks/R.framework/Versions/3.4/Resources/library/rgdal/gda
## GDAL binary built with GEOS: FALSE
## Loaded PROJ.4 runtime: Rel. 4.9.3, 15 August 2016, [PJ_VERSION: 493]
## Path to PROJ.4 shared files: /Library/Frameworks/R.framework/Versions/3.4/Resources/library/rgdal/p
## Linking to sp version: 1.2-5
wazipMap <- rgdal::readOGR("geo_export_4f6f751a-05f3-48de-adf9-962964ba024e.shp",stringsAsFactors=F)</pre>
## OGR data source with driver: ESRI Shapefile
## Source: "geo_export_4f6f751a-05f3-48de-adf9-962964ba024e.shp", layer: "geo_export_4f6f751a-05f3-48de
## with 295 features
## It has 7 fields
plot(wazipMap,col='green')
```



#### **Next Step**

I will follow up by linking the map and plotting graduation rates via district.

```
# I need to see which columns can be connected in the data and the map. We can see we have the column ^{\prime}
names(wazipMap)
## [1] "ccddd"
                                                        "longitude" "latitude"
                   "et id"
                                "esd"
                                            "cenid"
## [7] "name"
# Fortunately, they are the same as the District Name in the Data file.
list(wazipMap@data$name)
## [[1]]
     [1] "Aberdeen School District"
##
##
     [2] "Adna School District"
##
     [3] "Almira School District"
##
     [4] "Anacortes School District"
##
     [5] "Arlington School District"
     [6] "Asotin-Anatone School District"
##
     [7] "Auburn School District"
##
     [8] "Bainbridge Island School District"
##
##
     [9] "Battle Ground School District"
    [10] "Bellevue School District"
##
    [11] "Bellingham School District"
   [12] "Benge School District"
   [13] "Bethel School District"
##
##
   [14] "Bickleton School District"
  [15] "Blaine School District"
##
##
  [16] "Boistfort School District"
##
    [17] "Bremerton School District"
##
   [18] "Brewster School District"
##
   [19] "Bridgeport School District"
##
   [20] "Brinnon School District"
##
   [21] "Burlington-Edison School District"
##
   [22] "Camas School District"
   [23] "Cape Flattery School District"
   [24] "Carbonado School District"
##
##
   [25] "Cascade School District"
##
   [26] "Cashmere School District"
   [27] "Castle Rock School District"
##
   [28] "Centerville School District"
   [29] "Central Kitsap School District"
##
##
  [30] "Central Valley School District"
##
   [31] "Centralia School District"
    [32] "Chehalis School District"
##
##
   [33] "Cheney School District"
##
  [34] "Chewelah School District"
   [35] "Chimacum School District"
##
   [36] "Clarkston School District"
   [37] "Cle Elum-Roslyn School District"
##
   [38] "Clover Park School District"
##
   [39] "Colfax School District"
   [40] "College Place School District"
  [41] "Colton School District"
   [42] "Columbia School District (Stevens)"
```

```
## [43] "Columbia School District (Walla Walla)"
## [44] "Colville School District"
```

- ## [45] "Concrete School District"
- ## [46] "Conway School District"
- ## [47] "Cosmopolis School District"
- ## [48] "Coulee-Hartline School District"
- ## [49] "Coupeville School District"
- ## [50] "Crescent School District"
- ## [51] "Creston School District"
- ## [52] "Curlew School District"
- ## [53] "Cusick School District"
- ## [54] "Damman School District"
- # [55] "Darrington School District"
- ## [56] "Davenport School District"
- ## [57] "Dayton School District"
- ## [58] "Deer Park School District"
- ## [59] "Dieringer School District"
- ## [60] "Dixie School District"
- ## [61] "East Valley School District (Spokane)"
- ## [62] "East Valley School District (Yakima)"
- ## [63] "Eastmont School District"
- ## [64] "Easton School District"
- ## [65] "Eatonville School District"
- ## [66] "Edmonds School District"
- ## [67] "Ellensburg School District"
- ## [68] "Elma School District"
- ## [69] "Endicott School District"
- ## [70] "Entiat School District"
- ## [71] "Enumclaw School District"
- ## [72] "Ephrata School District"
- ## [73] "Evaline School District"
- ## [74] "Everett School District"
- ## [75] "Evergreen School District (Clark)"
- ## [76] "Evergreen School District (Stevens)"
- ## [77] "Federal Way School District"
- ## [78] "Ferndale School District"
- ## [79] "Fife Public Schools"
- ## [80] "Finley School District"
- ## [81] "Franklin Pierce School District"
- ## [82] "Freeman School District"
- ## [83] "Garfield School District"
- ## [84] "Glenwood School District"
- ## [85] "Goldendale School District"
- ## [86] "Grand Coulee Dam School District"
- ## [87] "Grandview School District"
- ## [88] "Granger School District"
- ## [89] "Granite Falls School District"
- ## [90] "Grapeview School District"
- ## [91] "Great Northern School District"
- ## [92] "Green Mountain School District"
- ## [93] "Griffin School District"
- ## [94] "Harrington School District"
- ## [95] "Highland School District"
- ## [96] "Highline School District"

- ## [97] "Hockinson School District"
- ## [98] "Hood Canal School District"
- ## [99] "Hoquiam School District"
- ## [100] "Inchelium School District"
- ## [101] "Index School District"
- ## [102] "Issaquah School District"
- ## [103] "Kahlotus School District"
- ## [104] "Kalama School District"
- ## [105] "Keller School District"
- ## [106] "Kelso School District"
- ## [107] "Kennewick School District"
- ## [108] "Kent School District"
- ## [109] "Kettle Falls School District"
- ## [110] "Kiona-Benton School District"
- ## [111] "Kittitas School District"
- ## [112] "Klickitat School District"
- ## [113] "La Center School District"
- ## [114] "La Conner School District"
- ## [115] "LaCrosse School District"
- ## [116] "Lake Chelan School District"
- ## [117] "Lake Quinault School District"
- ## [118] "Lake Stevens School District"
- ## [119] "Lake Washington School District"
- ## [120] "Lakewood School District"
- ## [121] "Lamont School District"
- ## [122] "Liberty School District"
- ## [123] "Lind School District"
- ## [124] "Longview Public Schools"
- ## [125] "Loon Lake School District"
- ## [126] "Lopez School District"
- ## [127] "Lyle School District"
- ## [128] "Lynden School District"
- ## [129] "Mabton School District"
- ## [130] "Mansfield School District"
- ## [131] "Manson School District"
- ## [132] "Mary M. Knight School District"
- ## [133] "Mary Walker School District"
- ## [134] "Marysville School District"
- ## [135] "McCleary School District"
- ## [136] "Mead School District"
- ## [137] "Medical Lake School District"
- ## [138] "Mercer Island School District"
- ## [139] "Meridian School District"
- ## [140] "Methow Valley School District"
- ## [141] "Mill A School District"
- ## [142] "Monroe School District"
- ## [143] "Montesano School District"
- ## [144] "Morton School District"
- ## [145] "Moses Lake School District"
- ## [146] "Mossyrock School District"
- ## [147] "Mount Adams School District"
- ## [148] "Mount Baker School District"
- ## [149] "Mount Pleasant School District"
- ## [150] "Mount Vernon School District"

```
## [151] "Mukilteo School District"
```

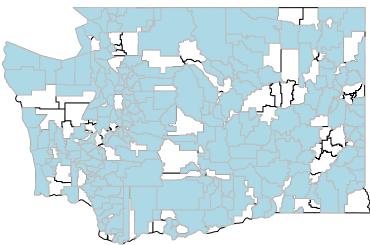
- ## [152] "Naches Valley School District"
- ## [153] "Napavine School District"
- ## [154] "Naselle-Grays River Valley School District"
- ## [155] "Nespelem School District"
- ## [156] "Newport School District"
- ## [157] "Nine Mile Falls School District"
- ## [158] "Nooksack Valley School District"
- ## [159] "North Beach School District"
- ## [160] "North Franklin School District"
- ## [161] "North Kitsap School District"
- ## [162] "North Mason School District"
- ## [163] "North River School District"
- ## [164] "North Thurston Public Schools"
- ## [165] "Northport School District"
- ## [166] "Northshore School District"
- ## [167] "Oak Harbor School District"
- ## [168] "Oakesdale School District"
- ## [169] "Oakville School District"
- ## [170] "Ocean Beach School District"
- ## [171] "Ocosta School District"
- ## [172] "Odessa School District"
- ## [173] "Okanogan School District"
- ## [174] "Olympia School District"
- ## [175] "Omak School District"
- ## [176] "Onalaska School District"
- ## [177] "Onion Creek School District"
- ## [178] "Orcas Island School District"
- ## [179] "Orchard Prairie School District"
- ## [180] "Orient School District"
- ## [181] "Orondo School District"
- ## [182] "Oroville School District"
- ## [183] "Orting School District"
- ## [184] "Othello School District"
- ## [185] "Palisades School District"
- ## [186] "Palouse School District"
- ## [187] "Pasco School District"
- ## [188] "Pateros School District"
- ## [189] "Paterson School District"
- ## [190] "Pe Ell School District"
- ## [191] "Peninsula School District"
- ## [192] "Pioneer School District"
- ## [193] "Pomeroy School District"
- ## [194] "Port Angeles School District"
- ## [195] "Port Townsend School District"
- ## [196] "Prescott School District"
- ## [197] "Prosser School District"
  ## [198] "Pullman School District"
- "" [100] Tullman behoof bibelies
- ## [199] "Puyallup School District"
  ## [200] "Queets-Clearwater School District"
- "" [200] Queens electrated beneat black
- ## [201] "Quilcene School District"
- ## [202] "Quillayute Valley School District"
- ## [203] "Quincy School District"
- ## [204] "Rainier School District"

```
## [205] "Raymond School District"
```

- ## [206] "Reardan-Edwall School District"
- ## [207] "Renton School District"
- ## [208] "Republic School District"
- ## [209] "Richland School District"
- ## [210] "Ridgefield School District"
- ## [211] "Ritzville School District"
- ## [212] "Riverside School District"
- ## [213] "Riverview School District"
- ## [214] "Rochester School District"
- ## [215] "Roosevelt School District"
- ## [216] "Rosalia School District"
- ## [217] "Royal School District"
- ## [218] "San Juan Island School District"
- ## [219] "Satsop School District"
- ## [220] "Seattle School District"
- ## [221] "Sedro-Woolley School District"
- ## [222] "Selah School District"
- ## [223] "Selkirk School District"
- ## [224] "Sequim School District"
- ## [225] "Shaw Island School District"
- ## [226] "Shelton School District"
- ## [227] "Shoreline School District"
- ## [228] "Skamania School District"
- ## [229] "Skykomish School District"
- ## [230] "Snohomish School District"
- ## [231] "Snoqualmie Valley School District"
- ## [232] "Soap Lake School District"
- ## [233] "South Bend School District"
- ## [234] "South Kitsap School District"
- ## [235] "South Whidbey School District"
- ## [236] "Southside School District"
- ## [237] "Spokane Public Schools"
- ## [238] "Sprague School District"
- ## [239] "St. John School District"
- ## [240] "Stanwood-Camano School District"
- ## [241] "Star School District"
- ## [242] "Starbuck School District"
- ## [243] "Stehekin School District"
- ## [244] "Steilacoom Historical School District"
- ## [245] "Steptoe School District"
- ## [246] "Stevenson-Carson School District"
- ## [247] "Sultan School District"
- ## [248] "Summit Valley School District"
- ## [249] "Sumner School District"
- ## [250] "Sunnyside School District"
- ## [251] "Tacoma Public Schools"
- ## [252] "Taholah School District"
- ## [253] "Tahoma School District"
- ## [254] "Tekoa School District"
- ## [255] "Tenino School District"
- ## [256] "Thorp School District"
- ## [257] "Toledo School District"
- ## [258] "Tonasket School District"

```
## [259] "Toppenish School District"
## [260] "Touchet School District"
## [261] "Toutle Lake School District"
## [262] "Trout Lake School District"
## [263] "Tukwila School District"
## [264] "Tumwater School District"
## [265] "Union Gap School District"
## [266] "University Place School District"
## [267] "Valley School District"
## [268] "Vancouver Public Schools"
## [269] "Vashon Island School District"
## [270] "Wahkiakum School District"
## [271] "Wahluke School District"
## [272] "Waitsburg School District"
## [273] "Walla Walla School District"
## [274] "Wapato School District"
## [275] "Warden School District"
## [276] "Washougal School District"
## [277] "Washtucna School District"
## [278] "Waterville School District"
## [279] "Wellpinit School District"
## [280] "Wenatchee School District"
## [281] "West Valley School District (Spokane)"
## [282] "West Valley School District (Yakima)"
## [283] "White Pass School District"
## [284] "White River School District"
## [285] "White Salmon Valley School District"
## [286] "Wilbur School District"
## [287] "Willapa Valley School District"
## [288] "Wilson Creek School District"
## [289] "Winlock School District"
## [290] "Wishkah Valley School District"
## [291] "Wishram School District"
## [292] "Woodland School District"
## [293] "Yakima School District"
## [294] "Yelm Community Schools"
## [295] "Zillah School District"
# We can check that to verify.
names (FullData)
    [1] "District Name"
##
   [2] "State.x"
##
   [3] "Year"
   [4] "Total Revenue"
##
##
    [5] "State Revenue"
##
   [6] "Local Revenue"
##
   [7] "District Code"
   [8] "Adjusted 5-Year Cohort Graduation Rate"
##
   [9] "Cohort dropout rate"
## [10] "School Year"
## [11] "State.y"
## [12] "K-12 Total"
## [13] "PK Total"
```

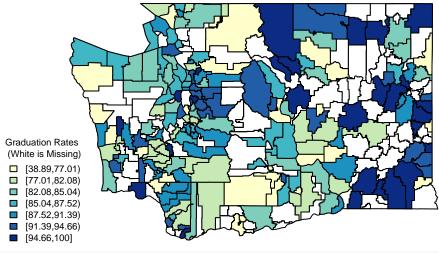
```
## [14] "Full K Total"
## [15] "Half K Total"
## [16] "Gr 1 Total"
## [17] "Gr 2 Total"
## [18] "Gr 3 Total"
## [19] "Gr 4 Total"
## [20] "Gr 5 Total"
## [21] "Gr 6 Total"
## [22] "Gr 7 Total"
## [23] "Gr 8 Total"
## [24] "Gr 9 Total"
## [25] "Gr 10 Total"
## [26] "Gr 11 Total"
## [27] "Gr 12 Total"
# Let's run one last string to be absolutely sure.
str(wazipMap$name)
## chr [1:295] "Aberdeen School District" "Adna School District" ...
str(FullData$`District Name`)
## chr [1:210] "Aberdeen School District" "Adna School District" ...
## Everything looks good. Now we merge the map file with the data file by District Name.
contribWAmap=merge(wazipMap,FullData, by.x='name', by.y='District Name',all.x=F)
# I want to see the number of rows in the new map.
nrow(contribWAmap)
## [1] 203
## Now we plot the map to see that we are representing missing data correctly.
plot(wazipMap,col='white')
plot(contribWAmap,col='light blue',border='grey',add=T)
```



## We need to install the correct libraries.
library(RColorBrewer)

```
library(classInt)
## Next we assign the variable for plotting.
varToPLot=contribWAmap$`Adjusted 5-Year Cohort Graduation Rate`
numberOfClasses = 7
colorForScale='YlGnBu'
colors = brewer.pal(numberOfClasses, colorForScale)
intervals <- classIntervals(varToPLot, numberOfClasses,</pre>
                            style = "quantile",
                            dataPrecision=2)
## Warning in classIntervals(varToPLot, numberOfClasses, style = "quantile", :
## var has missing values, omitted in finding classes
colorPallette <- findColours(intervals, colors)</pre>
## This code is used to assign legend text, colors, and location.
legendText="Graduation Rates \n (White is Missing)"
shrinkLegend=0.6
title="Graduation Rates Via School District in Washington State 2015"
plot(wazipMap,col='white',main=title)
# Second change: col = colors[varToPLot]
plot(contribWAmap, col = colorPallette,border='black',add=TRUE)
legend('bottomleft', legend = names(attr(colorPallette, "table")),
       fill = attr(colorPallette, "palette"), cex = shrinkLegend,
       btv = "n".
       title=legendText)
```

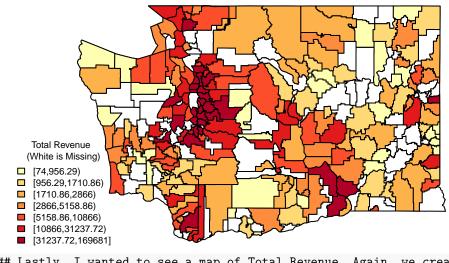
# **Graduation Rates Via School District in Washington State 2015**



# Now I want to see a map of Local Revenue. We create a new variable to plot. I also chose to change th varToPLot2=contribWAmap\$`Local Revenue`

```
numberOfClasses = 7
colorForScale='YlOrRd'
colors = brewer.pal(numberOfClasses, colorForScale)
intervals <- classIntervals(varToPLot2, numberOfClasses,</pre>
                             style = "quantile",
                             dataPrecision=2)
colorPallette <- findColours(intervals, colors)</pre>
legendText="Total Revenue \n (White is Missing)"
shrinkLegend=0.6
title="Local Revenue Via School District in Washington State 2015"
plot(wazipMap,col='white',main=title)
# second change: col = colors[varToPLot]
plot(contribWAmap, col = colorPallette,border='black',add=TRUE)
legend('bottomleft', legend = names(attr(colorPallette, "table")),
       fill = attr(colorPallette, "palette"), cex = shrinkLegend,
       bty = "n",
       title=legendText)
```

### **Local Revenue Via School District in Washington State 2015**



## Lastly, I wanted to see a map of Total Revenue. Again, we create a new variable, and rerun the map.

```
title="Total Revenue Via School District in Washington State 2015"

plot(wazipMap,col='white',main=title)

# second change: col = colors[varToPLot]

plot(contribWAmap, col = colorPallette,border='black',add=TRUE)
legend('bottomleft', legend = names(attr(colorPallette, "table")),
    fill = attr(colorPallette, "palette"), cex = shrinkLegend,
    bty = "n",
    title=legendText)
```

# **Total Revenue Via School District in Washington State 2015**

