```r
1   library(pastecs)
2
3   library(readr) #importing csv files
4   library(dplyr) #general analysis
5   library(ggplot2) #making charts
6   library(lubridate) #date functions
7   library(reshape2) #use this for melt function to create one record for each team
8   library(tidyr)
9   library(janitor) #use this for doing crosstabs
10  library(scales) #needed for stacked bar chart axis labels
11  library(knitr) #needed for making tables in markdown page
12  library(htmltools)#this is needed for Rstudio to display kable and other html code
13  library(rmarkdown)
14  library(kableExtra)
15  library(ggthemes)
16  library(stringr)
17  library(RMySQL)
18  library(readxl) #for importing Excel files
19  library(DT) #needed for making  searchable sortable data tble
20  library(waffle)
21  library(foreign) #for importing SPSS files
22  library(jsonlite) #for exporting JSON
23  library(car)
24  library(aws.s3) #for loading to AWS server
25  options(scipen=999)
26  library(scales)
27
28
29  #need compare_districts table that is created in the basicskills_districts.R file
30
31
32
33  # AUTO-GENERATE CHARTS --------------------------------------------------------------
34
35
36  #this generates list of the  districts that are over/under by 15% plus St. Paul &
    Minneapolis
37  districts <-  compare_districts %>%
38    filter(yr==2018, diffscope=='over by 15% or more' | diffscope=='under by 15% or more'
    | districtid=='0625-01-000' | districtid=='0001-03-000') %>% ungroup() %>%
    select(district_name) %>% distinct()
39
40
41
42  #this generates charts and data files for all the districts in districts df
43  #puts them in sub-directory called "district_exports"
44  for (i in 1:nrow(districts)){
45
46    district_selected = districts$district[i]
47
48    g1_data <-  gather(compare_districts %>%
49                      filter(district_name==district_selected) %>%
50                      ungroup()%>%
51                      select(yr, total_basic_skills_revenue, tot_spent), type, amount,
    total_basic_skills_revenue:tot_spent)
52
```

```
 53    plot <- ggplot(g1_data, aes(yr, amount, fill=type))+
 54      geom_bar(stat = "identity", position = 'dodge') +
 55      scale_y_continuous(labels=dollar_format())+
 56      scale_x_continuous(breaks=c(2007:2018, 1))+
 57      scale_fill_manual(name=NULL,
 58                        values=c("#00559c", "#6c7176"),
 59                        breaks=c("total_basic_skills_revenue", "tot_spent"),
 60                        labels=c("Revenue", "Expenditure"))+
 61      theme_hc()+
 62      labs(title = district_selected,
 63           subtitle = "Basic Skills revenue and spending",
 64           caption = "Star Tribune analysis",
 65           x="Ending fiscal year",
 66           y="")
 67    plot
 68
 69    plotname <-  paste('./district_exports/', district_selected, 'graphic', sep='_')
 70
 71    ggsave(paste(plotname, '.jpg'), plot,width=8, height=5, units="in", dpi="print" )
 72
 73    df <-  compare_districts %>%
 74      filter(district_name==district_selected) %>%
 75      ungroup() %>%
 76      select(yr, district_name, total_compensatory_revenue, el_revenue,
 77  el_concentration_revenue, total_basic_skills_revenue, comp_spent, el_spent, tot_spent)
 77
 78    datafilename <-  paste('./district_exports/', district_selected, 'data', sep='_')
 79
 80    write.csv(df, paste(datafilename, '.csv'), row.names=FALSE)
 81
 82 }
 83
 84
 85
 86 # MAKE CHARTS MANUALLY ------------------------------------------------------
 87
 88 #use code below to create a chart for a single district and then export manually
 89
 90
 91 district2 = 'MONTGOMERY-LONSDALE SCHOOL DISTRICT'
 92
 93 g2_data <-  gather(compare_districts %>%
 94                    filter(district_name==district2) %>%
 95                    ungroup()%>%
 96                    select(yr, total_basic_skills_revenue, tot_spent), type, amount,
 96  total_basic_skills_revenue:tot_spent)
 97
 98 plot2 <- ggplot(g2_data, aes(yr, amount, fill=type))+
 99    geom_bar(stat = "identity", position = 'dodge') +
100    scale_y_continuous(labels=dollar_format())+
101    scale_x_continuous(breaks=c(2007:2018, 1))+
102    scale_fill_manual(name=NULL,
103                      values=c("#00559c", "#6c7176"),
104                      breaks=c("basicskills_rev", "tot_spent"),
105                      labels=c("Revenue", "Expenditure"))+
106    theme_hc()+
107    labs(title = district2,
```

```
108          subtitle = "Basic Skills revenue and spending",
109          caption = "Star Tribune analysis",
110          x="Ending fiscal year",
111          y="")
112  plot2
113
114
115
116
```