# inward-facing

Overview:

In the first chunk sourced "wrangling_code.R", I combine the two tables, representing the male and female employment rates of each country, into a tibble using inner_join(), and transform the horizontal data into vertical data through pivot_longer()

In the second chunk, I set the function plot2()and plot3() to extract data of Japan and Canada from dataset and then draw the data of the two countries separately.

```
source("wrangling_code.R",echo=TRUE)
```

```
##
## > library(tidyverse)

## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.4     v dplyr   1.0.7
## v tidyr   1.1.3     v stringr 1.4.0
## v readr   2.0.1     v forcats 0.5.1

## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()

##
## > library(tibble)
##
## > library(dplyr)
##
## > setwd("C:/Users/liyuyang/Desktop/BU/2021fall/615/assign2")
##
## > female <- as_tibble(read.csv("females_aged_15_24_employment_rate_percent.csv"))
##
## > male <- as_tibble(read.csv("males_aged_15_24_employment_rate_percent.csv"))
##
## > colnames(male)[1] <- "country"
##
## > colnames(female)[1] <- "country"
##
## > connect <- inner_join(male, female, by = "country")
##
## > tidy <- connect %>% pivot_longer(!country, names_to = "year",
## +     values_to = "employment_rate")
##
## > tidy$year <- gsub("X", "", tidy$year)
```

```
library(tidyverse)
#install.packages('tibble')
library(tibble)
library(dplyr)     #Import the required packages
setwd("C:/Users/liyuyang/Desktop/BU/2021fall/615/assign2")    #Set the path of data

female<-as_tibble(read.csv("females_aged_15_24_employment_rate_percent.csv"))
male<- as_tibble(read.csv("males_aged_15_24_employment_rate_percent.csv"))    #Read data
colnames(male)[1]<-"country"
colnames(female)[1]<-"country"     #Change the name of first column
connect<- inner_join(male,female,by="country")   #Connect two data sets into one table
tidy<-connect %>%
  pivot_longer(!country, names_to ="year", values_to ="employment_rate")
tidy$year<-gsub("X","",tidy$year)   #Change horizontal data to vertical data,
                                    #and put the same country together
```

```
source("visualization_function.R",echo=TRUE)
```

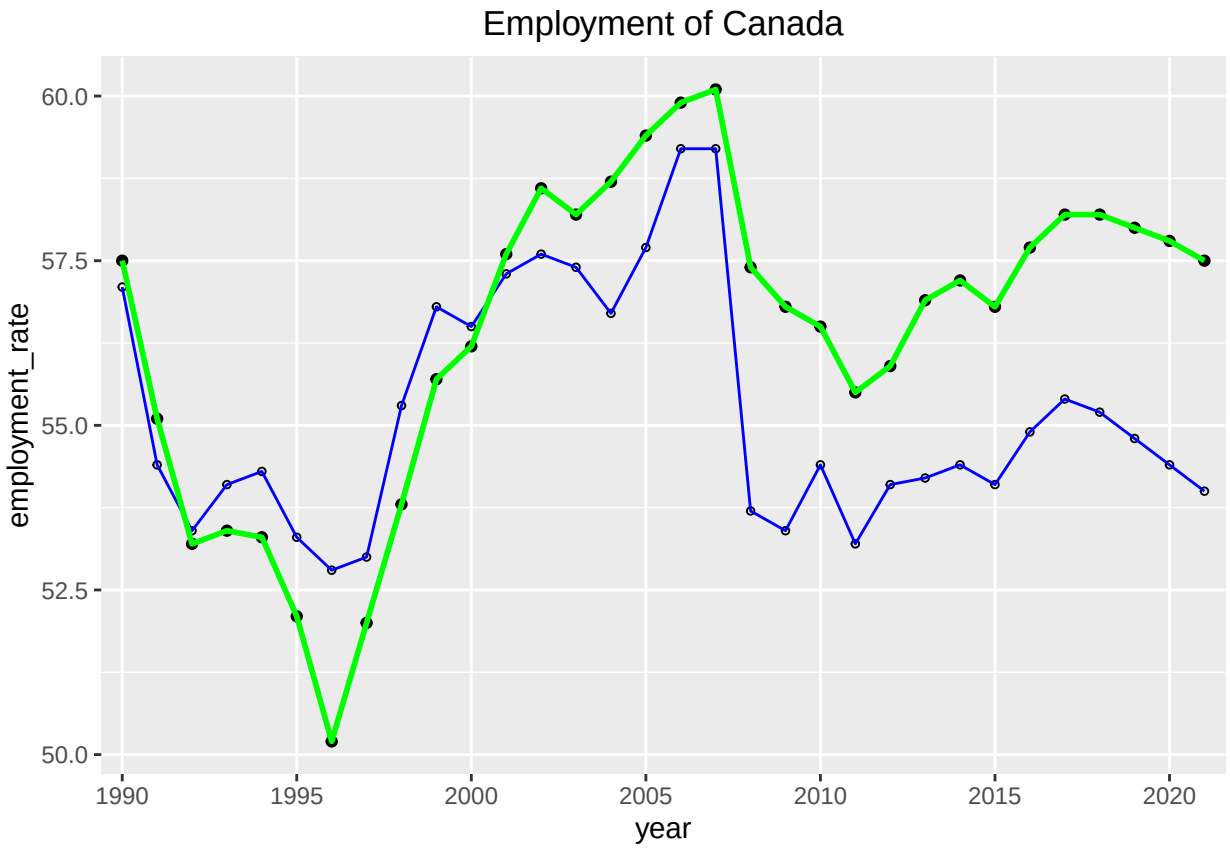
```
##
## > plot2 <- function(data, Canada) {
## +     data <- data
## +     countryname <- "Canada"
## +     dataset <- filter(data, data$country == countryname)
## +      .... [TRUNCATED]
##
## > plot3 <- function(data, Japan) {
## +     data <- data
## +     countryname <- "Japan"
## +     dataset <- filter(data, data$country == countryname)
## +     da .... [TRUNCATED]
```

```
plot2<- function(data,Canada){        #Set the function
  data<-data
  countryname<-"Canada"              #Select Canada to plot
  dataset<-filter(data,data$country==countryname)   #Select Canada from dataset
  dataset$year<-gsub(".x","",dataset$year)
  dataset$year<-gsub(".y","",dataset$year)     #Change the value of "year"
                                              #column to numberic
  n<-as.numeric(nrow(dataset))   #Get the row number of dataset
  dataset1<-dataset[1:(n/2),]    #From row 1 to row n/2 is the data of males
  dataset2<-dataset[(n/2+1):n,]  #From row n/2+1 to row n is the data of females
  p<-ggplot(data=dataset,aes(x=year,y=employment_rate))+   #The x axis is year
                                                          #the y axis is employment rate
    geom_point(data=dataset1,aes(x=year,y=employment_rate),pch=1,size=1)+ #Add points of males

    geom_line(data=dataset1,group=1,col="blue")+  #Add line of males and color is blue
    geom_point(data=dataset2,aes(x=year,y=employment_rate))+ #Add points of females
    geom_line(data=dataset2,group=1,col="green",pch=16,size=1)+ #Add line of females
                                                               #and color is green
    scale_x_discrete(breaks=seq(1990,2021,5))+    #Adjust the x coordinate spacing
    ggtitle("Employment of Canada") +   #Add title
    theme(plot.title = element_text(hjust = 0.5))
  p
```

```
  return(p)
}
plot2(tidy,Canada)
```

```
## Warning: Ignoring unknown parameters: shape
```




```
#plot3() is almost same as plot2()
#the only difference is the selected country is Japan rather Canada
plot3<- function(data,Japan){
  data<-data
  countryname<-"Japan"
  dataset<-filter(data,data$country==countryname)
  dataset$year<-gsub(".x","",dataset$year)
  dataset$year<-gsub(".y","",dataset$year)
  n<-as.numeric(nrow(dataset))
  dataset1<-dataset[1:(n/2),]
  dataset2<-dataset[(n/2+1):n,]
  p<-ggplot(data=dataset,aes(x=year,y=employment_rate))+
    geom_point(data=dataset1,aes(x=year,y=employment_rate),pch=1,size=1)+
    geom_line(data=dataset1,group=1,col="blue")+  #male
    geom_point(data=dataset2,aes(x=year,y=employment_rate))+
    geom_line(data=dataset2,group=1,col="green",pch=16,size=1)+ #female
    scale_x_discrete(breaks=seq(1990,2021,5))+
    ggtitle("Employment of Japan") +
```

```
    theme(plot.title = element_text(hjust = 0.5))
  p
  return(p)
}
plot3(tidy,Japan)
```

```
## Warning: Ignoring unknown parameters: shape
```