# R-plotly-mini-course

Outline

- Basic Review on R environment
- How to connect R with plotly platform
- Data Visualization on plotly
- It's Your turn!!
- Give us some feedback

### 1. Basic Review on R environment

- Please open another file Introduction-to-R-Environment.Rmd

#### Clear the environment

```
rm(list=ls())
```

### 2.How to connect R with plotly platform

#### 2.1 Import Data

```
data.vis.1.sa<-read.csv("./_data/data.vis.1.sa.csv")
```

`./` represents the current working directory, normally where your .Rproj file is.
`./_data/` represents the subdirectory under './'.

```
head(data.vis.1.sa)
```

look at the class of each variable

#### 2.2 Convert to Date class

```
data.vis.1.sa$date <- as.Date(data.vis.1.sa$date)
```

Data type is an important issue in R, but it is not the main topic of this class.

```
head(data.vis.1.sa)
```

look at the class of `class` variable

#### 2.3 Introduction to plotly

```
install.packages("plotly")
```

#### Load plotly package

```
library(plotly)
```

**Initiate a plotly plot**

```
data.vis.1.sa
library(magrittr)
data.vis.1.sa %>% plot_ly(x=~date) %>%
  add_lines(y=~GDP,
            name="GDP") -> p0
p0
```

Without pipe, the code will be like : add_lines(plot_ly(data.vis.1.sa, x=~date, y=~GDP), name="GDP")->p0

```
p0 %>% add_lines(y=~C,
          name="Consumption") -> p0
p0
```

```
data.vis.1.sa %>% plot_ly(x=~date) %>%
  add_lines(y=~GDP,
            name="GDP") %>%
  add_lines(y=~C,
            name="Consumption") -> p0
p0
```

```
data.vis.1.sa %>% plot_ly(x=~date) %>%
  add_lines(y=~GDP,
            name="GDP") %>%
  add_lines(y=~C,
            name="Consumption") %>%
  add_lines(y=~G,
            name="Gov't Purchase") %>%
  add_lines(y=~I,
            name="Investment") %>%
  add_lines(y=~Ex,
            name="Export") %>%
  add_lines(y=~Im,
            name="Import")-> p0
p0
```

### 2.4 Upload to plotly and modify in Plot.ly platform

Find your authentication API keys in your online settings and them in the function below.

```
Sys.setenv("plotly_username"="your username on plotly")
Sys.setenv("plotly_api_key"="the API key string on plotly")
```

```
Sys.setenv("plotly_username"="your username on plotly")
Sys.setenv("plotly_api_key"="the API key string on plotly")
api_create(p0,filename="taiwan real gdp SA",fileopt="overwrite")
```

## 3. Data Visualization on plotly

In Plot.ly, you can
- adjust your graph by clicking `Edit`
- download graph code by clicking `View` and choose `R`

### 3.1 Basic data visualization rule

Make sure you include the following components:
- Proper title

- meaningful subtitle
- Data source
- Layout should follow the Z-rule

### 3.2 Plot.ly trick

You can download your designed layout from plot.ly to use in your program.

```
p0 %>% layout(

  Copy and paste the code chunck XXX from the part inside list()
of layout<-list(XXX)

)
```

### 4. It's Your turn!!

- Open the homework.Rmd in this project

### 5. Give us some feedback

- Please open the questionnaire and further materials.Rmd