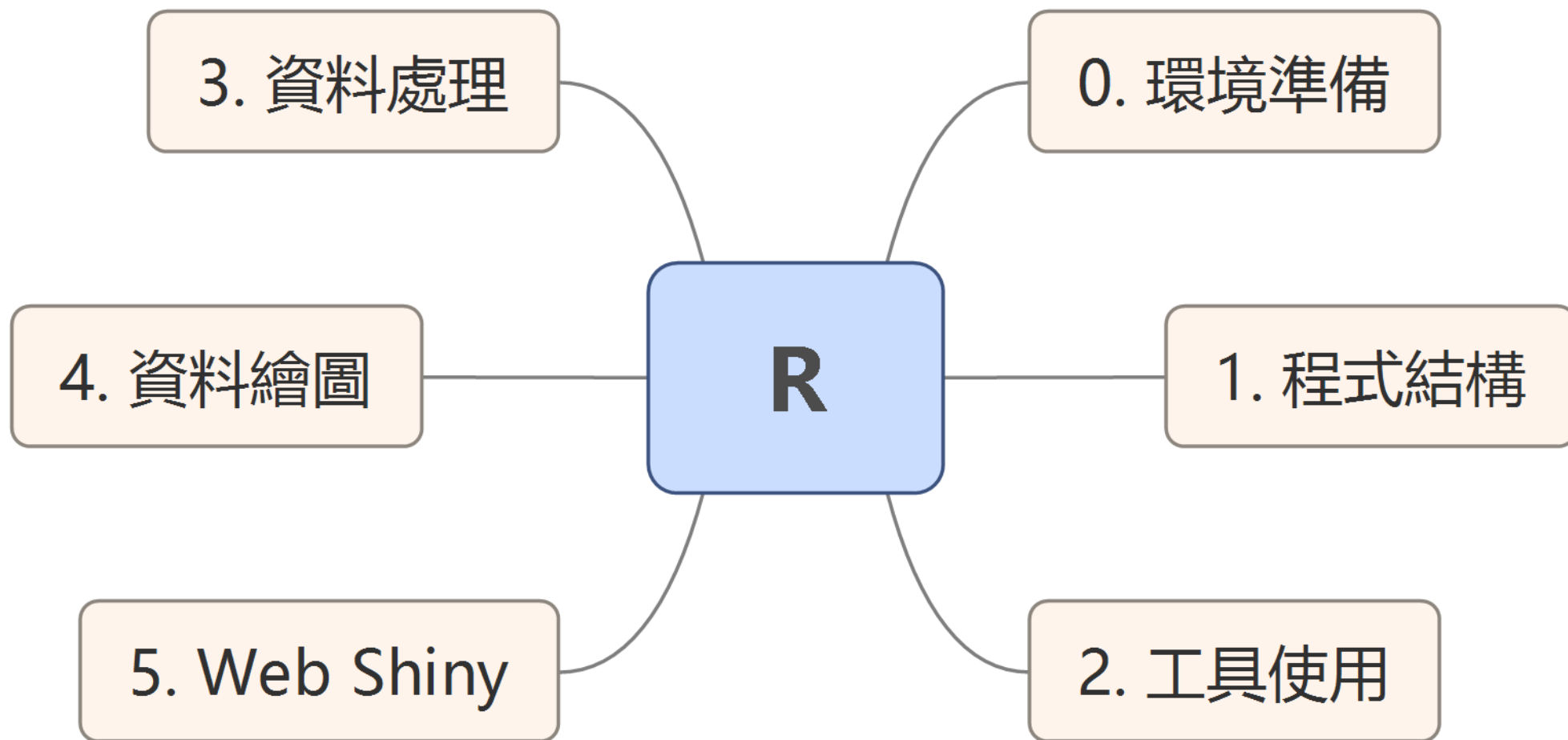


R Web Shiny

目的

在此講述 R Shiny 入門。



R Shiny packages

shiny


v1.0.5

Other versions ▾

35,620 ⓘ
Monthly downloads

97th
Percentile

by [Winston Chang](#)[View Source](#)

<https://www.rdocumentation.org/packages/shiny>

Copy

Web Application Framework for R

Makes it incredibly easy to build interactive web applications with R. Automatic "reactive" binding between inputs and outputs and extensive prebuilt widgets make it possible to build beautiful, responsive, and powerful applications with minimal effort.

Readme

Shiny

Travis: build passing

AppVeyor: build passing

Shiny is a new package from RStudio that makes it incredibly easy to build interactive web applications with R.

For an introduction and examples, visit the [Shiny Dev Center](#).

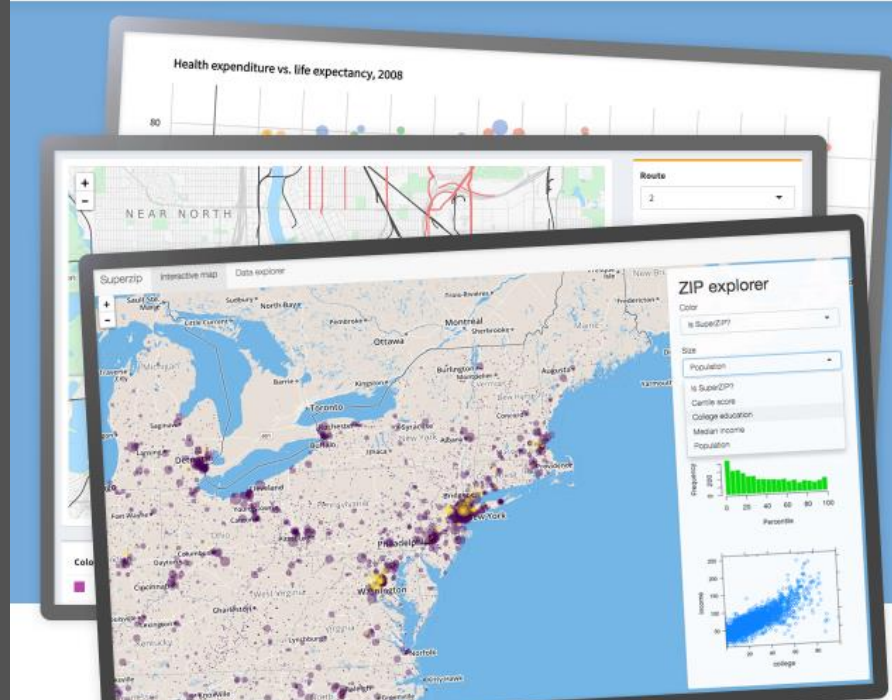
R Shiny

<https://shiny.rstudio.com/>

Shiny

from R Studio

[Get Started](#) [Gallery](#) [Articles](#) [Reference](#) [Deploy](#) [Help](#) [Contribute](#)





The image displays three overlapping screenshots of Shiny web applications. The topmost screenshot shows a map of the 'NEAR NORTH' region with a 'Route' dropdown menu set to '2'. The middle screenshot is titled 'Health expenditure vs. life expectancy, 2008' and features a scatter plot with a regression line. The bottom screenshot, titled 'ZIP explorer', includes a map of the United States with colored dots representing different ZIP codes, a sidebar with filters for 'Color' (e.g., % SuperZIP), 'Size' (e.g., Population), and 'Shape' (e.g., % SuperZIP), and a main plot area with a histogram and a scatter plot.

Interact. Analyze. Communicate.

Take a fresh, interactive approach to telling your data story with Shiny. Let users interact with your data and your analysis. And do it all with R.

R Shiny Gallery 官網範例

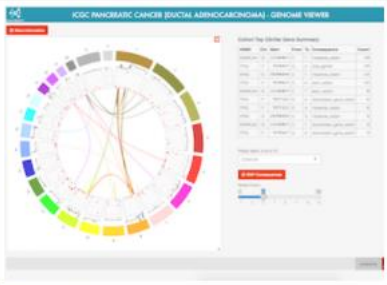
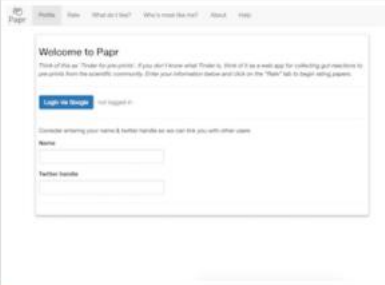
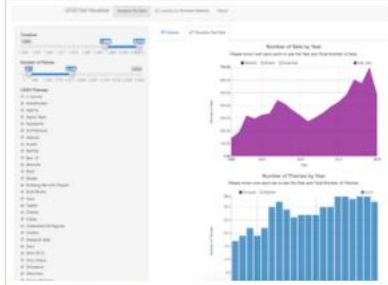

<https://shiny.rstudio.com/gallery/>

Shiny from  Studio
Get Started
Gallery
Articles
Reference
Deploy
Help
Contribute


Gallery

Shiny User Showcase

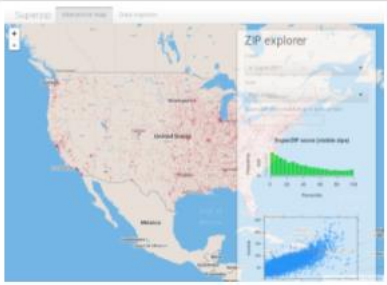
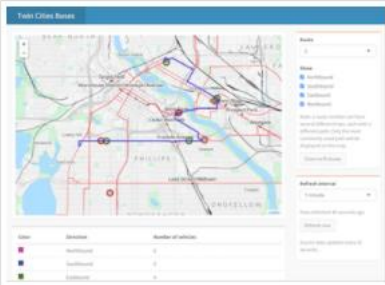
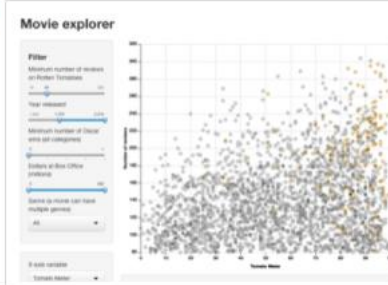
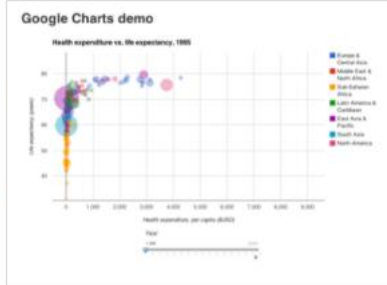
The [Shiny User Showcase](#) contains an inspiring set of sophisticated apps developed and contributed by Shiny users.

Genome browser Paprr Lego Set Database Explorer See more

Interactive visualizations

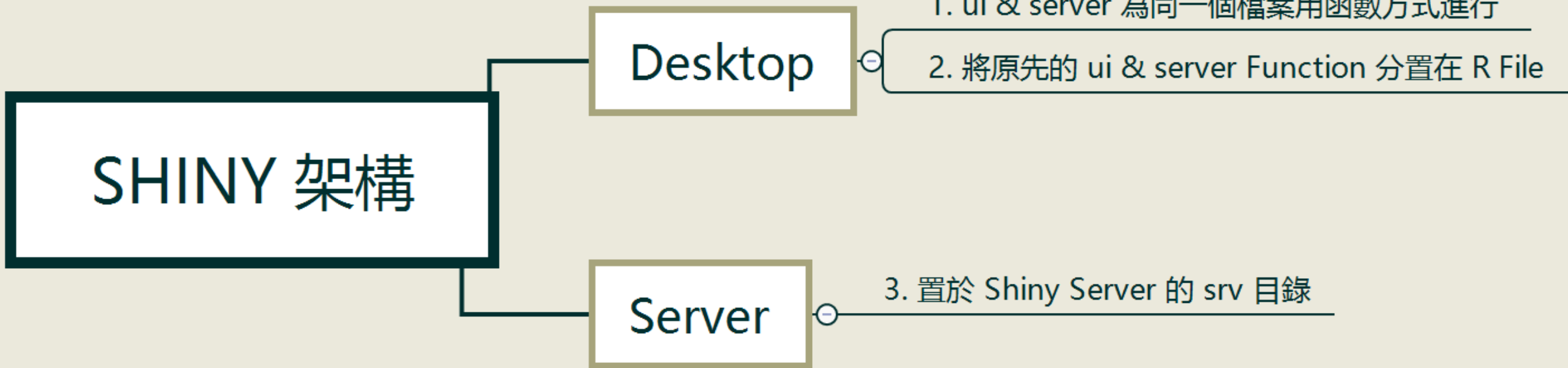
Shiny is designed for fully interactive visualization, using JavaScript libraries like d3, Leaflet, and Google Charts.

SuperZip example Bus dashboard Movie explorer Google Charts

R Shiny 架構

1. ui & server 為同一個檔案用函數方式進行
2. 將原先的 ui & server Function 分置在 R File
3. 置於 Shiny Server 的 srv 目錄



R Shiny 架構

1. ui & server 為同一個檔案用函數方式進行

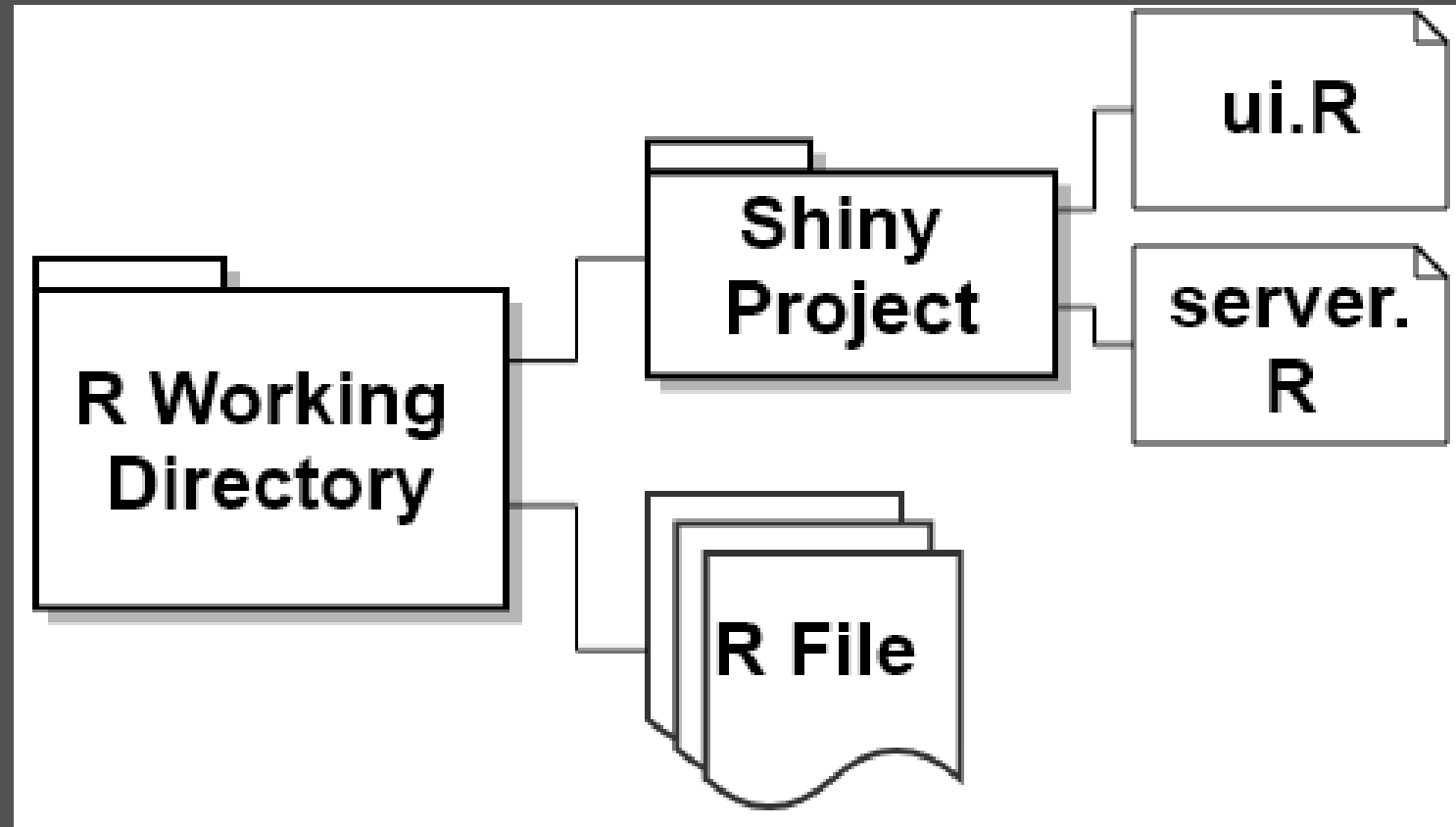
```
ui = shinyUI(fluidPage(  
  ...  
))  
  
server = function(input, output) {  
  ...  
}  
  
shinyApp( ui = ui, server = server)
```

```
ui = shinyUI(fluidPage(  
  ...  
))  
  
server = function(input, output) {  
  ...  
}  
  
shinyApp( ui = ui, server = server)
```

R Shiny 架構

2. 將原先的 ui & server Function 分置在 R File

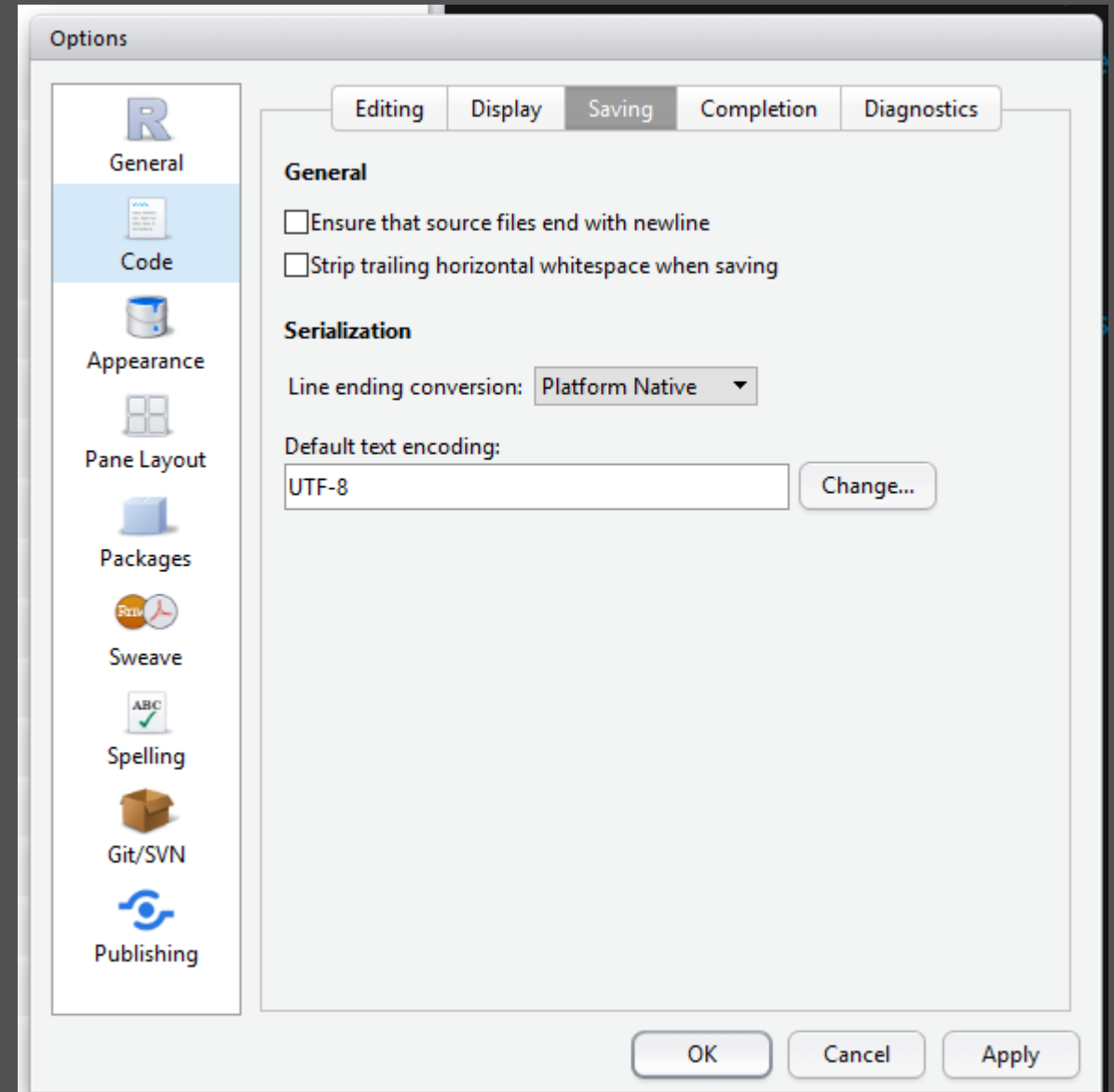
```
setwd("[指定目錄]")  
getwd()  
library(shiny)  
runApp("[Shiny 專案的目錄名稱]")
```



R Shiny 架構

3. 置於 Shiny Server 的 srv 目錄

這裡要注意的一件事情，如果是 Windows 與 Linux 一起使用的開發者，要注意這兩者的編碼問題，Windows 的編碼是 Big5，Linux 為 UTF-8，如果習慣在 Windows 上進行編寫，到了完成才會正式放上 Linux 環境的 R Shiny Server 的人，建議用 RStudio IDE 工具將預設編碼一開始就設為 UTF-8。



R Shiny Hello, World!

server.R (後端)

使用 iris 與 ggplot2 套件下的 diamonds 資料。

C05 - haoyehowld

```
server.R - 記事本
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)

library(shiny)
library(ggplot2)

function(input, output) {

  datasetInput <- reactive({
    switch(input$dataset,
          "iris" = iris,
          "dimd" = diamonds)
  })

  output$summary <- renderPrint({
    dataset = datasetInput()
    summary(dataset)
  })

  # Show the first "n" observations
  output$view <- renderTable({
    head(datasetInput(), n = input$obs)
  })
}
```

R Shiny Hello, World!

ui.R (前端)

```
ui.r - 記事本
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)

library(shiny)
library(ggplot2)

fluidPage(

  titlePanel("Haoye - Hello, World!"),

  sidebarLayout(
    sidebarPanel(
      selectInput("dataset", "Choose a dataset:",
        choices = c("iris", "dimd")),

      numericInput("obs", "Number of observations to view:", 10),

      helpText("Note: Haoye test"),

      submitButton("Update View")
    ),

    mainPanel(
      h4("Summary"),
      verbatimTextOutput("summary"),

      h4("Observations"),
      tableOutput("view")
    )
  )
)
```

R Shiny Hello, World!

可以檢視 iris 的資料與欄位

RStudio Console Output:

```
R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

Attaching package: 'lubridate'

The following object is masked from 'package:base':

  date

data.table 1.9.6 For help type ?data.table
The fastest way to learn (by data.table-way) is to read the
data.table vignettes.

Attaching package: 'data.table'

The following objects are masked from 'package:base':

  dcast, melt

The following objects are masked from 'package:stats':

  hour, mday, month, quarter, wday

> set.seed(929)
> setwd("C:/rshinyws")
> getwd()
[1] "C:/rshinyws"
> library(shiny)
> runApp("haoyehowld")

Listening on http://127.0.0.1:6901
```

Shiny Application Interface: Haoye - Hello, World!

Choose a dataset: iris

Number of observations to view: 12

Note: Haoye test

Update View

Summary

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
Min. :4.300	Min. :2.000	Min. :1.000	Min. :0.100	setosa :50
1st Qu.:5.100	1st Qu.:2.800	1st Qu.:1.600	1st Qu.:0.300	versicolor:50
Median :5.800	Median :3.000	Median :4.350	Median :1.300	virginica :50
Mean :5.843	Mean :3.057	Mean :3.758	Mean :1.199	
3rd Qu.:6.400	3rd Qu.:3.300	3rd Qu.:5.100	3rd Qu.:1.800	
Max. :7.900	Max. :4.400	Max. :6.900	Max. :2.500	

Observations

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.10	3.50	1.40	0.20	setosa
4.90	3.00	1.40	0.20	setosa
4.70	3.20	1.30	0.20	setosa
4.60	3.10	1.50	0.20	setosa
5.00	3.60	1.40	0.20	setosa
5.40	3.90	1.70	0.40	setosa
4.60	3.40	1.40	0.30	setosa
5.00	3.40	1.50	0.20	setosa
4.40	2.90	1.40	0.20	setosa
4.90	3.10	1.50	0.10	setosa
5.40	3.70	1.50	0.20	setosa
4.80	3.40	1.60	0.20	setosa

R Shiny Hello, World!

切換至 dimd 也能看到 ggplot2
套件下的 diamonds 資料

C:/rshinyws/haoyehowld - Shiny
http://127.0.0.1:6901 Open in Browser Publish

Haoye - Hello, World!

Choose a dataset:

dimd

Number of observations to view:

19

Note: Haoye test

Update View

Summary

carat		cut	color		clarity		depth		table	
Min.	:0.2000	Fair	: 1610	D: 6775	SI1	:13065	Min.	:43.00	Min.	:43.00
1st Qu.	:0.4000	Good	: 4906	E: 9797	VS2	:12258	1st Qu.	:61.00	1st Qu.	:56.00
Median	:0.7000	Very Good	:12082	F: 9542	SI2	: 9194	Median	:61.80	Median	:57.00
Mean	:0.7979	Premium	:13791	G:11292	VS1	: 8171	Mean	:61.75	Mean	:57.46
3rd Qu.	:1.0400	Ideal	:21551	H: 8304	VVS2	: 5066	3rd Qu.	:62.50	3rd Qu.	:59.00
Max.	:5.0100			I: 5422	VVS1	: 3655	Max.	:79.00	Max.	:95.00
				J: 2808	(Other)	: 2531				

price	x	y	z
Min. : 326	Min. : 0.000	Min. : 0.000	Min. : 0.000
1st Qu.: 950	1st Qu.: 4.710	1st Qu.: 4.720	1st Qu.: 2.910
Median : 2401	Median : 5.700	Median : 5.710	Median : 3.530
Mean : 3933	Mean : 5.731	Mean : 5.735	Mean : 3.539
3rd Qu.: 5324	3rd Qu.: 6.540	3rd Qu.: 6.540	3rd Qu.: 4.040
Max. :18823	Max. :10.740	Max. :58.900	Max. :31.800

Observations

carat	cut	color	clarity	depth	table	price	x	y	z
0.23	Ideal	E	SI2	61.50	55.00	326	3.95	3.98	2.43
0.21	Premium	E	SI1	59.80	61.00	326	3.89	3.84	2.31
0.23	Good	E	VS1	56.90	65.00	327	4.05	4.07	2.31

R Shiny - reactiveValues

一開始接觸 Shiny 的人，除了建議參考官方給予的範例進行做中學之外，還有一個地方必須注意，在 R 本身處理跟 Shiny 有些地方的處理不太一樣。

例如平常使用 R Function 進行分析，在複雜的工作下，有時候會選擇利用 `assign()` 建立物件賦值，然後把待分析或者暫存的資料塞進去，但是在 R Shiny 的世界中，如果是用這種方式建立物件，並用該物件暫時存放待處理的資料則會有很大的問題，尤其是在 `assign()` 根據其參數 `env = .GlobalEnv` 所建立的物件在 R 的世界中為全域變數，這個東西在 Shiny 運作時非常麻煩，你會看到用這類方式所建立的物件，Shiny 根本無法改變它。

所以這個時候會建議使用 `reactiveValues()` 這個方式進行建立暫存，所建立的物件在使用上會跟 List 類似。

R Shiny - reactiveValues

步驟

1. 假設在 server.R 建立一個名為 tmsp 的 reactiveValues() 物件。
tmsp = reactiveValues()
2. 之後要存放資料則可以用此方式指定
tmsp\$values1 = c(1, 2, 3, 4, 5)
3. 當然也可以放從 ui.R input 進來的資料
tmsp\$values2 = input\$values3
4. 從 server.R 輸出則可以用這種方式
output\$summary = renderPrint({
 summary(tmsp\$values1)
})

```
ui = shinyUI(fluidPage(  
  textInput("values3", "", value = "Text" )  
  ...  
  verbatimTextOutput("summary")  
  ...  
))  
  
server = function(input, output) {  
  ...  
  tmsp = reactiveValues()  
  ...  
  tmsp$values1 = c( 1, 2, 3, 4, 5)  
  ...  
  tmsp$values2 = input$values3  
  ...  
  output$summary = renderPrint({  
    summary(tmsp$values1)  
  })  
}  
  
shinyApp( ui = ui, server = server)
```

R Shiny 股市資料 - quantmod

C05 - smhwr

在此可以輸入公司的縮寫，而縮寫名稱則根據 Yahoo Finance 的別名。輸入縮寫後則可顯示 2007 - 2017 年間的資料。

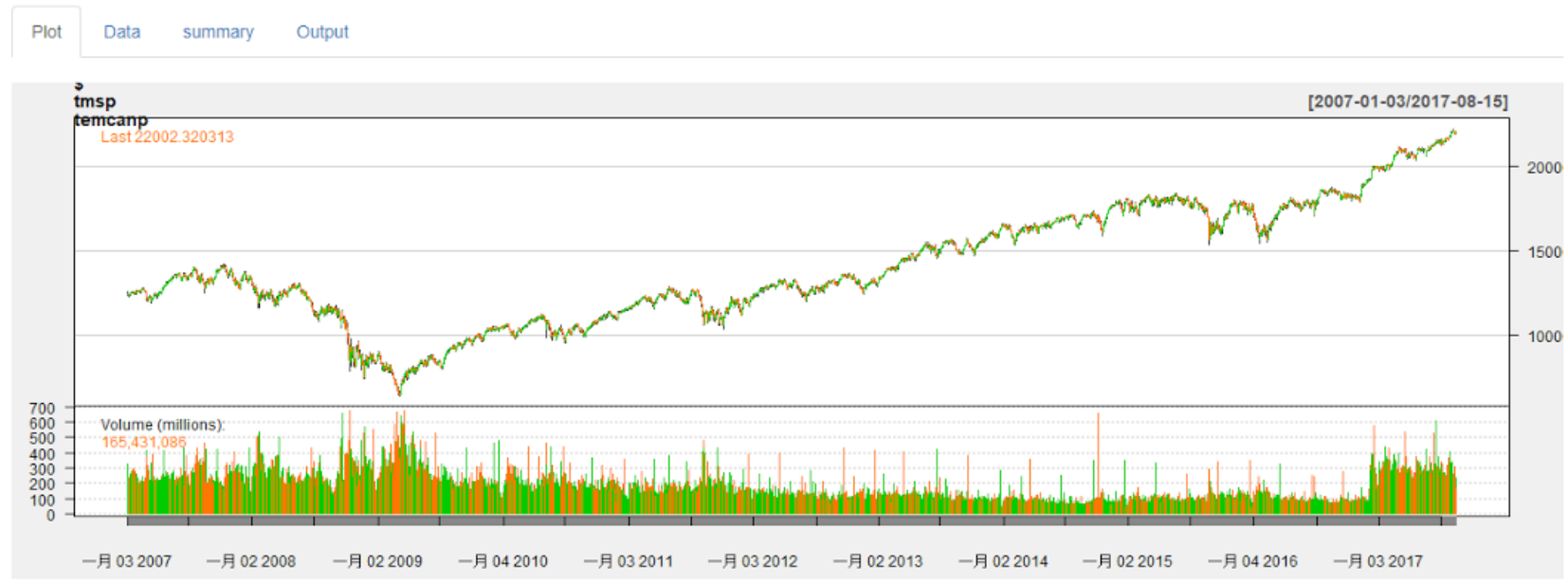
Hello, World! - Stock Market

Enter an abbreviation for name

The default is Dow Jones Industrial

ex : Dow Jones Industrial (^DJI), TSMC (2330.TW).

Submit



R Shiny 股市資料 - quantmod

C05 - smhwr

Data 頁面則是呈現每筆資料的細節。

Hello, World! - Stock Market

Enter an abbreviation for name

The default is Dow Jones Industrial

ex : Dow Jones Industrial (^DJI), TSMC (2330.TW).

Submit

PlotDatasummaryOutput

Show 25 entries

Search:

	DJI.Open	DJI.High	DJI.Low	DJI.Close	DJI.Volume	DJI.Adjusted
2007-01-03	12459.54	12580.35	12404.82	12474.519531	327200000	12474.519531
2007-01-04	12473.16	12510.41	12403.86	12480.69043	259060000	12480.69043
2007-01-05	12480.05	12480.13	12365.41	12398.009766	235220000	12398.009766
2007-01-08	12392.01	12445.92	12337.37	12423.490234	223500000	12423.490234
2007-01-09	12424.77	12466.43	12369.17	12416.599609	225190000	12416.599609
2007-01-10	12417	12451.61	12355.63	12442.160156	226570000	12442.160156
2007-01-11	12442.96	12544.46	12442.96	12514.980469	261720000	12514.980469
2007-01-12	12514.66	12561.04	12489.66	12556.080078	256530000	12556.080078
2007-01-16	12555.84	12585.08	12538.93	12582.589844	242720000	12582.589844
2007-01-17	12571.46	12614	12550.55	12577.150391	272720000	12577.150391
2007-01-18	12575.06	12611.91	12547.34	12567.929688	250690000	12567.929688
2007-01-19	12567.93	12586.84	12523.55	12565.530273	287480000	12565.530273
2007-01-22	12565.53	12572.58	12450.89	12477.160156	293400000	12477.160156
2007-01-23	12477.81	12554.23	12468.35	12533.799805	236760000	12533.799805
2007-01-24	12534.37	12623.45	12531.08	12621.769531	216920000	12621.769531
2007-01-25	12621.77	12622.65	12487.34	12502.55957	275780000	12502.55957
2007-01-26	12503.28	12539.09	12431.34	12487.019531	247020000	12487.019531
2007-01-29	12487.1	12542.7	12481.49	12490.780273	234510000	12490.780273
2007-01-30	12492.23	12538.45	12459.46	12523.30957	244040000	12523.30957
2007-01-31	12520.03	12657.02	12505.2	12621.69043	258410000	12621.69043
2007-02-01	12617.2	12682.57	12616.08	12673.679688	235130000	12673.679688

R Shiny 股市資料 - quantmod

C05 - smhwR


進行單純的敘述統計。

Hello, World! - Stock Market

Enter an abbreviation for name

The default is Dow Jones Industrial

ex : Dow Jones Industrial (^DJI), TSMC (2330.TW).

 Submit

Plot

Data

summary

Output

DJI.Open	DJI.High	DJI.Low	DJI.Close	DJI.Volume	DJI.Adjusted
Min. : 6547	Min. : 6710	Min. : 6470	Min. : 6547	Min. : 8410000	Min. : 6547
1st Qu.:11535	1st Qu.:11625	1st Qu.:11443	1st Qu.:11540	1st Qu.:104622500	1st Qu.:11540
Median :13254	Median :13322	Median :13193	Median :13259	Median :158070000	Median :13259
Mean :14041	Mean :14121	Mean :13958	Mean :14045	Mean :182816324	Mean :14045
3rd Qu.:16984	3rd Qu.:17061	3rd Qu.:16915	3rd Qu.:16987	3rd Qu.:236987500	3rd Qu.:16987
Max. :22100	Max. :22179	Max. :22082	Max. :22118	Max. :674920000	Max. :22118

R Shiny 股市資料 - quantmod

C05 - smhwr

該頁可以匯出 CSV 檔案，預設資料格式編碼則為 UTF-8。

Hello, World! - Stock Market

Enter an abbreviation for name

The default is Dow Jones Industrial

ex : Dow Jones Industrial (^DJI), TSMC (2330.TW).

Submit

Plot

Data

summary

Output

Download

sm_20170816023508.csv - LibreOffice Calc

檔案(F) 編輯(E) 檢視(V) 插入(I) 格式(O) 工作表(S) 資料(D) 工具(T) 視窗(W) 說明(H)

Liberation Sans 10

A1 DJI.Open

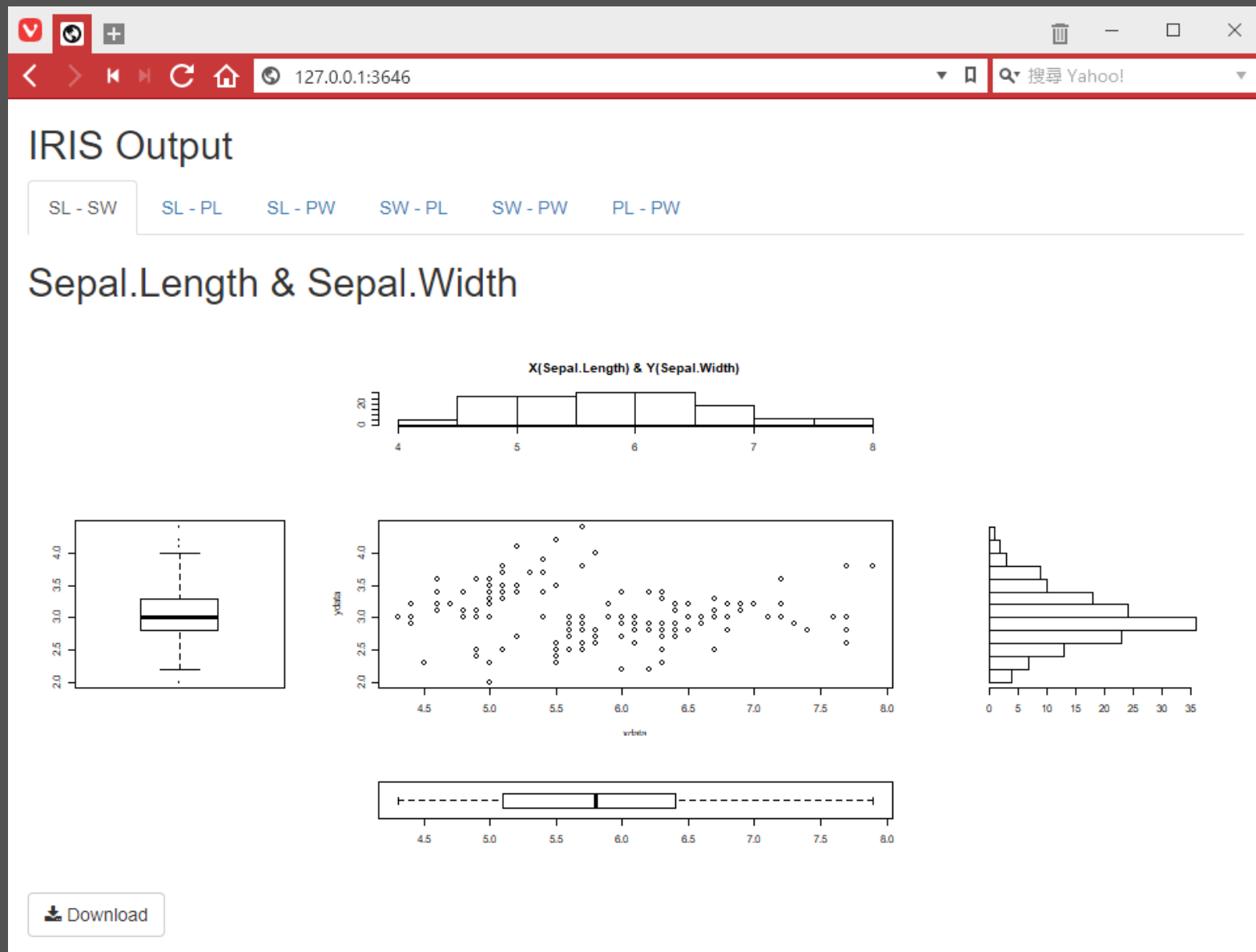
	A	B	C	D	E	F
1	DJI.Open	DJI.High	DJI.Low	DJI.Close	DJI.Volume	DJI.Adjusted
2	12459.54	12580.35	12404.82	12474.519531	327200000	12474.5195
3	12473.16	12510.41	12403.86	12480.69043	259060000	12480.6904
4	12480.05	12480.13	12365.41	12398.009766	235220000	12398.0098
5	12392.01	12445.92	12337.37	12423.490234	223500000	12423.4902
6	12424.77	12466.43	12369.17	12416.599609	225190000	12416.5996
7	12417	12451.61	12355.63	12442.160156	226570000	12442.1602
8	12442.96	12544.46	12442.96	12514.980469	261720000	12514.9805
9	12514.66	12561.04	12489.66	12556.080078	256530000	12556.0801
10	12555.84	12585.08	12538.93	12582.589844	242720000	12582.5898
11	12571.46	12614	12550.55	12577.150391	272720000	12577.1504
12	12575.06	12611.91	12547.34	12567.929688	250690000	12567.9297
13	12567.93	12586.84	12523.55	12565.530273	287480000	12565.5303
14	12565.53	12572.58	12450.89	12477.160156	293400000	12477.1602
15	12477.81	12554.23	12468.35	12533.799805	236760000	12533.7998
16	12534.37	12623.45	12531.08	12621.769531	216920000	12621.7695
17	12621.77	12622.65	12487.34	12502.55957	275780000	12502.5596

工作表 1 / 1 | 預設 | 平均: ; 小計: 0 | 140%

R Shiny 視覺化匯出 PNG

C05 - dplot

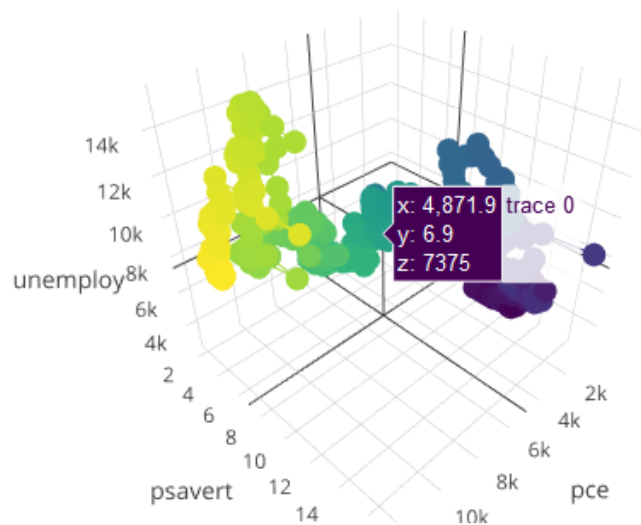
該頁可以匯出 PNG 檔案。



R Shiny 視覺化 - plotly

C05 – plotly.R

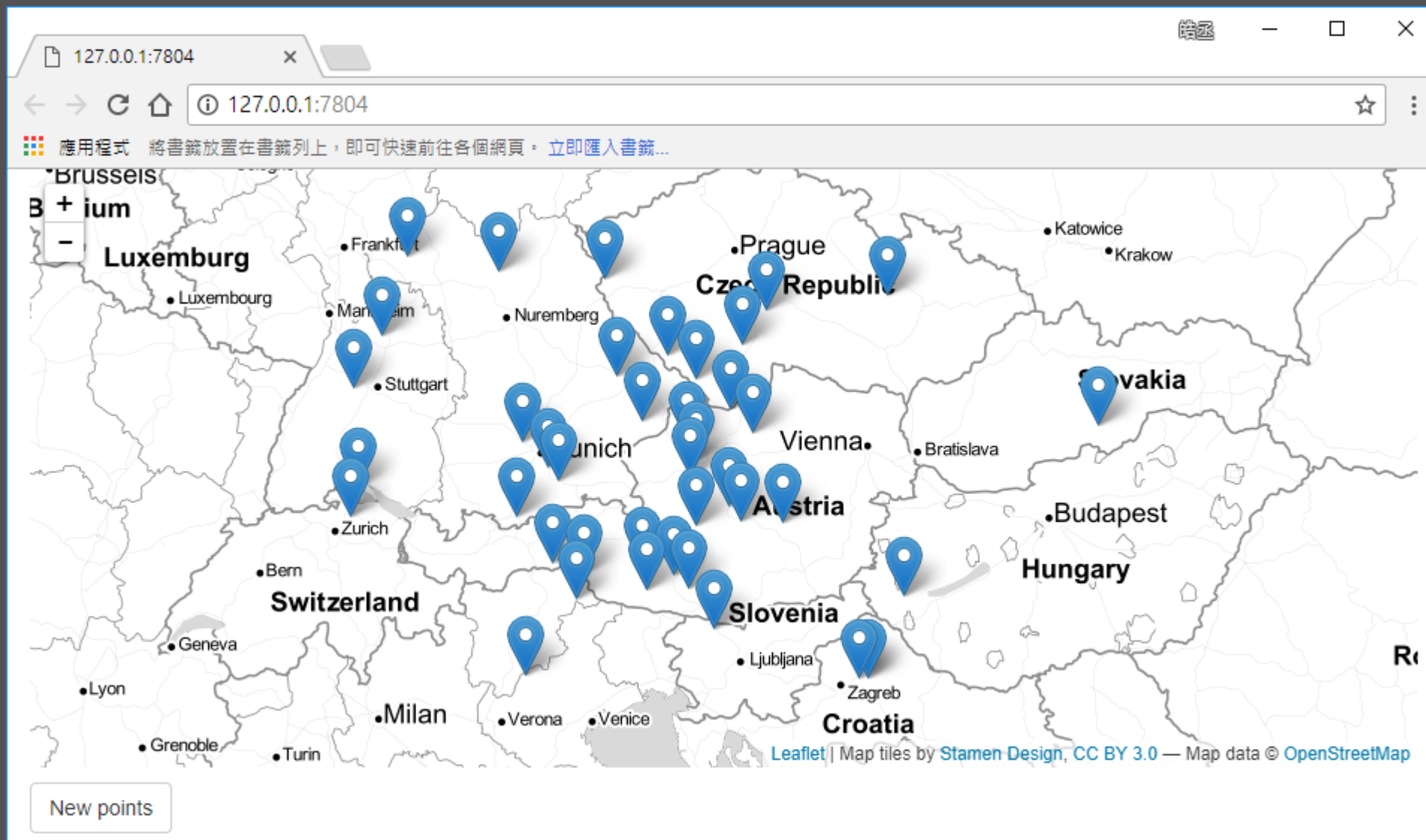
動態視覺化



R Shiny地圖視覺化 - leaflet

C05 - leaflet.R

地圖視覺化



R Shiny Server 架設流程

C05 – RSSer

23

Welcome to Shiny Server!X

← → ↻ 192.168.11.22:3838

Welcome to Shiny Server!

If you're seeing this page, that means Shiny Server is installed and running. **Congratulations!**

What's Next?

Now you're ready to setup Shiny — if you haven't already — and start deploying your Shiny applications.

If you see a Shiny application running on the right side of this page, then Shiny is configured properly on your server and already running an example. Bravo! You can see this application on your server at </sample-apps/hello/>.

If you see a gray box or an error message, then there's a bit more work to do to get Shiny running fully. You can continue with [the installation instructions](#) or use [the Admin Guide](#) for more information. If you're seeing an error message in the panel to the right, you can use it to help diagnose what may be wrong. If you think Shiny is installed and setup properly and things still aren't working, you can look in the Shiny Server log which may have more information about what's wrong. By default, the log is stored in `/var/log/shiny-server.log`.

If you're really stuck *and you've read the relevant sections in the Admin Guide* then please ask for help on [the mailing list](#).

rmarkdown

It's Alive!

Number of bins:

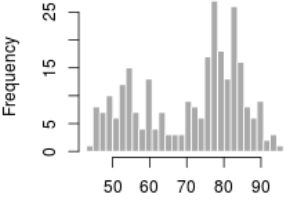
1

30

50

1 6 11 16 21 26 31 36 41 46 50

Histogram of x



When Shiny is properly configured on your server, you'll see a Shiny app above.

An error has occurred

The application failed to start.

The application exited during initialization.