---

title: "Demo"

author: "Steven.Hsiao"

date: "2017年9月13日"

output: html\_document

---

```{r setup, include=FALSE}

knitr::opts\_chunk$set(echo = TRUE)

```

# 課程名稱

這堂課程是\*R語言\*與資料科學應用。

## Code Chunks

在R語言中撰寫Hello world的方法是`print("Hello world")`

```python

import numpy as np

arr = np.linespace(1, 10, 10)

print(arr)

```

```{R}

summary(iris)

```

```{R echo = FALSE}

summary(iris)

```

## Favorite Foods

- 垃圾食物

- 肯德基

- 非垃圾食物

- 無

1. 第一點

2. 第二點

### 跑步鞋簡介

我喜歡穿NIKE的\*\*跑步鞋\*\*:

Demo

*Steven.Hsiao*

*2017年9月13日*

課程名稱

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Code Chunks

在R語言中撰寫Hello world的方法是print("Hello world")

**import** numpy **as** np

arr = np.linespace(1, 10, 10)

**print**(arr)

summary(iris)

## Sepal.Length Sepal.Width Petal.Length Petal.Width

## Min. :4.300 Min. :2.000 Min. :1.000 Min. :0.100

## 1st Qu.:5.100 1st Qu.:2.800 1st Qu.:1.600 1st Qu.:0.300

## Median :5.800 Median :3.000 Median :4.350 Median :1.300

## 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

## Species

## setosa :50

## versicolor:50

## virginica :50

##

##

##

## Sepal.Length Sepal.Width Petal.Length Petal.Width

## Min. :4.300 Min. :2.000 Min. :1.000 Min. :0.100

## 1st Qu.:5.100 1st Qu.:2.800 1st Qu.:1.600 1st Qu.:0.300

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## Species

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## virginica :50

##

##

##

Favorite Foods

* 垃圾食物
  + 肯德基
* 非垃圾食物
  + 無

1. 第一點
2. 第二點

跑步鞋簡介

我喜歡穿NIKE的**跑步鞋**

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```{r setup, include=FALSE}

knitr::opts\_chunk$set(echo = TRUE)

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# 課程名稱

這堂課程是\*R語言\*與資料科學應用。

## 連結

[輕鬆學習R語言](http://www.books.com.tw/products/0010763975)

## 圖片(可用絕對路徑和相對路徑)

![](http://www.gotop.com.tw/waweb2004/WawebImages/BookLL/AEL018500.jpg)

![](R\_logo.svg.png)

### echo = FALSE用來隱藏程式碼

```{r out.width="100px", echo = FALSE}

knitr::include\_graphics("http://www.gotop.com.tw/waweb2004/WawebImages/BookLL/AEL018500.jpg")

```

## Code Chunks

在R語言中撰寫Hello world的方法是`print("Hello world")`

```python

import numpy as np

arr = np.linespace(1, 10, 10)

print(arr)

``

```{r message=FALSE}

library(ggplot2)

r\_norm <- data.frame(x = rnorm(10000))

ggplot(r\_norm, aes(x = x)) +

geom\_histogram()

```{R error = TRUE}

as.integer("Hello world")

```

`

```{R warning = FALSE}

as.integer("Hello world")

```

```{R}

as.integer("Hello world")

```

```{R}

summary(iris)

```

```{R results = "asis"}

summary(iris)

```

```{R echo = FALSE}

summary(iris)

```

```{R results = "hide"}

summary(cars)

```

```{r message=FALSE, fig.width = 50, fig.height= 10}

library(ggplot2)

r\_norm <- data.frame(x = rnorm(10000))

ggplot(r\_norm, aes(x = x)) +

geom\_histogram()

```

## Favorite Foods

- 垃圾食物

- 肯德基

- 非垃圾食物

- 無

1. 第一點

2. 第二點

### 跑步鞋簡介

我喜歡穿NIKE的\*\*跑步鞋\*\*

Demo

*Steven.Hsiao*

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課程名稱

這堂課程是*R語言*與資料科學應用。

連結

[輕鬆學習R語言](http://www.books.com.tw/products/0010763975)

圖片(可用絕對路徑和相對路徑)

  ### echo = FALSE用來隱藏程式碼

Code Chunks

在R語言中撰寫Hello world的方法是print("Hello world")

`python import numpy as np arr = np.linespace(1, 10, 10) print(arr)

**library**(ggplot2)

r\_norm <- data.frame(x = rnorm(10000))

ggplot(r\_norm, aes(x = x)) +

geom\_histogram()

as.integer("Hello world")

## Warning: 強制變更過程中產生了 NA

## [1] NA

`

as.integer("Hello world")

## [1] NA

as.integer("Hello world")

## Warning: 強制變更過程中產生了 NA

## [1] NA

summary(iris)

## Sepal.Length Sepal.Width Petal.Length Petal.Width

## Min. :4.300 Min. :2.000 Min. :1.000 Min. :0.100

## 1st Qu.:5.100 1st Qu.:2.800 1st Qu.:1.600 1st Qu.:0.300

## Median :5.800 Median :3.000 Median :4.350 Median :1.300

## 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

## Species

## setosa :50

## versicolor:50

## virginica :50

##

##

##

summary(iris)

Sepal.Length Sepal.Width Petal.Length Petal.Width  
Min. :4.300 Min. :2.000 Min. :1.000 Min. :0.100  
1st Qu.:5.100 1st Qu.:2.800 1st Qu.:1.600 1st Qu.:0.300  
Median :5.800 Median :3.000 Median :4.350 Median :1.300  
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  
Species  
setosa :50  
versicolor:50  
virginica :50

## Sepal.Length Sepal.Width Petal.Length Petal.Width

## Min. :4.300 Min. :2.000 Min. :1.000 Min. :0.100

## 1st Qu.:5.100 1st Qu.:2.800 1st Qu.:1.600 1st Qu.:0.300

## Median :5.800 Median :3.000 Median :4.350 Median :1.300

## 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

## Species

## setosa :50

## versicolor:50

## virginica :50

##

##

##

summary(cars)

**library**(ggplot2)

r\_norm <- data.frame(x = rnorm(10000))

ggplot(r\_norm, aes(x = x)) +

geom\_histogram()

Favorite Foods

* 垃圾食物
  + 肯德基
* 非垃圾食物
  + 無

1. 第一點
2. 第二點

跑步鞋簡介

我喜歡穿NIKE的**跑步鞋**

字型: 搜尋google font

Shiny:

<https://yaojenkuo.shinyapps.io/shiny_doc_demo/>

bookdown: 可以把各RMarkdown編輯成冊

<https://bookdown.org/>

blogdown:

<https://bookdown.org/yihui/blogdown/>

其他參考網頁! <http://yaojenkuo.io/r_programming/ch10#(1)>

# 活用資料框

load(url("https://storage.googleapis.com/r\_rookies/straw\_hat\_df.RData")):

| **name** | | **gender** | **occupation** | | **bounty** | | **age** | **birthday** | | **height** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  |  | |  | |  |  | |  |
| **1** | Monkey D. Luffy | | Male | Captain | | 5.00e+08 | | 19 | 05-05 | | 174 |
| **2** | Roronoa Zoro | | Male | Swordsman | | 3.20e+08 | | 21 | 11-11 | | 181 |
| **3** | Nami | | Female | Navigator | | 6.60e+07 | | 20 | 07-03 | | 170 |
| **4** | Usopp | | Male | Sniper | | 2.00e+08 | | 19 | 04-01 | | 176 |
| **5** | Vinsmoke Sanji | | Male | Cook | | 1.77e+08 | | 21 | 03-02 | | 180 |
| **6** | Tony Tony Chopper | | Male | Doctor | | 1.00e+02 | | 17 | 12-24 | | 90 |
| **7** | Nico Robin | | Female | Archaeologist | | 1.30e+08 | | 30 | 02-06 | | 188 |
| **8** | Franky | | Male | Shipwright | | 9.40e+07 | | 36 | 03-09 | | 240 |
| **9** | Brook | | Male | Musician | | 8.30e+07 | | 90 | 04-03 | | 277 |

str(straw\_hat\_df)

'data.frame': 9 obs. of 7 variables:

$ name : chr "Monkey D. Luffy" "Roronoa Zoro" "Nami" "Usopp" ...

$ gender : Factor w/ 2 levels "Female","Male": 2 2 1 2 2 2 1 2 2

$ occupation: chr "Captain" "Swordsman" "Navigator" "Sniper" ...

$ bounty : num 5.00e+08 3.20e+08 6.60e+07 2.00e+08 1.77e+08 1.00e+02 1.30e+08 9.40e+07 8.30e+07

$ age : num 19 21 20 19 21 17 30 36 90

$ birthday : chr "05-05" "11-11" "07-03" "04-01" ...

$ height : num 174 181 170 176 180 90 188 240 277

新增某欄為生日:

sys\_date <- Sys.Date()

#substr() function

sys\_year <- substr(sys\_date, start = 1, stop = 4)

sys\_year

#strsplit() functions

sys\_year2 <- strsplit(as.character(sys\_date), split = '-')[[1]][1]

sys\_year2

#format() functions

sys\_year3 <- format(sys\_date, "%Y")

sys\_year3

# as.integer() function

sys\_year4 <- as.integer(sys\_year3)

straw\_hat\_df$birth\_year <- sys\_year4 - straw\_hat\_df$age

View(straw\_hat\_df)

| **name** | | **gender** | **occupation** | | **bounty** | | **age** | **birthday** | | **height** | **birth\_year** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  |  | |  | |  |  | |  |  |
| **1** | Monkey D. Luffy | | Male | Captain | | 5.00e+08 | | 19 | 05-05 | | 174 | 1998 |
| **2** | Roronoa Zoro | | Male | Swordsman | | 3.20e+08 | | 21 | 11-11 | | 181 | 1996 |
| **3** | Nami | | Female | Navigator | | 6.60e+07 | | 20 | 07-03 | | 170 | 1997 |
| **4** | Usopp | | Male | Sniper | | 2.00e+08 | | 19 | 04-01 | | 176 | 1998 |
| **5** | Vinsmoke Sanji | | Male | Cook | | 1.77e+08 | | 21 | 03-02 | | 180 | 1996 |
| **6** | Tony Tony Chopper | | Male | Doctor | | 1.00e+02 | | 17 | 12-24 | | 90 | 2000 |
| **7** | Nico Robin | | Female | Archaeologist | | 1.30e+08 | | 30 | 02-06 | | 188 | 1987 |
| **8** | Franky | | Male | Shipwright | | 9.40e+07 | | 36 | 03-09 | | 240 | 1981 |
| **9** | Brook | | Male | Musician | | 8.30e+07 | | 90 | 04-03 | | 277 | 1927 |

* 使用 cbind() 函數新增一個 favorite\_food 的欄位

**load(url("https://storage.googleapis.com/r\_rookies/straw\_hat\_df.RData"))**

**favorite\_food <- c("Meat", "Food matches wine", "Orange", "Fish", "Food matches black tea", "Sweets", "Food matches coffee", "Food matches coke", "Milk")**

**straw\_hat\_df <- cbind(straw\_hat\_df, favorite\_food)**

**View(straw\_hat\_df)**

| **name** | | **gender** | **occupation** | | **bounty** | | **age** | **birthday** | | **height** | **birth\_year** | | **favorite\_food** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  |  | |  | |  |  | |  |  | |  |
| **1** | Monkey D. Luffy | | Male | Captain | | 5.00e+08 | | 19 | 05-05 | | 174 | 1998 | | Meat |
| **2** | Roronoa Zoro | | Male | Swordsman | | 3.20e+08 | | 21 | 11-11 | | 181 | 1996 | | Food matches wine |
| **3** | Nami | | Female | Navigator | | 6.60e+07 | | 20 | 07-03 | | 170 | 1997 | | Orange |
| **4** | Usopp | | Male | Sniper | | 2.00e+08 | | 19 | 04-01 | | 176 | 1998 | | Fish |
| **5** | Vinsmoke Sanji | | Male | Cook | | 1.77e+08 | | 21 | 03-02 | | 180 | 1996 | | Food matches black tea |
| **6** | Tony Tony Chopper | | Male | Doctor | | 1.00e+02 | | 17 | 12-24 | | 90 | 2000 | | Sweets |
| **7** | Nico Robin | | Female | Archaeologist | | 1.30e+08 | | 30 | 02-06 | | 188 | 1987 | | Food matches coffee |
| **8** | Franky | | Male | Shipwright | | 9.40e+07 | | 36 | 03-09 | | 240 | 1981 | | Food matches coke |
| **9** | Brook | | Male | Musician | | 8.30e+07 | | 90 | 04-03 | | 277 | 1927 | | Milk |

\*\*\* ifelse():

> load(url("https://storage.googleapis.com/r\_rookies/straw\_hat\_df.RData"))

> straw\_hat\_df$age

[1] 19 21 20 19 21 17 30 36 90

> ifelse(straw\_hat\_df$age >= 30, "大於30", "未滿30")

[1] "未滿30" "未滿30" "未滿30" "未滿30" "未滿30" "未滿30" "大於30" "大於30" "大於30"

\*\* cut: 切割到那些區間

cut(straw\_hat\_df$age, breaks = c(0, 20, 30, 200))

[1] (0,20] (20,30] (0,20] (0,20] (20,30] (0,20] (20,30] (30,200] (30,200]

Levels: (0,20] (20,30] (30,200]

將上labels:

> cut(straw\_hat\_df$age, breaks = c(0, 20, 30, Inf), labels = c("小於等於20", "超過20 小於等於30", "超過30"))

[1] 小於等於20 超過20 小於等於30 小於等於20 小於等於20 超過20 小於等於30

[6] 小於等於20 超過20 小於等於30 超過30 超過30

Levels: 小於等於20 超過20 小於等於30 超過30