

Interactive Charts DIY

陳 曾 基

臺北榮民總醫院家庭醫學部
臺北榮民總醫院醫學研究部大數據中心

Topics

1. Prologue
2. Features
3. Spreadsheet Charts
4. JavaScript Charts
5. Tools
6. Resources
7. Epilogue

SECTION I

PROLOGUE

The greatest value of a picture is when it forces us to notice what we never expected to see.
(John Tukey)



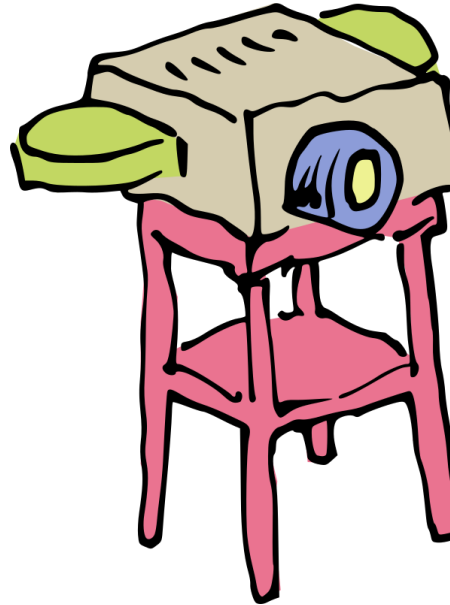
Days Before PowerPoint



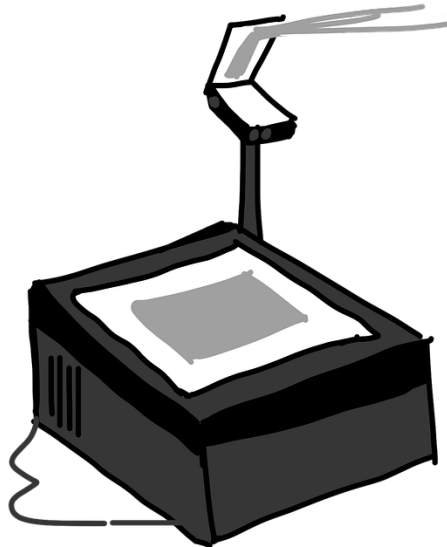
Evolution of Presentations



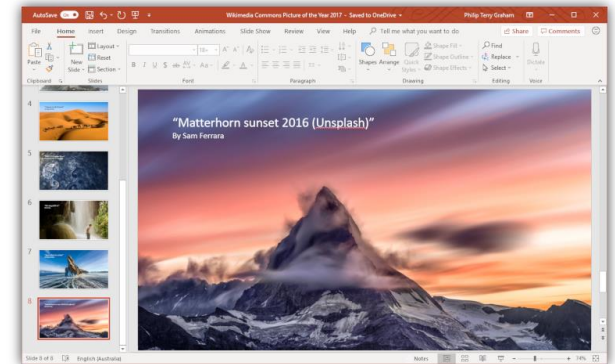
<https://openclipart.org/detail/141925/tabula>



<https://openclipart.org/detail/283660/slideshow>



<https://pixabay.com/illustrations/overhead-projector-projector-mapping-341408/>



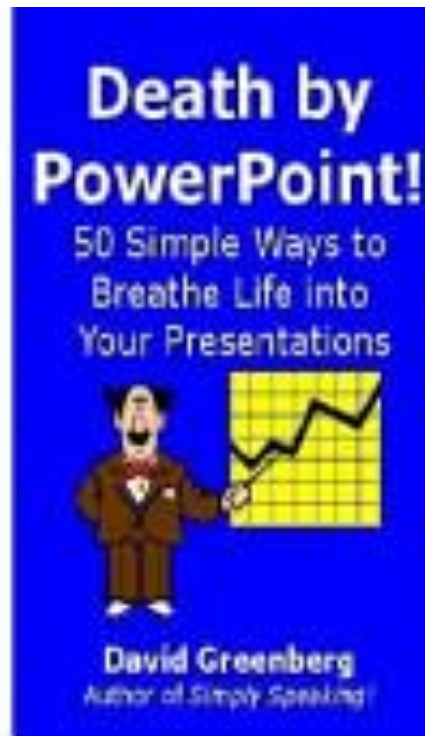
https://en.wikipedia.org/wiki/File:Microsoft_PowerPoint.png

Death by PowerPoint

- The boredom of a dull PowerPoint presentation, normally consisting of **simple bulleted lists** and **conventional graphics**.

夫子自道

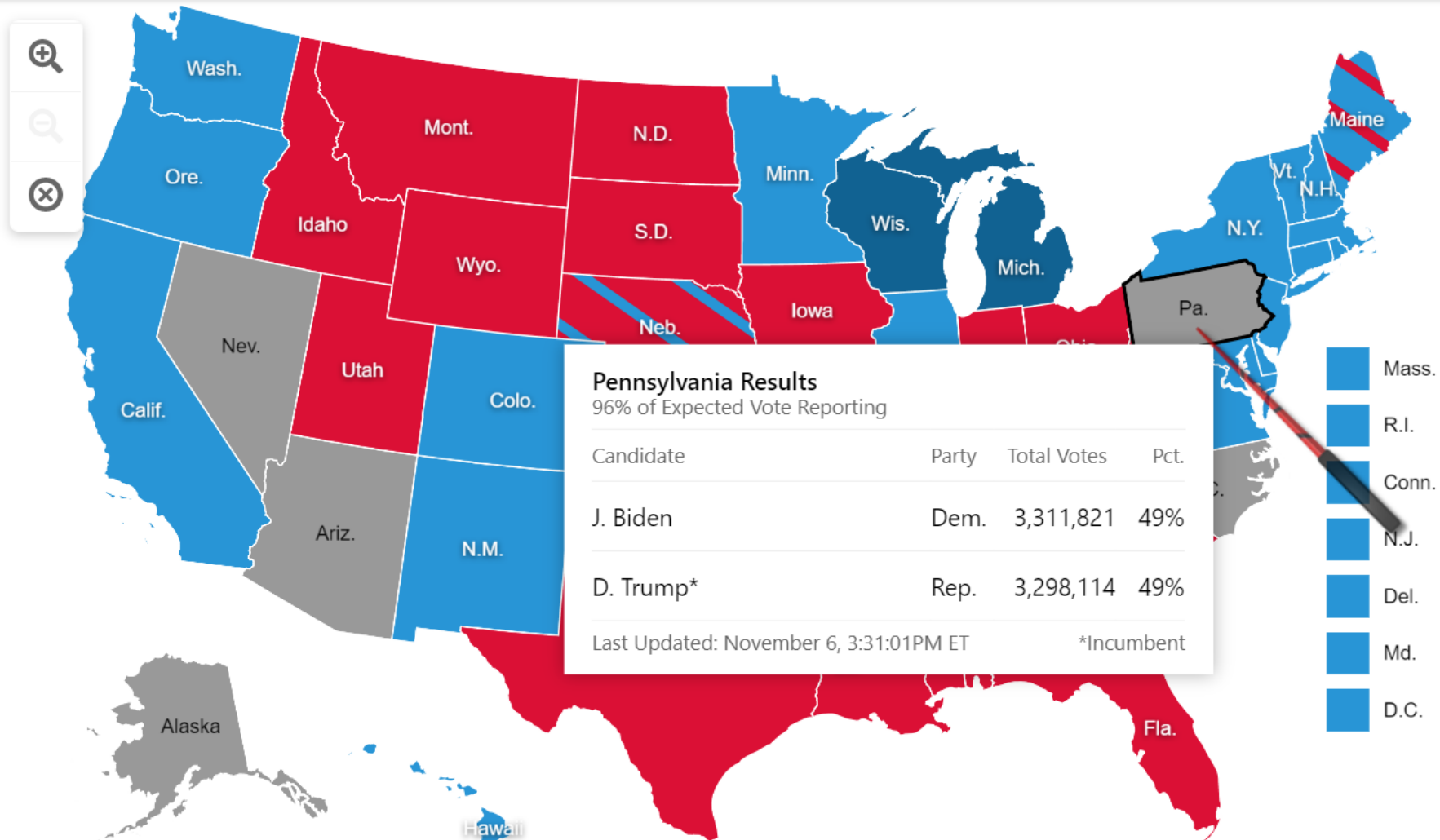
(https://en.wiktionary.org/wiki/death_by_PowerPoint)

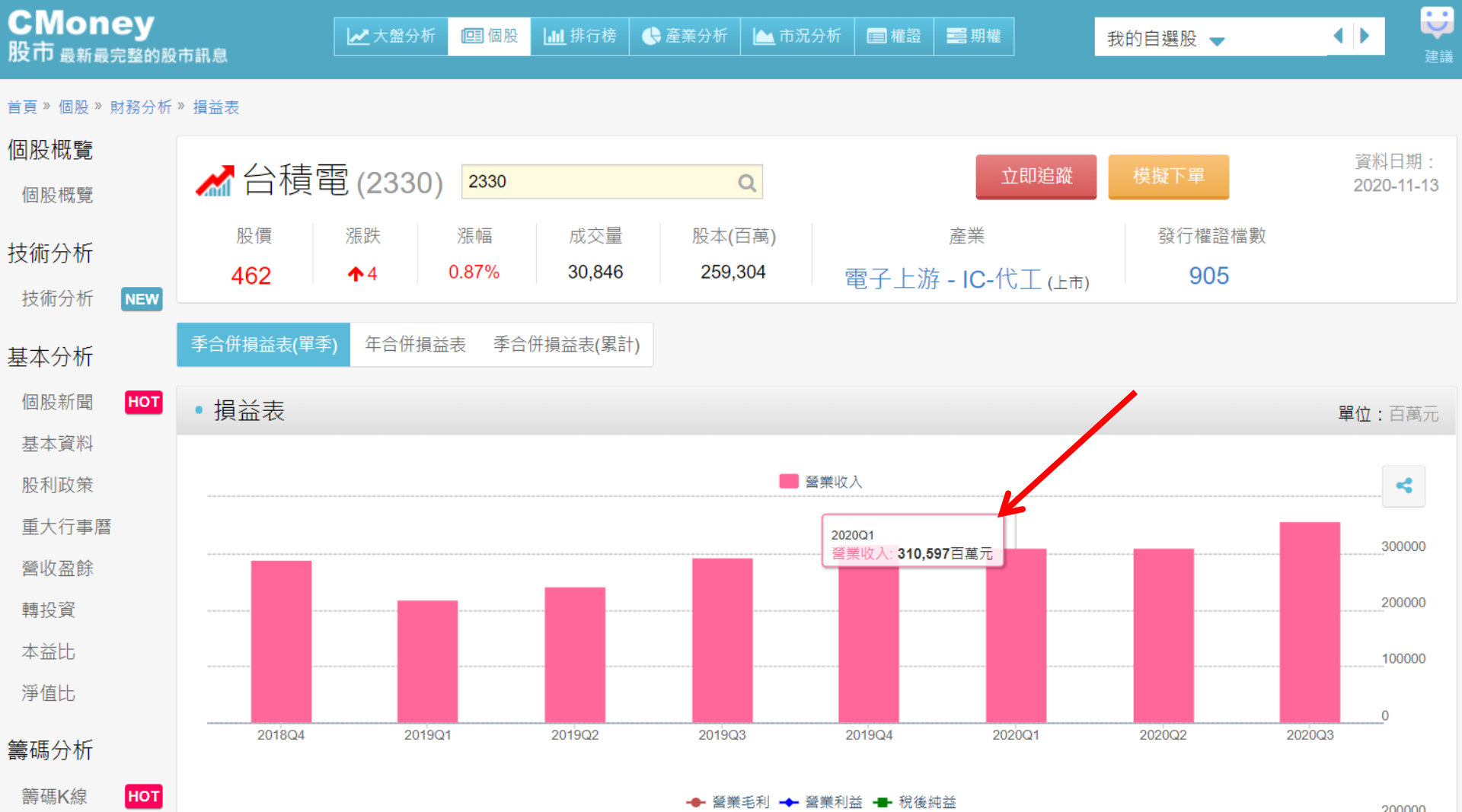


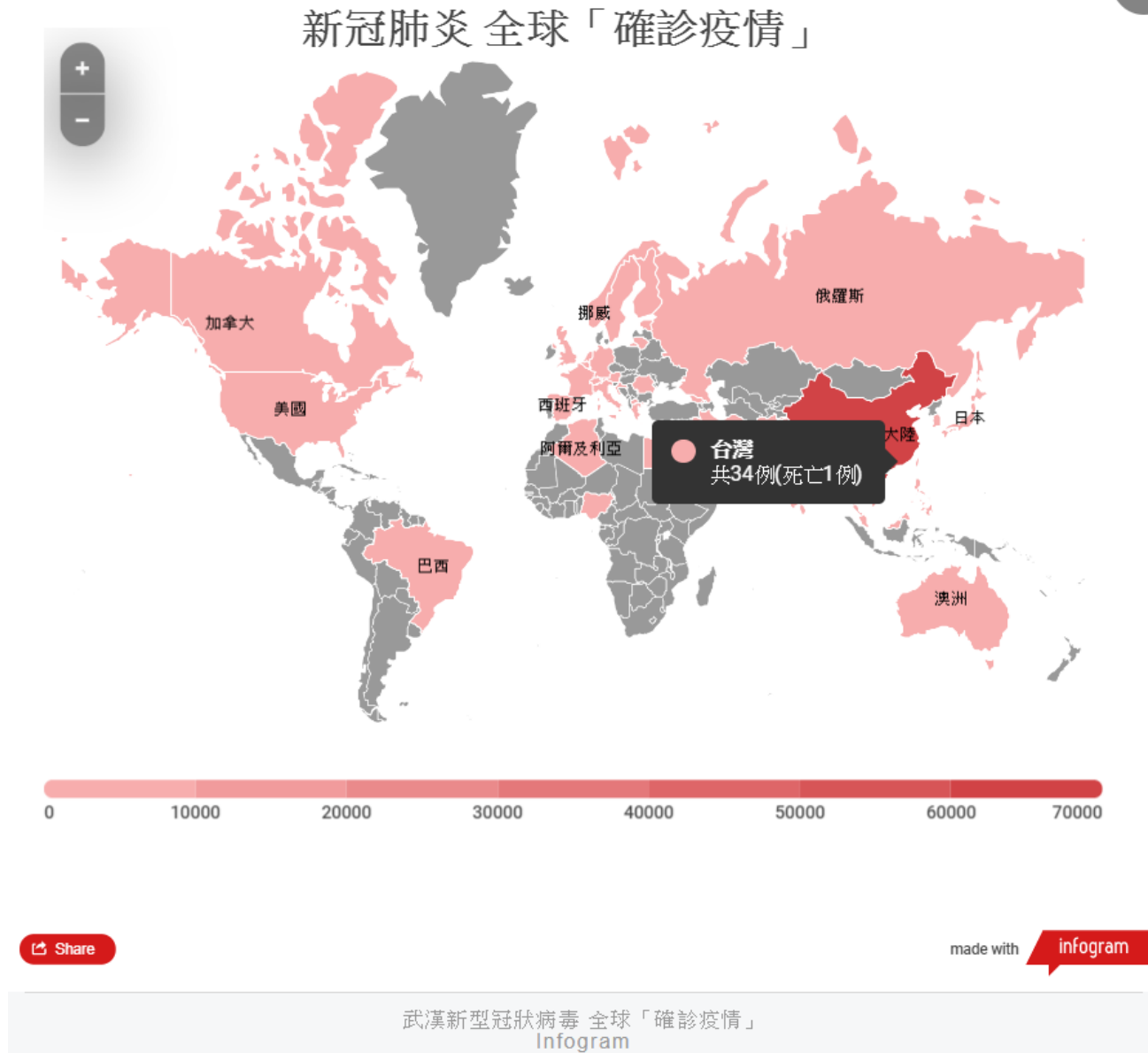
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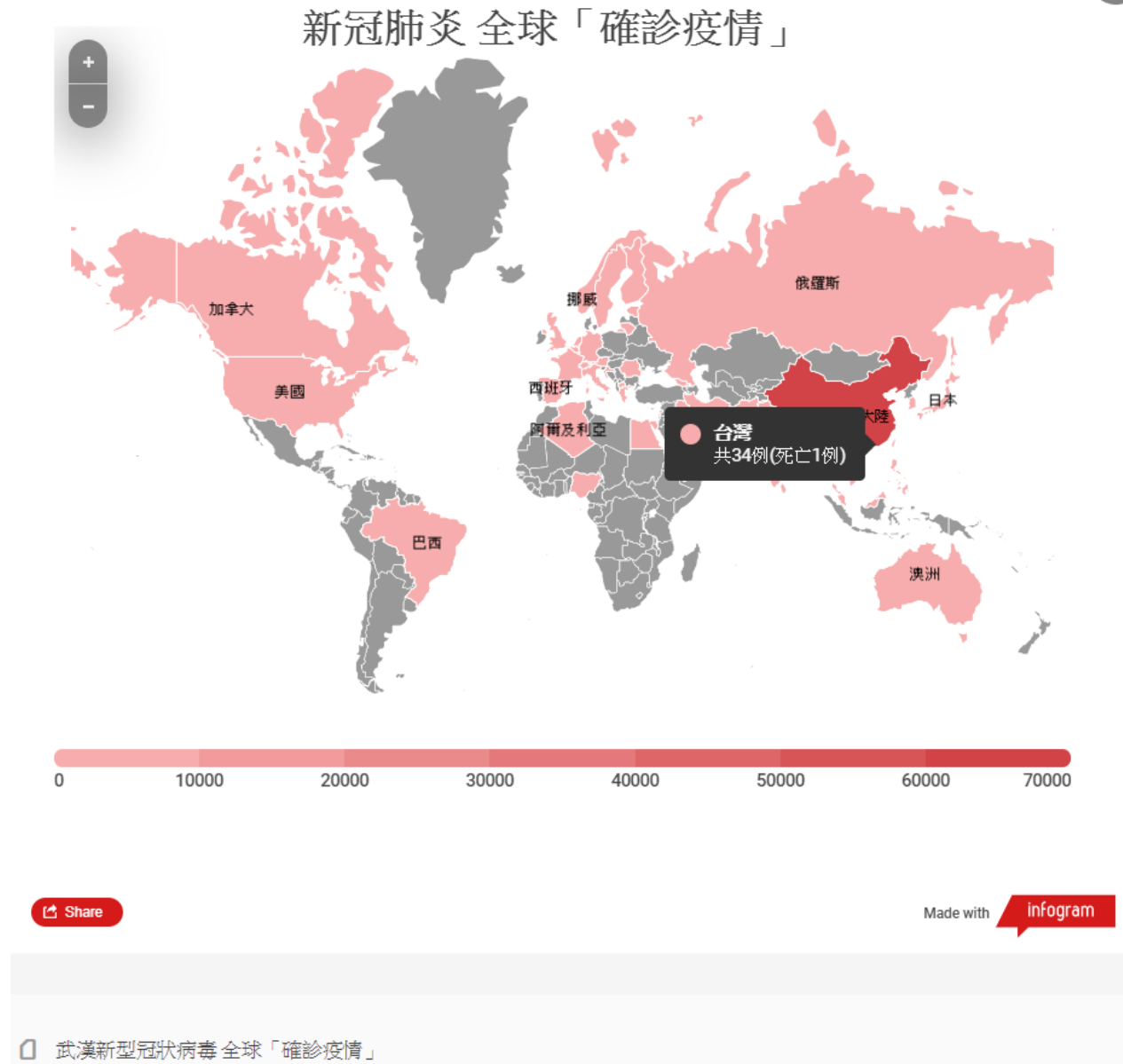
New Trend











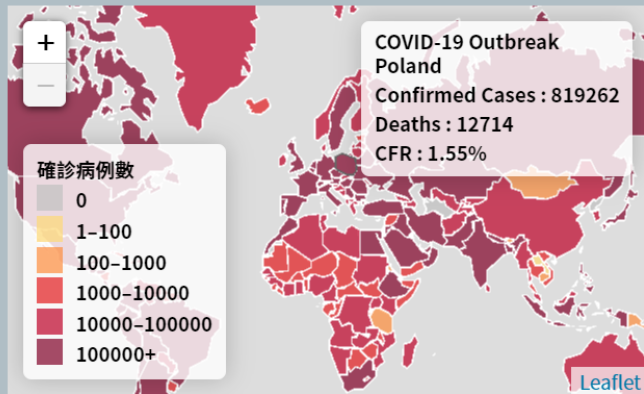


衛生福利部疾病管制署
Taiwan Centers for Disease Control

回首頁 English 網站導覽 RSS

關於CDC 傳染病與防疫專題 預防接種 國際旅遊與健康

COVID-19 (武漢肺炎)



全球確定病例數
57,585,207

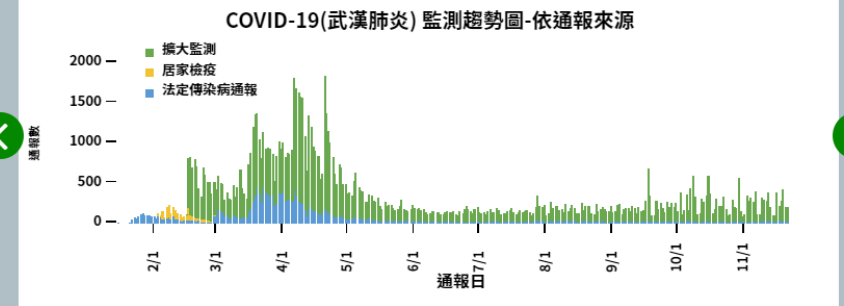
全球死亡病例數
1,373,629

全球致死率
2.39%

國家/地區數
191

更新時間：2020-11-21 09:20

國內通報總計	通報數 107,410	排除 105,876	確診 611	死亡 7	解除隔離 546
昨日新增	通報數 208	排除 270	確診 0	國內檢驗總計	累計件數 242,121



更新時間：2020-11-22 00:30

檢視網頁原始碼

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343 </div>
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<https://sites.google.com/>

<https://docs.google.com/spreadsheets/d/e/2PACX->

1vTBxjBoxo35pqyYj0rmUphalDJFjKXkg9aUiZIMYOKI03_1ViCsil3olyxdGkzEesZK
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範例

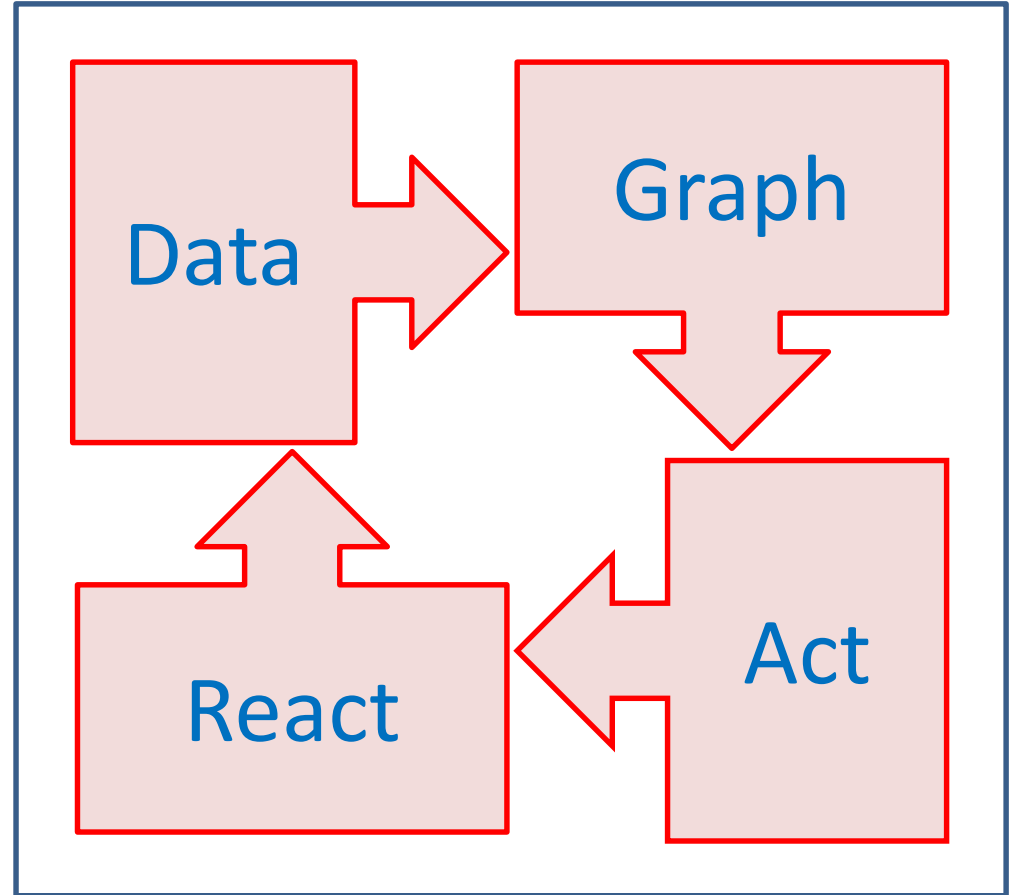
COVID19_source_20201020 : COVID19_source_20201020

Area	Area_en	Source
千里達及托巴哥	Trinidad and Tobago	https://www.facebook.com/MinistryofHealthTT
土耳其	Turkey	https://covid19.saglik.gov.tr/
土庫曼	Turkmenistan	https://covid19.who.int/region/euro/country/tm
不丹	Bhutan	https://www.facebook.com/MoHBhutan/
中非	Central Africa	https://covid19.who.int/region/afro/country/cf
中非	Central Africa	https://twitter.com/MSPCentrafrique
中國大陸	China	http://www.nhc.gov.cn/xcs/xxgzbd/gzbd_index.shtml
中國大陸_上海市	China_Shanghai	http://wsjkw.sh.gov.cn/xwfb/index.html#
中國大陸_上海市	China_Shanghai	https://weibo.com/shanghaicity
中國大陸_山西省	China_Shanxi	http://wjw.shanxi.gov.cn/xxgzbdgr/index.hrh
中國大陸_山東省	China_Shandong	http://wjw.shanxi.gov.cn/wjyw102/index.hrh
中國大陸_內蒙古自治區	China_Inner Mongolia	http://wjw.nmg.gov.cn/xwzx/xwfb/index.shtml
中國大陸_天津市	China_Tianjin	http://wsjk.tj.gov.cn/ZTZL1/ZTZL750/YQFKZL9424/
中國大陸_北京市	China_Beijing	http://wjw.beijing.gov.cn/xwzx_20031/wnxw/
中國大陸_四川省	China_Sichuan	http://wsjkw.sc.gov.cn/scwsjkw/gzbd/fyzt.shtml
中國大陸_甘肅省	China_Gansu	http://wsjk.gansu.gov.cn/channel/10910/index.html
中國大陸_吉林省	China_Jilin	http://wsjkw.jl.gov.cn/xwzx/xwfb/
中國大陸_安徽省	China_Anhui	http://wjw.ah.gov.cn/ztzl/xxgzbdffyqfk/index.html
中國大陸_江西省	China_Jiangxi	http://hc.jiangxi.gov.cn/
中國大陸_江蘇省	China_Jiangsu	http://wjw.jiangsu.gov.cn/
中國大陸_西藏自治區	China_Tibet	http://wjw.xizang.gov.cn/xwzx/wsjkdt/
中國大陸_河北省	China_Hebei	http://wsjkw.hebei.gov.cn/index.do?cid=14&templet=new_list
中國大陸_河南省	China_Henan	http://wsjkw.henan.gov.cn/zt/2020/778686/index.html
中國大陸_青海省	China_Qinghai	https://weibo.com/qinghaiweishi
中國大陸_重慶市	China_Chongqing	http://wsjkw.cq.gov.cn/ztzl_242/qlzhxxgzbdffyqfkqgz/yqtb/

Published by Google Sheets – Report Abuse – Updated automatically every 5 minutes

SECTION II

FEATURES



Not Charts

如何用 Excel 表格畫出一幅潑墨山水畫？

日本爺爺敲鍵盤繪製「Excel山水畫」



- Picture 圖片
- Drawing 圖畫
- Image 圖像
- Graph 圖形
- Diagram 圖示
- + Chart 圖表 統計圖表

* A chart is a graphical representation of **data**, in which the data is represented by **symbols**.
(<https://en.wikipedia.org/wiki/Chart>)

Interactive Data Visualization

- Direct **actions** can be performed on a **graphical plot** to **change elements and links**.

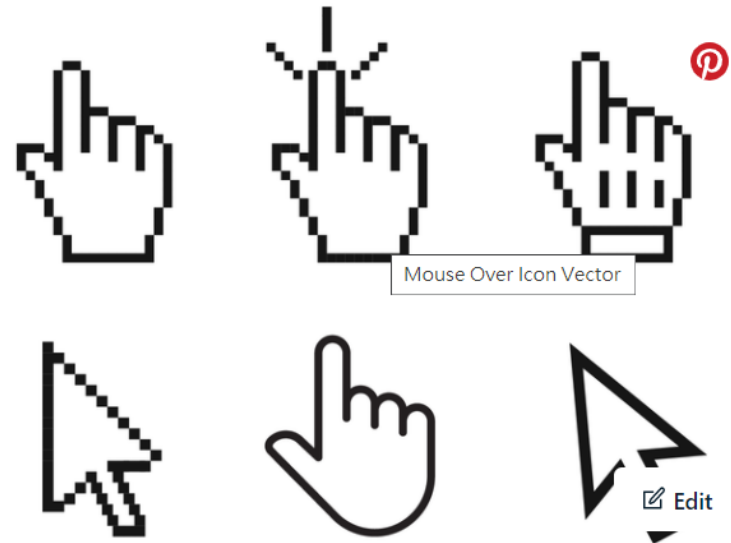
animated $\neq$ interactive

static $\Rightarrow$ dynamic (automatic/stop-go) $\Rightarrow$ interactive

Features of Interactions

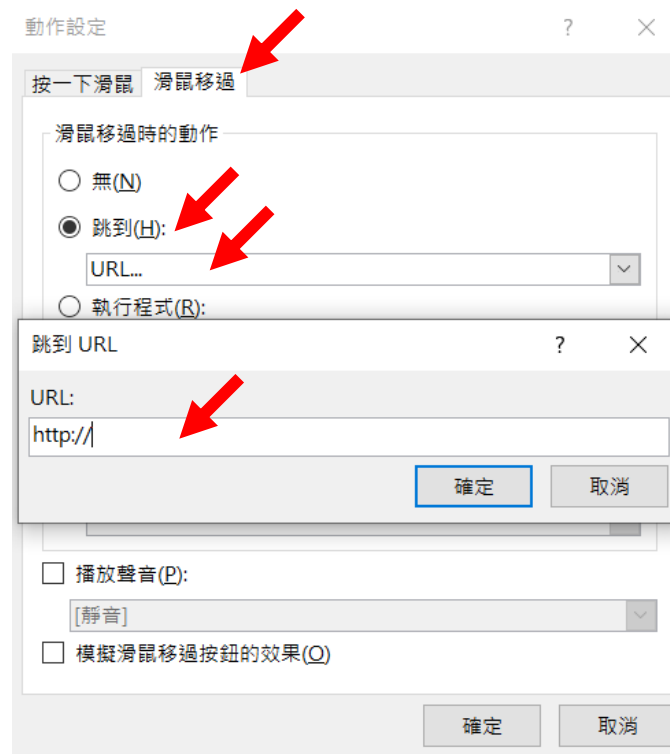
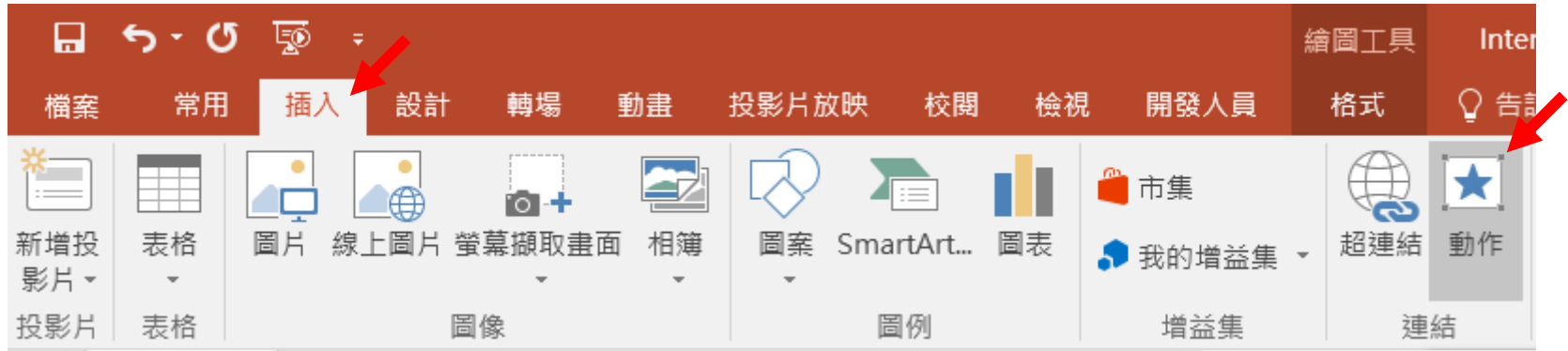
- Identifying
- Brushing
- Filtering
- Scaling
- Linking

MouseOver/Hover Effect



<https://www.vecteezy.com/vector-art/164910-mouse-over-icon-vector>

Hover-Over Effects in PowerPoint



動作

為選取的物件設定當按一下物件或滑鼠移過物件時應執行的動作。

例如，您可以將游標移到物件上，以跳至下一個投影片，或在按一下物件時開啟新的程式。

缺點：

跳離此幻燈片至其他
幻燈片/檔案/網頁
需手動返回至原處

Key Concerns

- Original data : local | on the remote server
- Chart data : local | on the remote server
- Device : browser | other applications
- Programming : freehand | no (but with tools)
- Expense : open-source | free | with fees
- Data freshness : static | dynamic (with frequent updating)

斯斯有三種 免費也是

- Freeware (免費軟體) : most often proprietary
- Free software (自由軟體)
- Free and open-source software
(自由及開放原始碼軟體)

也是養、套、殺！Google相簿將取消免費無上限空間

2020-11-12 08:49 經濟日報 / 編譯葉亭均／綜合外電

<https://udn.com/news/story/7088/5008664>

SECTION III

SPREADSHEET CHARTS

SECTION III-A

MICROSOFT EXCEL

SECTION III-A-1

PIVOTTABLE - PIVOTCHART

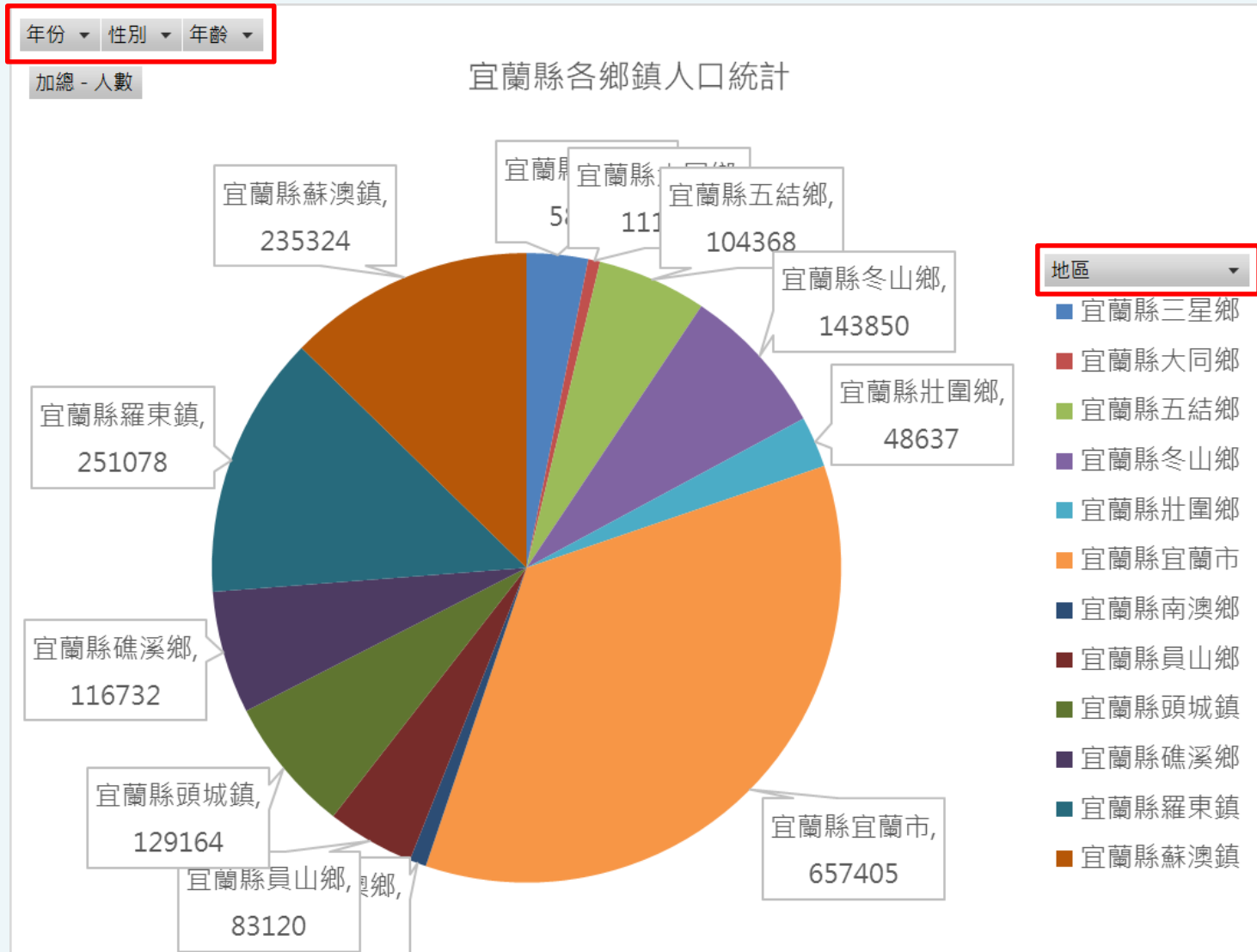
PivotTable - Filter

	A	B	C	D	E	F
1	宜蘭縣各鄉鎮人口統計					
2	年份	2009				
3	性別	(全部)				
4						
5	加總 - 人數	年齡				
6	地區	0-19	20-39	40-59	60-	總計
7	宜蘭縣三星鄉	2887	3193	3332	6251	15663
8	宜蘭縣大同鄉	1006	925	731	362	3024
9	宜蘭縣五結鄉	5269	7939	7435	6997	27640
10	宜蘭縣冬山鄉	7287	10700	9948	9959	37894
11	宜蘭縣壯圍鄉	2312	2978	2634	5013	12937
12	宜蘭縣宜蘭市	36706	42283	56041	29925	164955
13	宜蘭縣南澳鄉	1266	1204	1148	536	4154
14	宜蘭縣員山鄉	4643	5332	4755	7232	21962
15	宜蘭縣頭城鎮	8499	8282	7968	8064	32813
16	宜蘭縣礁溪鄉	6270	8308	7961	8009	30548
17	宜蘭縣羅東鎮	14216	19802	18829	12109	64956
18	宜蘭縣蘇澳鎮	14315	15256	16407	13436	59414
19	總計	104676	126202	137189	107893	475960

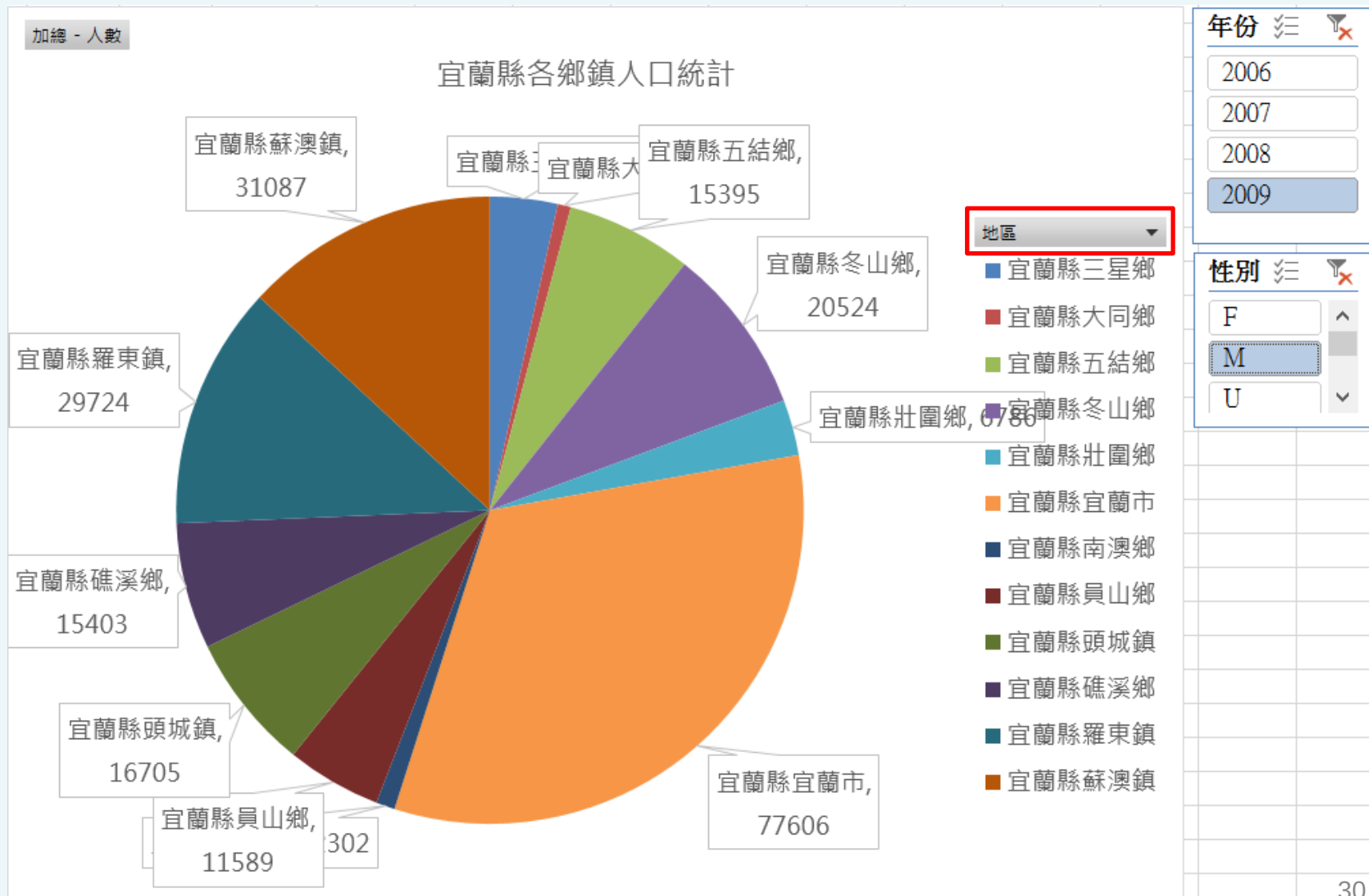
PivotTable - Slicer

	A	B	C	D	E	F	G	H
1	宜蘭縣各鄉鎮人口統計							
2								
3	加總 - 人數	年齡					年份	
4	地區	0-19	20-39	40-59	60-	總計	2006	
5	宜蘭縣三星鄉	1423	1588	1135	2580	6726	2007	
6	宜蘭縣大同鄉	461	429	217	144	1251	2008	
7	宜蘭縣五結鄉	2603	3440	2281	2803	11127	2009	
8	宜蘭縣冬山鄉	3559	4760	3572	4083	15974	性別	
9	宜蘭縣壯圍鄉	1185	1587	923	1898	5593	F	
10	宜蘭縣宜蘭市	18974	22854	30954	14743	87525	M	
11	宜蘭縣南澳鄉	655	511	379	183	1728		
12	宜蘭縣員山鄉	2372	2741	1865	2588	9566		
13	宜蘭縣頭城鎮	4369	4525	3446	3451	15791		
14	宜蘭縣礁溪鄉	3250	4495	3437	3110	14292		
15	宜蘭縣羅東鎮	6964	11239	9615	5271	33089		
16	宜蘭縣蘇澳鎮	7530	8034	6994	5585	28143		
17	總計	53345	66203	64818	46439	230805		

PivotChart - Filter



PivotChart - Slicer

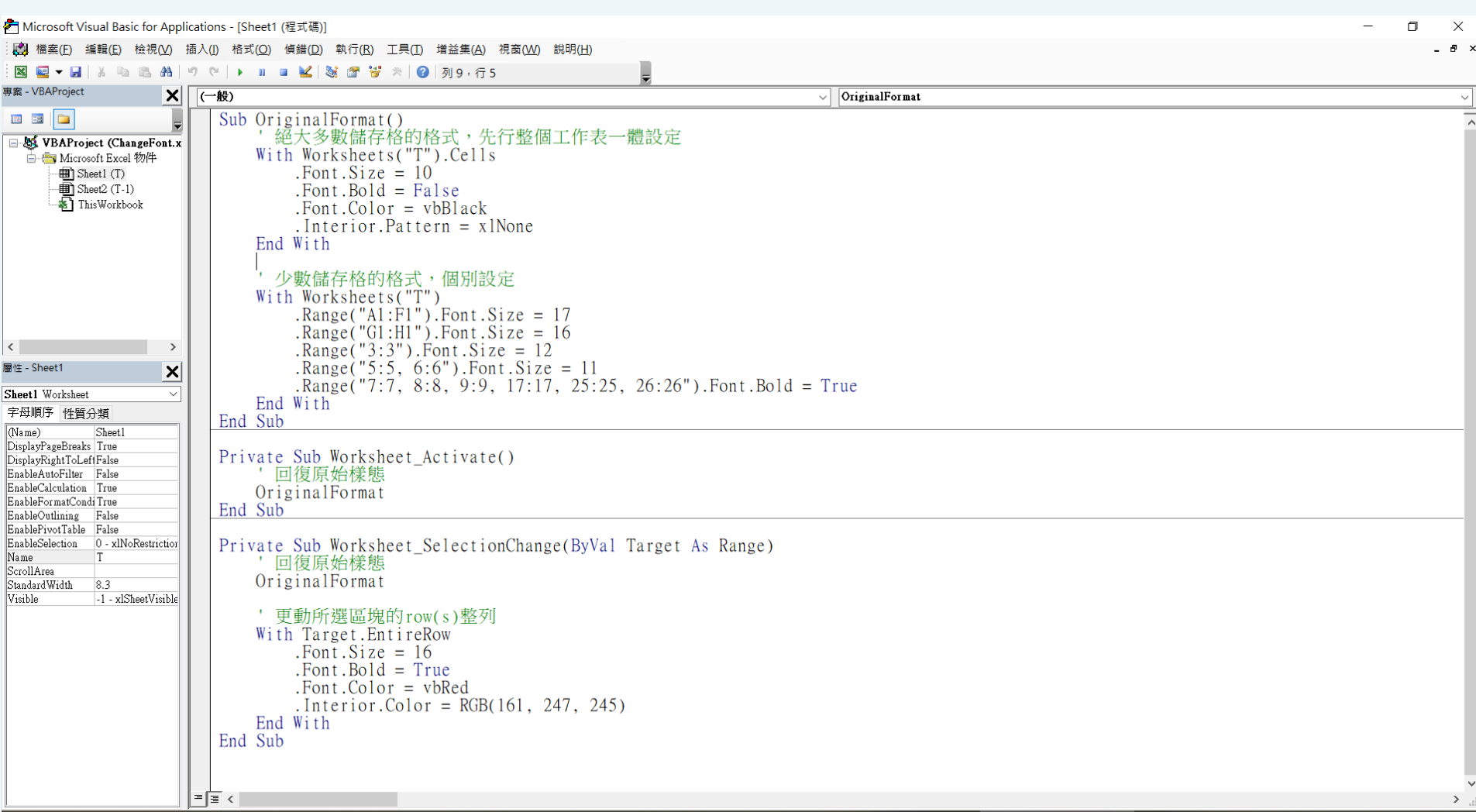


SECTION III-A-2

VBA

A	B	C	D	E	F	G	H
1	表 68 門診醫療費用申報狀況－按權屬別分					Table 68 Outpatient Medical Benefit Claims by Ownership	
2							
3	中華民國102年					2013	
4	單位：千件,百萬點,百萬元						Unit：1,000 Cases, Million Points, Million NT\$
5	權屬別	件 數 Cases	醫療點數 Medical Points	申請點數 Requested Points	部分負擔 Copayment	平均每件醫療點數 (點) Average Medical Points Per Case (Points)	Ownership
6							
7	總 計	351,209	410,119	381,116	29,003	1,168	Grand Total
8	醫院	99,802	219,331	204,132	15,200	2,198	Hospitals
9	公立醫院	29,204	64,866	60,571	4,295	2,221	Public Hospitals
10	衛生福利部所屬醫院及市立醫院	10,504	18,606	17,081	1,524	1,771	Ministry of Health and Welfare (MOHW) Hospital and Municipality Hospitals
11	縣市立醫院	805	1,568	1,458	110	1,947	County & City Hospitals
12	公立醫學院校附設醫院	6,638	18,268	17,181	1,087	2,752	Hospitals Affiliated with Public Medical Schools
13	軍方醫院（民眾診療）	4,003	7,566	6,925	640	1,890	Civilian Clinics of Military Hospitals
14	榮民醫院	6,726	18,171	17,284	887	2,701	Veterans Hospitals (VACRS)
15	機關（構）附設醫院	444	629	590	38	1,417	Hospitals Affiliated with Enterprises
16	公立中醫醫院	83	59	51	8	715	Public Hospitals of Chinese Medicine
17	非公立醫院	70,598	154,465	143,561	10,904	2,188	Non-Public Hospitals
18	醫療社團法人醫院	6,235	12,974	12,091	883	2,081	Medical Care Corporation Hospitals
19	醫療財團法人醫院	34,171	84,597	78,492	6,106	2,476	Non-Profit Proprietary Hospitals
20	宗教財團法人附設醫院	3,203	6,613	6,171	442	2,065	Hospitals Affiliated with Religious Non-Profit Proprietary Organizations
21	私立醫學院校附設醫院	8,558	21,451	19,922	1,528	2,506	Hospitals Affiliated with Private Medical Schools

Microsoft Visual Basic for Applications (within Excel)



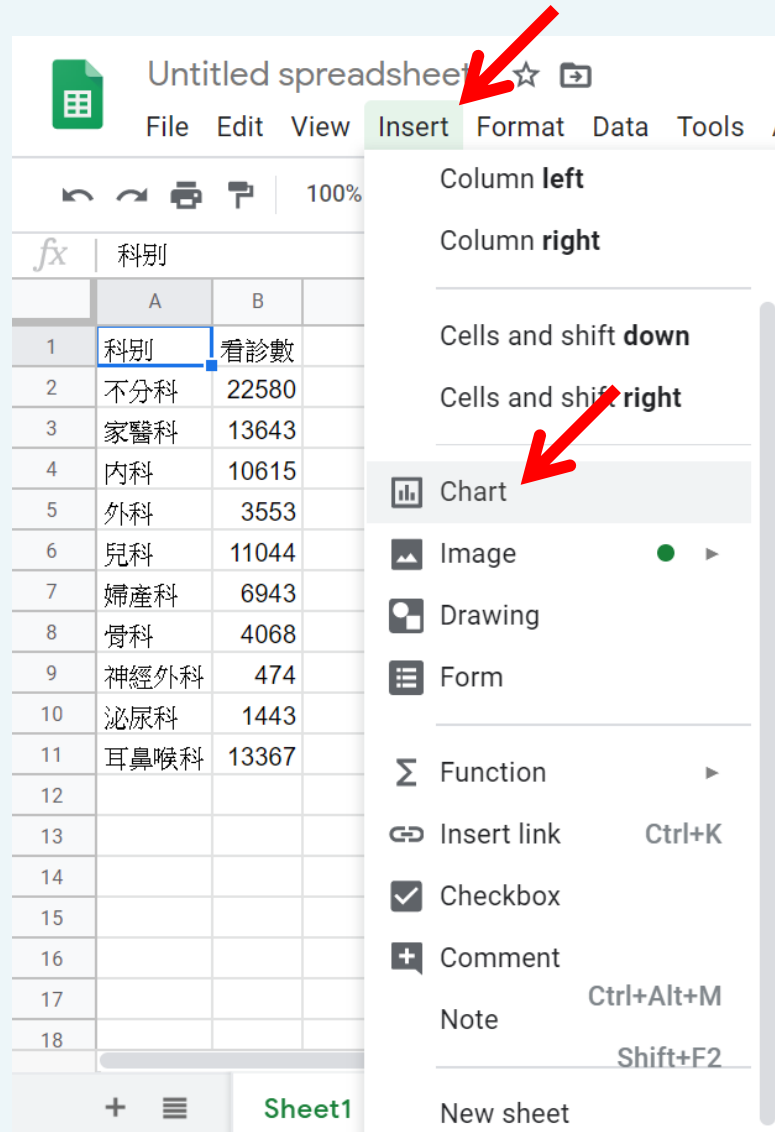
Highlight the row when click any one cell of that row

A	B	C	D	E	F	G	H
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21	私立醫學院校附設醫院	8,558	21,451	19,922	1,528	2,506	Hospitals Affiliated with Private Medical Schools

SECTION III-B

GOOGLE SHEETS

Create Google Charts from Google Sheets





Untitled spreadsheet ☆

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive



Share

TJ

100% \$ % .0 .00 123 Default (Ari... 10 B I S A ...

fx

科別

	A	B	C	D	E	F	G	H	I																																	
1	科別	看診數	看診數 <table><tr><th>科別</th><th>看診數</th><th>百分比</th></tr><tr><td>不分科</td><td>22580</td><td>25.7%</td></tr><tr><td>家醫科</td><td>13643</td><td>15.6%</td></tr><tr><td>內科</td><td>10615</td><td>12.1%</td></tr><tr><td>兒科</td><td>11044</td><td>12.6%</td></tr><tr><td>外科</td><td>3553</td><td>4.0%</td></tr><tr><td>婦產科</td><td>6943</td><td>7.9%</td></tr><tr><td>泌尿科</td><td>1443</td><td>1.6%</td></tr><tr><td>神經外科</td><td>474</td><td>0.5%</td></tr><tr><td>骨科</td><td>4068</td><td>4.6%</td></tr><tr><td>耳鼻喉科</td><td>13367</td><td>15.2%</td></tr></table>							科別	看診數	百分比	不分科	22580	25.7%	家醫科	13643	15.6%	內科	10615	12.1%	兒科	11044	12.6%	外科	3553	4.0%	婦產科	6943	7.9%	泌尿科	1443	1.6%	神經外科	474	0.5%	骨科	4068	4.6%	耳鼻喉科	13367	15.2%
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耳鼻喉科	13367	15.2%																																								
2	不分科	22580																																								
3	家醫科	13643																																								
4	內科	10615																																								
5	外科	3553																																								
6	兒科	11044																																								
7	婦產科	6943																																								
8	骨科	4068																																								
9	神經外科	474																																								
10	泌尿科	1443																																								
11	耳鼻喉科	13367																																								
12																																										
13																																										
14																																										
15																																										
16																																										
17																																										
18																																										



Sheet1



Chart editor



Setup

Customize

A1:B11



Label

Tr 科別



☐ Aggregate

Value

123 看診數



☐ Switch rows / columns

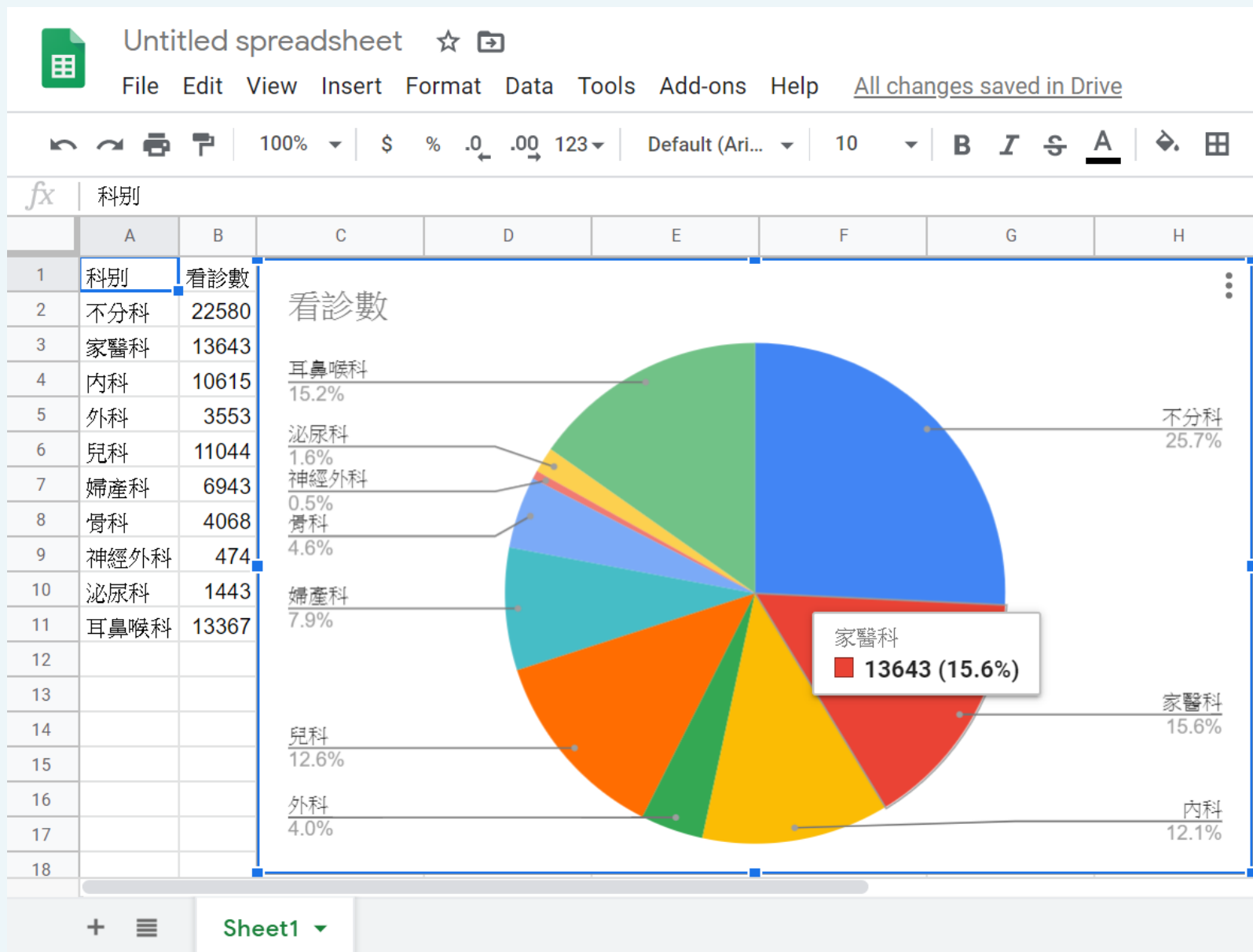
☒ Use row 1 as headers

☒ Use column A as labels

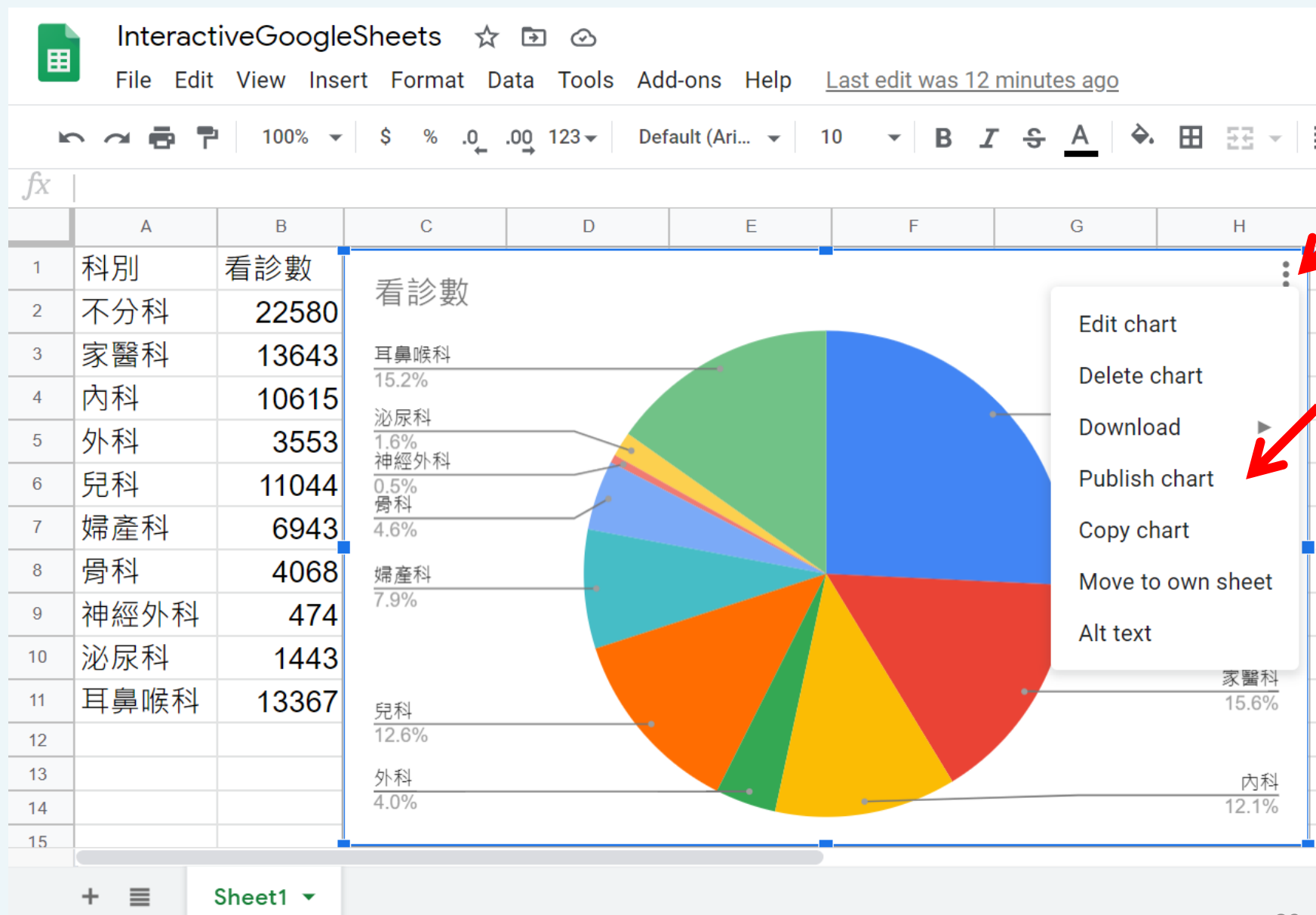
31



關掉 Chart editor 後，圖形才會是互動式



發佈至網頁 (一律公開 不能設定只供私人觀看)



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Interactive ▾

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► Published content & settings

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Link

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看診數 ▾

Interactive ▾

Press Ctrl+C to copy.

https://docs.google.com/spreadsheets/d/e/2PACX-1vTZJv_CQfsrgztLMOHFF

Or share this link using:   

Note: Viewers may be able to access the underlying data for published charts. [Learn more](#)

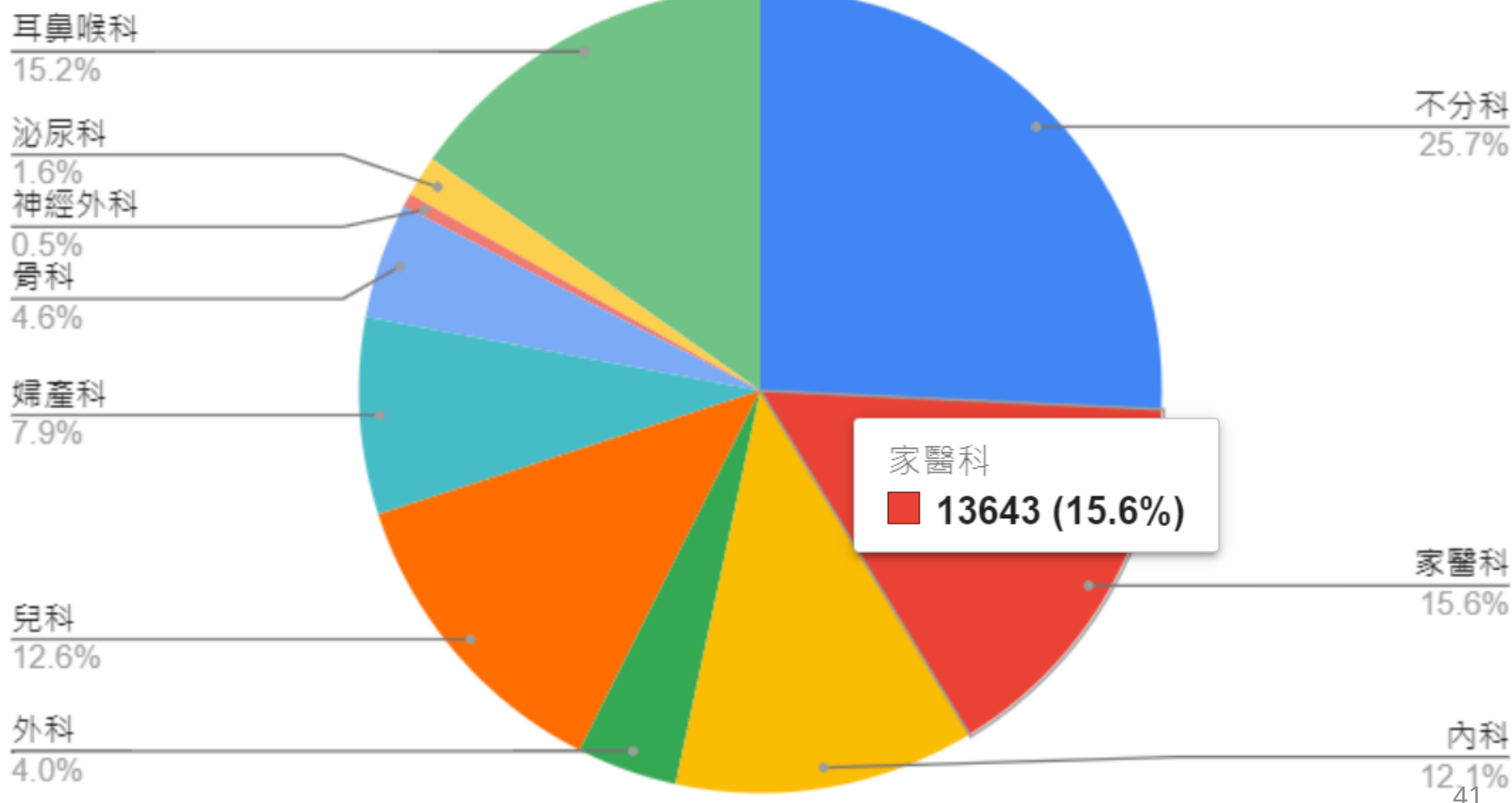
Published

► Published content & settings

在瀏覽器裡開起含有互動式圖表的網頁

https://docs.google.com/spread x +
docs.google.com/spreadsheets/d/e/2PACX-1vTZJv_CQfsrgztLMOHFRScrrgXQihZX9vKjTs5Epj7l

看診數



SECTION IV

JAVASCRIPT CHARTS

https://en.wikipedia.org/wiki/Comparison_of_JavaScript_charting_libraries

Main Technologies in Browsers

HTML5

CSS

Canvas

SVG

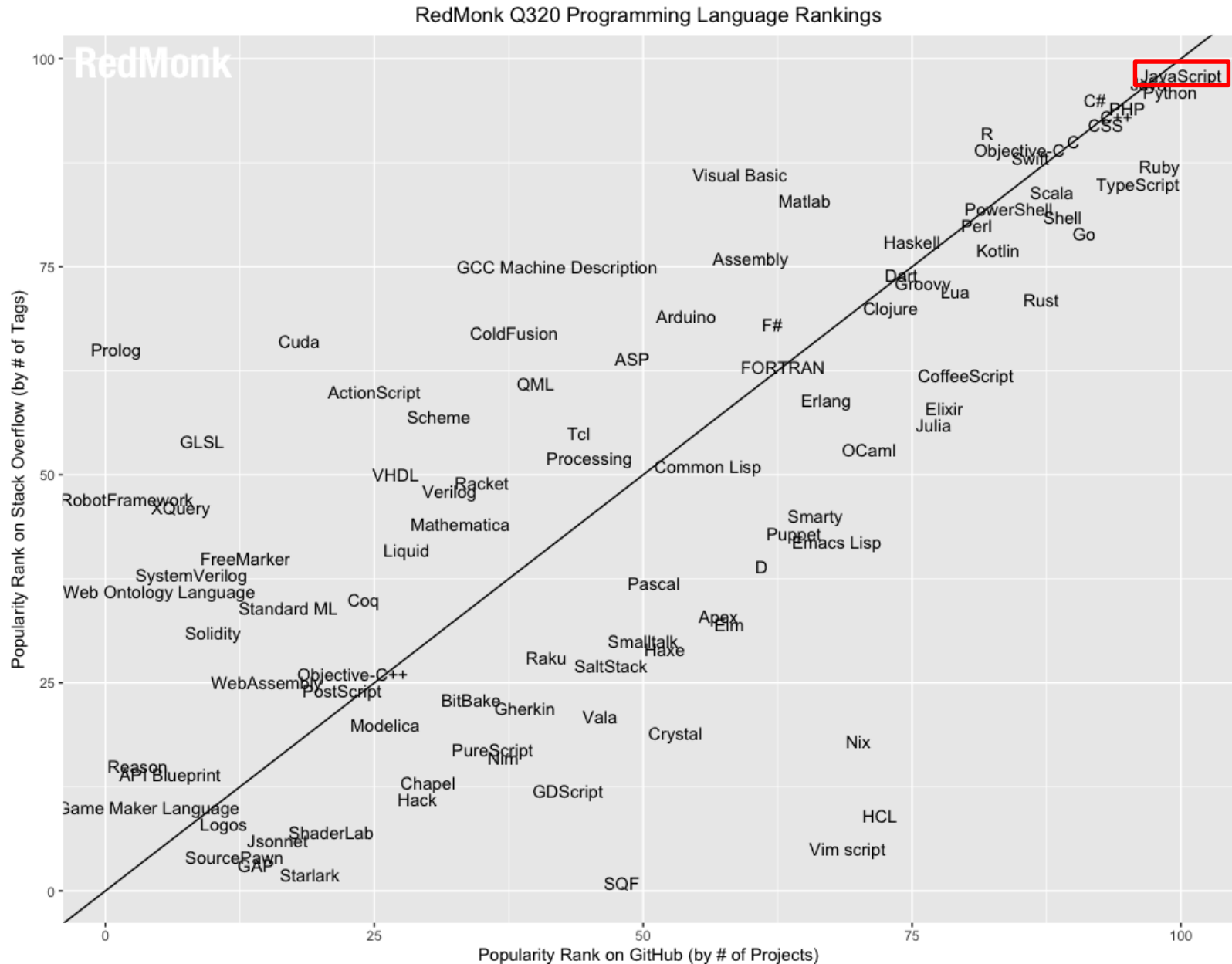
API

JavaScript

a programming language
within the HTML to
implement complex features
on web pages

JS Charting Libraries

圖表函數庫



JavaScript Charts 架構

```
<html>
```

```
<body>
```

```
<div id = "piechart"></div>
```

DIV
(division)
(區塊)

```
<script type = "text/javascript" src = "https://www.gstatic.com/charts/loader.js"></script>
```

```
<script type = "text/javascript">
```

```
// Load charts
```

```
// Draw the chart and set the chart values
```

```
// Display the chart inside the <div> element with id="piechart"
```

```
</script>
```

```
</body>
```

```
</html>
```

JavaScript

JS Charting
Library
(函數庫)

Processing

- Choose a chart of interest on the internet
- View the source code : (按滑鼠右鍵 => 檢查網頁原始碼)
or/then (按滑鼠右鍵 => 另存新檔)
- Identify the data of concern
- Modify the data
 - Change relative URLs to absolute URLs
- Save the file
 - Optional : save the relevant JavaScript file(s) locally in case of no internet connection on display
如果未來展示時不能聯上網路，需在電腦安裝相關函數庫檔案
- Run the new web page

Scripts of web pages are no secrets

```
3 <!DOCTYPE html>
4 <!--[if IE 8]>          <html class="no-js ie ie8" lang="zh-tw"> <![endif]-->
5 <!--[if (gte IE 9)|!(IE)]><!--> <html class="no-js" lang="zh-tw"> <!--<![endif]-->
6 <head>
7 <style type="text/css">
8 <!--
9 #B ul li {
10     display:inline;
11 }
12 -->
13 </style>
14
15
16 <!-- Basic Page Needs
17 ===== -->
18 <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
19 <meta charset="utf-8">
20 <meta http-equiv="X-UA-Compatible" content="IE=edge">
21 <title>臺北榮民總醫院</title>
22 <meta name="description" content="臺北榮民總醫院,Taipei Veterans General Hospital">
23 <meta name="keywords" content="臺北榮民總醫院,Taipei Veterans General Hospital,榮總,台北榮總,北榮,榮民總醫院,台北榮民總醫院,vghtpe,台北榮總
掛號,臺北榮總,vgh,榮總醫院,臺北榮民總醫院">
24 <meta name="author" content="臺北榮民總醫院,Taipei Veterans General Hospital">
25
26 <!-- Mobile Specific Metas
27 ===== -->
28 <meta name="viewport" content="width=device-width; initial-scale=1; maximum-scale=1; user-scalable=0;">
29
30 <link href="images/logo.ico" rel="shortcut icon">
31 <!-- CSS
32 ===== -->
```

綠色：注釋

紅色：HTML標記

藍色：屬性

黑色：呈現的文字

But, not easy to read sometimes

```
1 <html><head><meta name="referrer" content="strict-origin-when-cross-origin"><link href="/static/spreadsheets2/client/css/1644549501-v2-ritz_chart_css_ltr.css"
type="text/css" rel="stylesheet"></head><body style="padding:0;margin:0"><div id="embed_chart" style="width:600;height:371;overflow:hidden;"><script
type="text/javascript" nonce="mbgAscMkE5VyzkoxT8j79Q">var ritzspreadsheetconstants = {"localeName":"en_US","timeZoneConstants":{"GMT":{"names_ext":
{"STD_GENERIC_LOCATION":"GMT","STD_LONG_NAME_GMT":"GMT"},"std_offset":0,"names":["GMT","Greenwich Mean Time"],"id":"GMT","transitions":[]},"Asia/Taipei":
{"names_ext":{"STD_GENERIC_LOCATION":"Taiwan Time","STD_LONG_NAME_GMT":"GMT+08:00"},"std_offset":480,"names":["GMT+8","Taipei Standard
Time"],"id":"Asia/Taipei","transitions":[37216,60,41607,0,45976,60,50367,0,83224,60,85431,0]}},{"numberFormatSymbols":
{"DECIMAL_SEP":".", "PERMILL":"‰", "MINUS_SIGN":"-
", "PERCENT_PATTERN":"#.#%","INFINITY":"∞", "DEF_CURRENCY_CODE":"USD", "PLUS_SIGN":"+", "CURRENCY_PATTERN":"¤#.#00", "DECIMAL_PATTERN":"#.#0.###", "SCIENTIFIC_PATTE
RN":"#E0", "PERCENT":"%", "EXP_SYMBOL":"E", "GROUP_SEP":",", "NAN":"NaN", "ZERO_DIGIT":"0"}, {"allowTerminalDateSeparator":true, "amPmEnglishAccepted":false, "currencyPrefix
":true, "currencyTag":"\"$\"", "datePostsAreSuffix":true, "dateTimeWithoutYearPattern":"M/d
H:mm", "dateWithoutYearPattern":"M/d", "dayPost":"", "decimalSeparator":".", "defaultDatePattern":"M/d/yyyy", "defaultDateTimePattern":"M/d/yyyy
H:mm:ss", "defaultTimePattern":"h:mm:ss am/pm", "defaultUiLanguage":"en", "exponentSeparator":"E", "extraDateSeparator":"","firstDayOfWeek":0, "additionalFonts":
[], "additionalFormats":[{"1":5, "2":"yyyy-MM-dd", "3":1}, {"1":5, "2":"MM-dd-yyyy", "3":1}, {"1":5, "2":"M/d/yy", "3":1}, {"1":5, "2":"MM-dd-yy", "3":1},
{"1":5, "2":"M/d", "3":1}, {"1":5, "2":"MM-dd", "3":1}, {"1":5, "2":"d-MMM", "3":1}, {"1":5, "2":"d-MMM-yyyy", "3":1}, {"1":5, "2":"MMMM d, yyyy", "3":1}, {"1":5, "2":"MMMM
d", "3":1}, {"1":5, "2":"MMM-d", "3":1}, {"1":6, "2":"h:mm:ss am/pm", "3":1}, {"1":6, "2":"h:mm am/pm", "3":1}, {"1":6, "2":"H:mm:ss", "3":1}, {"1":6, "2":"H:mm", "3":1},
{"1":7, "2":"M/d H:mm", "3":1}], "amPmStrings":["AM", "PM"], "amString":"AM", "monthsFull":
["January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", "December"], "monthsShort":
["Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"], "pmString":"PM", "timePrefix":"","timeSeparator":"", "weekdaysFull":
["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"], "weekdaysShort":
["Sun", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat"], "groupingSeparator":"", "hourPost":"", "minimalDaysInFirstWeek":1, "minusSign":"-
", "minutePost":"","monthPost":"","negativeParens":true, "percent":"%", "periodIsDateSeparator":false, "plusSign":"+", "secondPost":"","shortDateFormatSuffix":"","yearPo
st":"","textInputCurrencySymbol":"$"};</script><script type="text/javascript" nonce="mbgAscMkE5VyzkoxT8j79Q">var chartData = { };chartData['chart'] = null;function
initCharts() {chartData['chart'] = { 'chartId': 'chart', 'elementId': 'embed_chart', 'chartJson':
'\\x7b\\x22view\\x22:\\x7b\\x22columns\\x22:\\x5b0,1\\x5d\\x7d,\\x22dataTable\\x22:\\x7b\\x22parsedNumHeaders\\x22:1,\\x22rows\\x22:\\x5b\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22不分科
\\x22\\x7d,\\x7b\\x22v\\x22:22580,\\x22f\\x22:\\x2222580\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22家醫科
\\x22\\x7d,\\x7b\\x22v\\x22:13643,\\x22f\\x22:\\x2213643\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22內科
\\x22\\x7d,\\x7b\\x22v\\x22:10615,\\x22f\\x22:\\x2210615\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22外科
\\x22\\x7d,\\x7b\\x22v\\x22:3553,\\x22f\\x22:\\x223553\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22兒科
\\x22\\x7d,\\x7b\\x22v\\x22:11044,\\x22f\\x22:\\x2211044\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22婦產科
\\x22\\x7d,\\x7b\\x22v\\x22:6943,\\x22f\\x22:\\x226943\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22骨科
\\x22\\x7d,\\x7b\\x22v\\x22:4068,\\x22f\\x22:\\x224068\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22神經外科
\\x22\\x7d,\\x7b\\x22v\\x22:474,\\x22f\\x22:\\x22474\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22泌尿科
\\x22\\x7d,\\x7b\\x22v\\x22:1443,\\x22f\\x22:\\x221443\\x22\\x7d\\x5d\\x7d,\\x7b\\x22c\\x22:\\x5b\\x7b\\x22v\\x22:\\x22耳鼻喉科
\\x22\\x7d,\\x7b\\x22v\\x22:13367,\\x22f\\x22:\\x2213367\\x22\\x7d\\x5d\\x7d\\x5d,\\x22cols\\x22:\\x5b\\x7b\\x22id\\x22:\\x22A\\x22,\\x22label\\x22:\\x22科別
\\x22,\\x22type\\x22:\\x22string\\x22\\x7d,\\x7b\\x22pattern\\x22:\\x22General\\x22,\\x22id\\x22:\\x22B\\x22,\\x22label\\x22:\\x22看診數
\\x22,\\x22type\\x22:\\x22number\\x22\\x7d\\x5d\\x7d,\\x22chartType\\x22:\\x22PieChart\\x22,\\x22options\\x22:\\x7b\\x22useFirstColumnAsDomain\\x22:true,\\x22width\\x22:600,\\x22title\\x22:'

```

view-source:https://docs.google.com/spreadsheets/d/e/2PACX-

1vTZJv_CQfsrgztLMOHFRScrrgXQihZX9vKjTs5Epj7Uj3J9U_mtGPwmlePhmRDSUuu8USYkDzFk0gp/pub
chart?oid=645579749&format=interactive

SECTION IV-A

LEAFLET

<https://leafletjs.com/>



an open-source JavaScript library
for mobile-friendly interactive maps

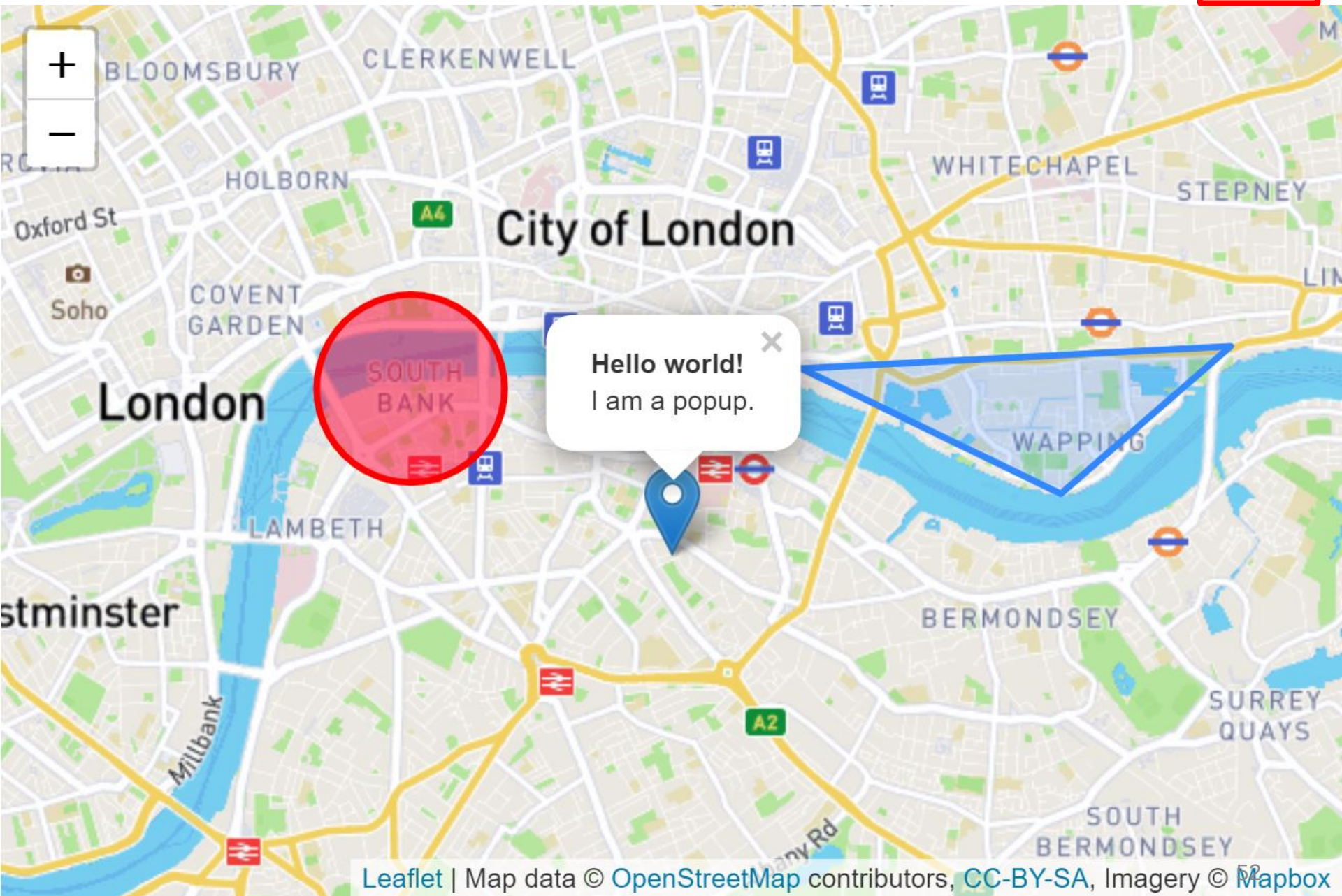
[Overview](#) [Tutorials](#) [Docs](#) [Download](#) [Plugins](#) [Blog](#)

Sep 4, 2020 — [Leaflet 1.7.1](#) has been released!

Leaflet is the leading open-source JavaScript library for mobile-friendly interactive maps. Weighing just about 39 KB of JS, it has all the mapping [features](#) most developers ever need.

Interactive Map 互動式地圖

- 先用 Google 地圖 或 OpenStreetMap 找出欲顯示地點的經緯度(Latitude緯度與Longitude經度)
- 再更改示範檔案裡的相關數據
- 預設地圖為 OpenStreetMap
- 一定要連線網路




```
1 <!DOCTYPE html>
2 <html>
3 <head>
4
5     <title>Quick Start - Leaflet</title>
6
7     <meta charset="utf-8" />
8     <meta name="viewport" content="width=device-width, initial-scale=1.0">
9
10    <link rel="shortcut icon" type="image/x-icon" href="docs/images/favicon.ico" />
11
12    <link rel="stylesheet" href="https://unpkg.com/leaflet@1.7.1/dist/leaflet.css" integrity="sha512-
xodZBNTC5n17Xt2atTPuE1HxjVMSvLVW9ocqUKLsCC5CXdbqCmblAshOMAS6/keqq/sMZMZ19scR4PsZChSR7A==" crossorigin="" />
13    <script src="https://unpkg.com/leaflet@1.7.1/dist/leaflet.js" integrity="sha512-
XQoYMqMTK8LvdXXYG3nZ448h0EQiglfqkJs1NOQV44cWnUrBc8PkAOcXy20w0vlaXaVUearIOBhiXZ5V3ynxwA==" crossorigin=""></script>
14
15
16
17 </head>
18 <body>
19
20
21
22 <div id="mapid" style="width: 600px; height: 400px;"></div>
23 <script>
24
25     var mymap = L.map('mapid').setView([51.505, -0.09], 13);
26
```

Modify the source code in text editor

仿作

```
<div id="mapid" style="width: 600px; height: 400px;"></div>
<script>
```

```
var mymap = L.map('mapid').setView([25.120383, 121.523335], 13);<!-- CHANGE HERE !!! -->
```

圖中心座標

```
L.tileLayer('https://api.mapbox.com/styles/v1/
{id}/tiles/{z}/{x}/{y}?access_token=pk.eyJ1IjoibWFwYm94IiwiYSI6ImNpejY4NXVycTA2emYycXBndHRqcmZ3N3gifQ.rJcFIG214AriISLbB6B5aw', {
  maxZoom: 18,
  attribution: 'Map data &copy; <a href="https://www.openstreetmap.org/">OpenStreetMap</a> contributors, ' +
    '<a href="https://creativecommons.org/licenses/by-sa/2.0/">CC-BY-SA</a>, ' +
    'Imagery © <a href="https://www.mapbox.com/">Mapbox</a>',
  id: 'mapbox/streets-v11',
  tileSize: 512,
  zoomOffset: -1
}).addTo(mymap);
```

```
L.marker([25.120383, 121.523335]).addTo(mymap)<!-- CHANGE HERE !!! -->
  .bindPopup("<b>大家好!</b><br />上課地點!").openPopup();<!-- CHANGE HERE !!! -->
```

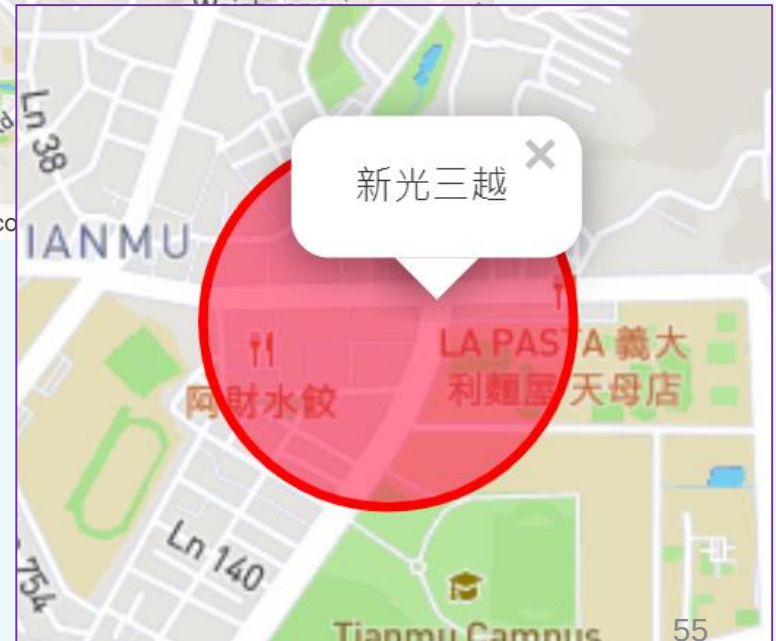
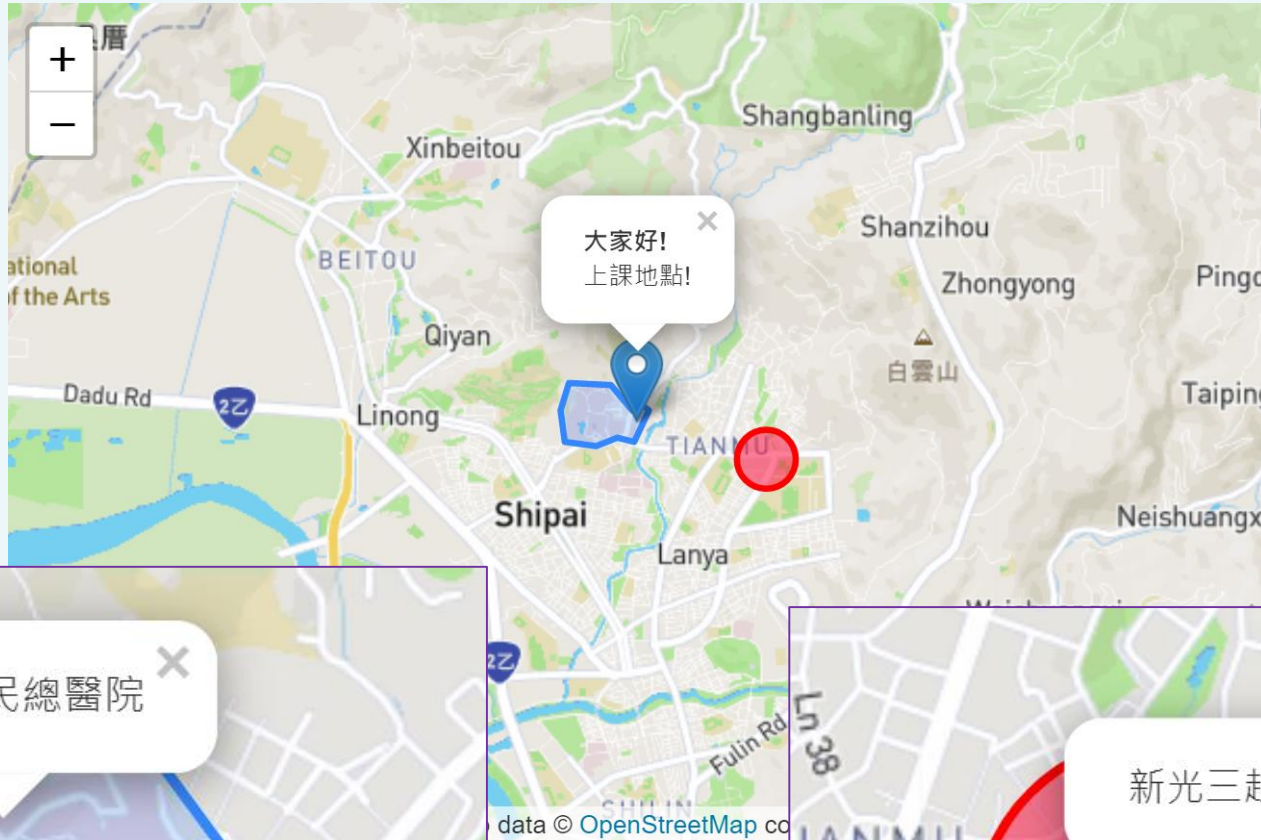
標記的座標

```
L.circle([25.117742, 121.533989], 250, {<!-- CHANGE HERE !!! -->
  color: 'red',
  fillColor: '#f03',
  fillOpacity: 0.5
}).addTo(mymap).bindPopup("新光三越");<!-- CHANGE HERE !!! -->
```

圓圈的座標

```
L.polygon([
  [25.119032, 121.517592],<!-- CHANGE HERE !!! -->
  [25.121332, 121.517179],<!-- CHANGE HERE !!! -->
  [25.123353, 121.517909],<!-- CHANGE HERE !!! -->
  [25.123236, 121.52132],<!-- CHANGE HERE !!! -->
```

多角形座標



SECTION IV-B

DATATABLES

Add advanced interaction controls to your HTML tables *the free & easy way*

1 - Include these two files ↴

CSS `//cdn.datatables.net/1.10.22/css/jquery.dataTables.css`

JS `//cdn.datatables.net/1.10.22/js/jquery.dataTables.js`

2 - Call this single function ↴

```
1 $(document).ready( function () {  
2     $('#myTable').DataTable();  
3 } );
```

3 - You get a fully interactive table →

[Full Getting Started Guide](#)

Show entries Search:

Name	Position	Office	Age	Start date
 Airi Satou	Accountant	Tokyo	33	2008/11/28
 Angelica Ramos	Chief Executive Officer (CEO)	London	47	2009/10/09
 Ashton Cox	Junior Technical Author	San Francisco	66	2009/01/12
 Bradley Greer	Software Engineer	London	41	2012/10/13
 Brenden Wagner	Software Engineer	San Francisco	28	2011/06/07
 Brielle Williamson	Integration Specialist	New York	61	2012/12/02
 Bruno Nash	Software Engineer	London	38	2011/05/03
 Caesar Vance	Pre-Sales Support	New York	21	2011/12/12
 Cara Stevens	Sales Assistant	New York	46	2011/12/06
 Cedric Kelly	Senior Javascript Developer	Edinburgh	22	2012/03/29

NamePositionOfficeAgeStart date

Showing 1 to 10 of 57 entries

Previous123456Next

<https://datatables.net/examples/styling/display.html>

範例

Show 10 entries

Search:

Name	Position	Office	Age	Start date	Salary
Airi Satou	Accountant	Tokyo	33	2008/11/28	\$162,700
Angelica Ramos	Chief Executive Officer (CEO)	London	47	2009/10/09	\$1,200,000
Ashton Cox	Junior Technical Author	San Francisco	66	2009/01/12	\$86,000
Bradley Greer	Software Engineer	London	41	2012/10/13	\$132,000
Brenden Wagner	Software Engineer	San Francisco	28	2011/06/07	\$206,850
Brielle Williamson	Integration Specialist	New York	61	2012/12/02	\$372,000
Bruno Nash	Software Engineer	London	38	2011/05/03	\$163,500
Caesar Vance	Pre-Sales Support	New York	21	2011/12/12	\$106,450
Cara Stevens	Sales Assistant	New York	46	2011/12/06	\$145,600
Cedric Kelly	Senior Javascript Developer	Edinburgh	22	2012/03/29	\$433,060

Name	Position	Office	Age	Start date	Salary
Showing 1 to 10 of 57 entries			Previous	1	2
				3	4
				5	6
					Next

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta http-equiv="Content-type" content="text/html; charset=utf-8">
5   <meta name="viewport" content="width=device-width,initial-scale=1,user-scalable=no">
6   <title>DataTables example - Base style</title>
7   <link rel="shortcut icon" type="image/png" href="/media/images/favicon.png">
8   <link rel="alternate" type="application/rss+xml" title="RSS 2.0" href="http://www.datatables.net/rss.xml">
9   <link rel="stylesheet" type="text/css" href="/media/css/site-examples.css?_6a23f3bca2453d0655063d05483e97a4">
10  <link rel="stylesheet" type="text/css" href="https://cdn.datatables.net/1.10.22/css/jquery.dataTables.min.css">
11  <style type="text/css" class="init">
12
13  </style>
14  <script type="text/javascript" src="/media/js/site.js?_d58481521385e8ff25e2cf33809b8be4"></script>
15  <script type="text/javascript" src="/media/js/dynamic.php?comments-page=examples%2Fstyling%2Fdisplay.html" async></script>
16  <script type="text/javascript" language="javascript" src="https://code.jquery.com/jquery-3.5.1.js"></script>
17  <script type="text/javascript" language="javascript" src="https://cdn.datatables.net/1.10.22/js/jquery.dataTables.min.js"></script>
18  <script type="text/javascript" language="javascript" src="./resources/demo.js"></script>
19  <script type="text/javascript" class="init">
20
21  $(document).ready(function() {
22    $('#example').DataTable();
23  });
24
25  </script>
26 </head>
27 <body class="wide comments example">
28   <a name="top" id="top"></a>
29   <div class="fw-background">
30     <div></div>
31   </div>
32   <div class="fw-container">
```


Modify the source code in text editor

仿作

```
<!DOCTYPE html>|
<html>|
<head>|
<meta http-equiv="Content-type" content="text/html; charset=big5">|
<meta name="viewport" content="width=device-width,initial-scale=1,user-scalable=no">|
<link rel="stylesheet" type="text/css" href="https://cdn.datatables.net/1.10.22/css/jquery.dataTables.min.css"/>|
<script type="text/javascript" src="https://cdn.datatables.net/v/dt/dt-1.10.22/datatables.min.js"></script>|
<script type="text/javascript" language="javascript" src="https://code.jquery.com/jquery-3.5.1.js"></script>|
<script type="text/javascript" language="javascript" src="https://cdn.datatables.net/1.10.22/js/jquery.dataTables.min.js"></script>|
<script type="text/javascript" class="init">|
, $(document).ready(function() {
,     $('#example').DataTable();
, });|
</script>|
</head>|
<body>|
<h3>單位同仁名單</h3>|
<table id="example" class="display" style="width:100%">|
<thead><tr><th>部</th><th>科</th><th>職稱</th><th>姓名</th><th>職號</th><th>Email</th></tr></thead>|
<tbody>|
<tr><td>院本部</td><td>&nbsp;</td><td>副院長</td><td>黃信彰</td><td>D0Z1</td><td>vgh_at_1</td></tr>|
<tr><td>家庭醫學部</td><td>&nbsp;</td><td>部主任</td><td>陳曾基</td><td>D0Z2</td><td>vgh_at_2</td></tr>|
<tr><td>家庭醫學部</td><td>安寧緩和醫學科</td><td>科主任</td><td>林明慧</td><td>D0Z3</td><td>vgh_at_3</td></tr>|
<tr><td>家庭醫學部</td><td>社區醫學科</td><td>科主任</td><td>張曉婷</td><td>D0Z4</td><td>vgh_at_4</td></tr>|
<tr><td>家庭醫學部</td><td>家庭醫學科</td><td>科主任</td><td>陳育群</td><td>D0Z5</td><td>vgh_at_5</td></tr>|
<tr><td>家庭醫學部</td><td>安寧緩和醫學科</td><td>主治醫師</td><td>賴志冠</td><td>D0Z6</td><td>vgh_at_6</td></tr>|
<tr><td>家庭醫學部</td><td>安寧緩和醫學科</td><td>主治醫師</td><td>吳彬源</td><td>D0Z7</td><td>vgh_at_7</td></tr>|
<tr><td>家庭醫學部</td><td>社區醫學科</td><td>主治醫師</td><td>劉瑞瑤</td><td>D0Z8</td><td>vgh_at_8</td></tr>|
<tr><td>家庭醫學部</td><td>安寧緩和醫學科</td><td>主治醫師</td><td>許若嵐</td><td>D0Z9</td><td>vgh_at_9</td></tr>|
<tr><td>家庭醫學部</td><td>安寧緩和醫學科</td><td>主治醫師</td><td>鄭博仁</td><td>D0Z10</td><td>vgh_at_10</td></tr>|
```


單位同仁名單

Show

10

 entries

Search:

部	科	職稱	姓名	職號	Email
院本部		副院長	黃信彰	DOZ1	vgh_at_1
家庭醫學部		部主任	陳曾基	DOZ2	vgh_at_2
家庭醫學部	安寧緩和醫學科	科主任	林明慧	DOZ3	vgh_at_3
家庭醫學部	社區醫學科	科主任	張曉婷	DOZ4	vgh_at_4
家庭醫學部	家庭醫學科	科主任	陳育群	DOZ5	vgh_at_5
家庭醫學部	安寧緩和醫學科	主治醫師	賴志冠	DOZ6	vgh_at_6
家庭醫學部	安寧緩和醫學科	主治醫師	吳彬源	DOZ7	vgh_at_7
家庭醫學部	社區醫學科	主治醫師	劉瑞瑤	DOZ8	vgh_at_8
家庭醫學部	安寧緩和醫學科	主治醫師	許若嵐	DOZ9	vgh_at_9
家庭醫學部	安寧緩和醫學科	主治醫師	鄭博仁	DOZ10	vgh_at_10

單位同仁名單

Show 10 entries

Search: 住院醫師

部	科	職稱	姓名	職號	Email
家庭醫學部		資深住院醫師	王怡人	DOZ26	vgh_at_26
家庭醫學部		第三年住院醫師	沈欣儀	DOZ33	vgh_at_33
家庭醫學部		第三年住院醫師	李映樺	DOZ34	vgh_at_34
家庭醫學部		第三年住院醫師	林譽家	DOZ35	vgh_at_35
家庭醫學部		第三年住院醫師	翁慈羚	DOZ36	vgh_at_36
家庭醫學部		第三年住院醫師	陳柏宇	DOZ37	vgh_at_37
家庭醫學部		第三年住院醫師	鄭以信	DOZ38	vgh_at_38
家庭醫學部		第二年住院醫師	李秉豪	DOZ39	vgh_at_39
家庭醫學部		第二年住院醫師	李易錚	DOZ40	vgh_at_40
家庭醫學部		第二年住院醫師	林怡萱	DOZ41	vgh_at_41

單位同仁名單

Show 10 entries

Search: 陳

部	科	職稱	姓名	職號	Email
家庭醫學部		部主任	陳曾基	DOZ2	vgh_at_2
家庭醫學部	家庭醫學科	科主任	陳育群	DOZ5	vgh_at_5
家庭醫學部		兼任主治醫師	陳亮恭	DOZ11	vgh_at_11
家庭醫學部		住院總醫師	陳紓涵	DOZ31	vgh_at_31
家庭醫學部		第三年住院醫師	陳柏宇	DOZ37	vgh_at_37
家庭醫學部		第二年住院醫師	陳明心	DOZ43	vgh_at_43
家庭醫學部		第二年住院醫師	陳和謙	DOZ44	vgh_at_44
家庭醫學部		第一年住院醫師	陳映瑜	DOZ48	vgh_at_48
家庭醫學部		第一年住院醫師	陳縱鉸	DOZ50	vgh_at_50

SECTION IV-C

DYGRAPHS

dygraphs

[Documentation](#) ▾

[Examples](#) ▾

[Play](#)

[Download](#)

[Community](#) ▾

[Contribute](#) ▾

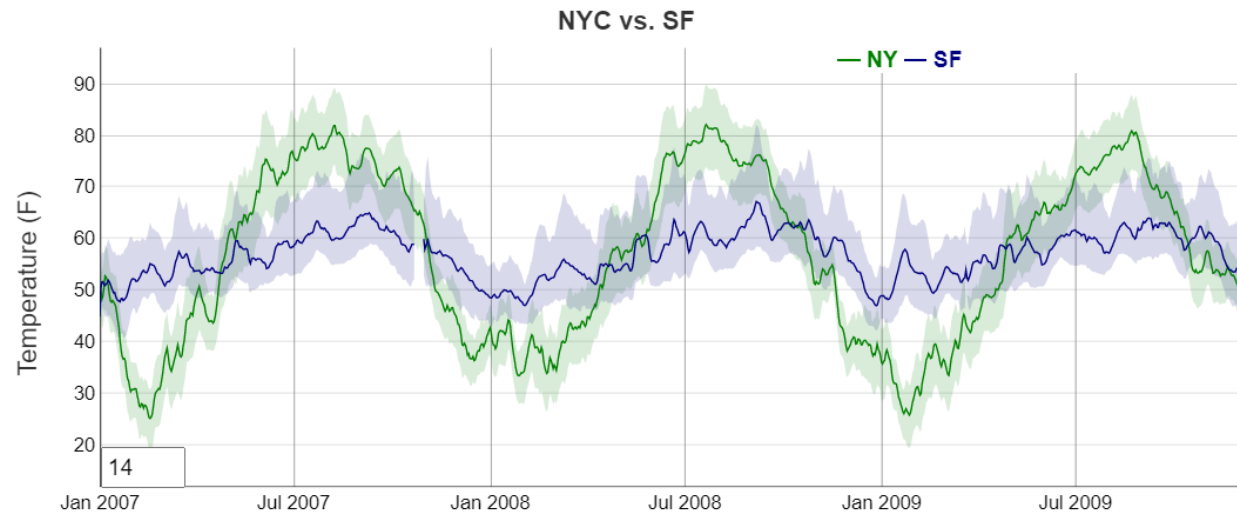
dygraphs is a fast, flexible open source JavaScript charting library.

It allows users to explore and interpret dense data sets. Here's how it works:

This JavaScript...

```
new Dygraph(div, "ny-vs-sf.txt", {
  legend: 'always',
  title: 'NYC vs. SF',
  showRoller: true,
  rollPeriod: 14,
  customBars: true,
  ylabel: 'Temperature (F)',
});
```

...makes this chart!

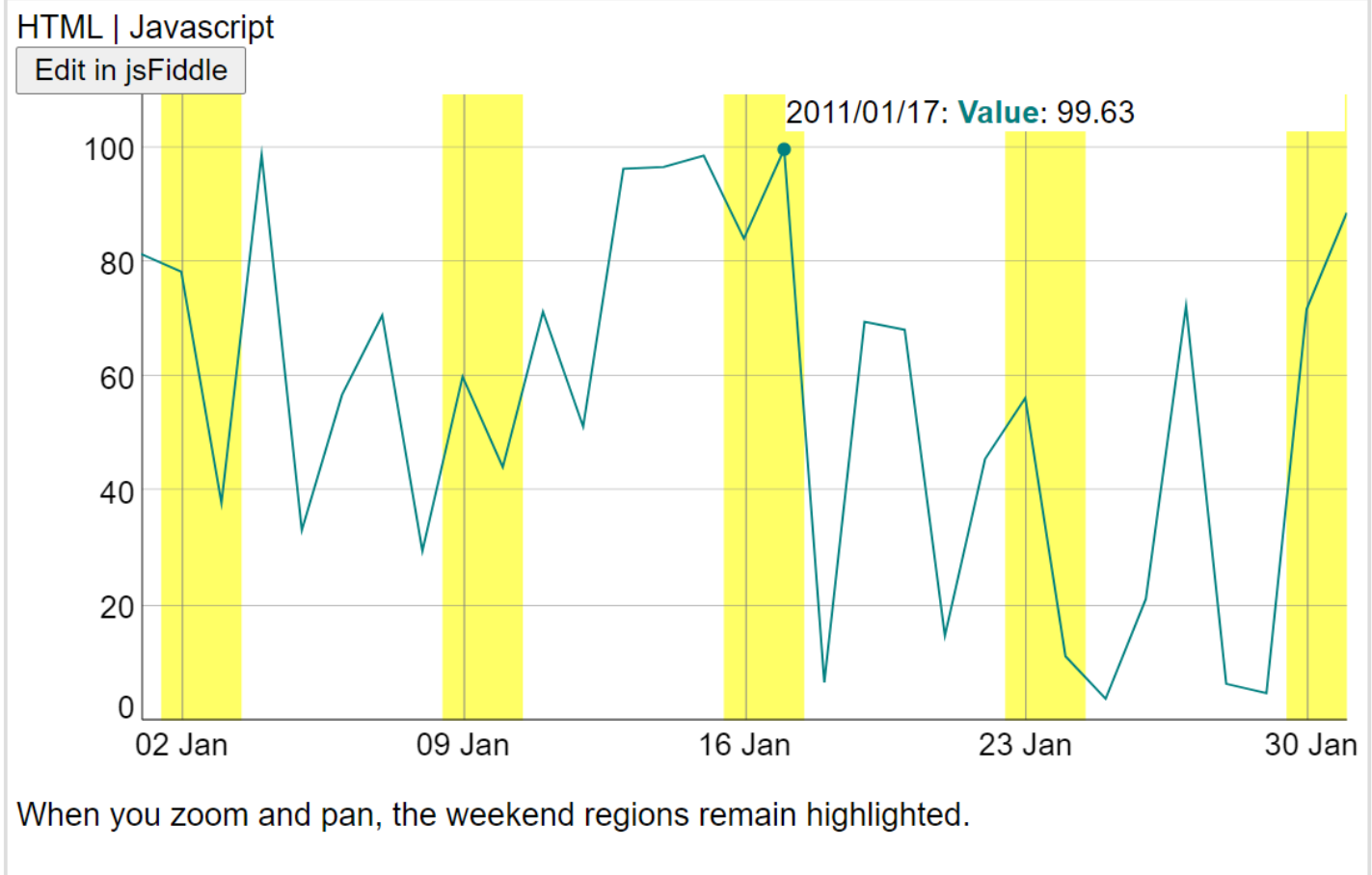


The chart is *interactive*: you can mouse over to highlight individual values. You can click and drag to zoom. Double-clicking will zoom you back out. Shift-drag will pan. You can change the number and hit enter to adjust the averaging period.

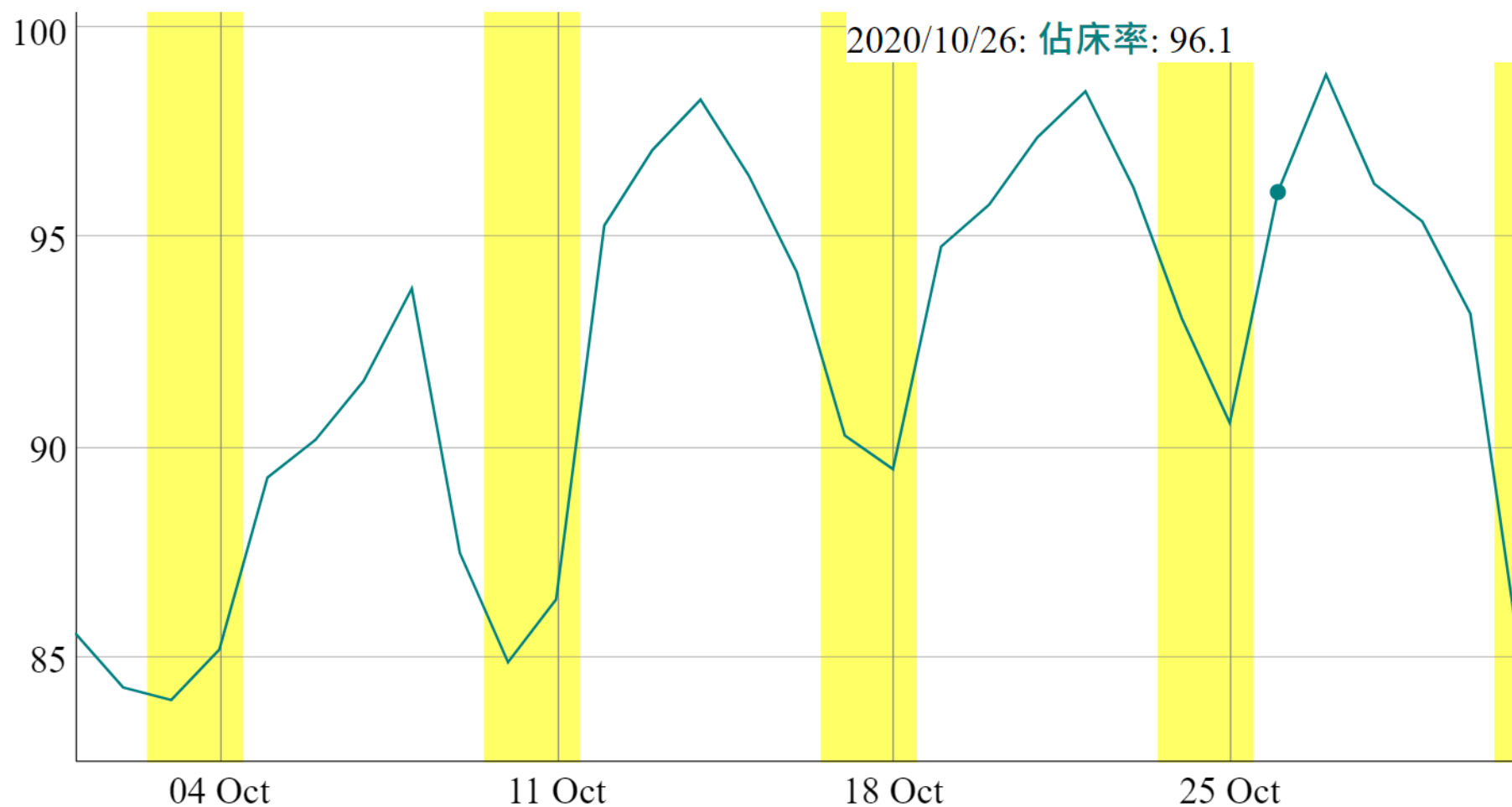
Dygraphs Gallery

- Annotations
- Time Series Drawing Demo
- Dynamic Update
- Highlight Closest Series
- Highlighted Region
- Highlighted Weekends
- Independent Series
- Function Plotter
- Link Interaction
- Per-series properties
- Synchronization

Draws a time series with weekends highlighted



每日佔床率(%) (with weekends highlighted)



SECTION IV-D

CHART.JS

<https://www.chartjs.org/>



Chart.js

Simple yet flexible JavaScript charting for designers & developers

[Get Started](#)

[Samples](#)

[GitHub](#)

58 types

Bar charts

Vertical
Horizontal
Multi axis
Stacked
Stacked groups

Line charts

Basic
Multi axis
Stepped
Interpolation
Line styles
Point styles
Point sizes

Area charts

Boundaries (line)
Datasets (line)
Stacked (line)
Radar

Other charts

Scatter
Scatter - Multi axis
Doughnut
Pie
Polar area
Radar
Combo bar/line

Linear scale

Step size
Min & max
Min & max (suggested)

Logarithmic scale

Line
Scatter

Time scale

Line
Line (point data)
Time Series
Combo

Scale options

Grid lines display
Grid lines style
Multiline labels
Filtering Labels
Non numeric Y Axis
Toggle Scale Type

Legend

Positioning
Point style
Callbacks

Tooltip

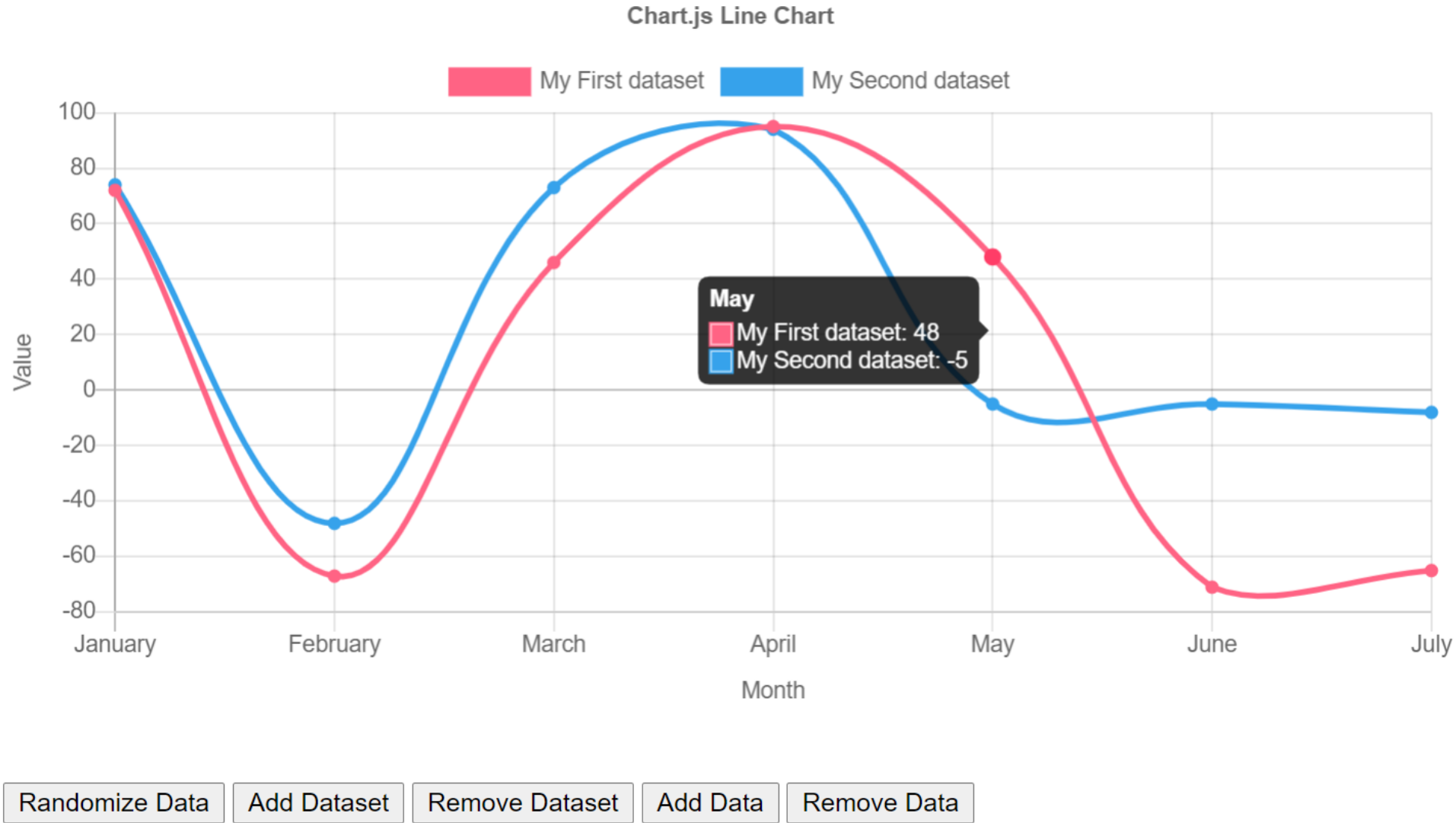
Positioning
Interactions
Callbacks
Border
HTML tooltips (line)
HTML tooltips (pie)
HTML tooltips (points)

Scriptable

Bar Chart
Bubble Chart
Pie Chart
Line Chart
Polar Area Chart
Radar Chart

Advanced

Progress bar
Content Security Policy

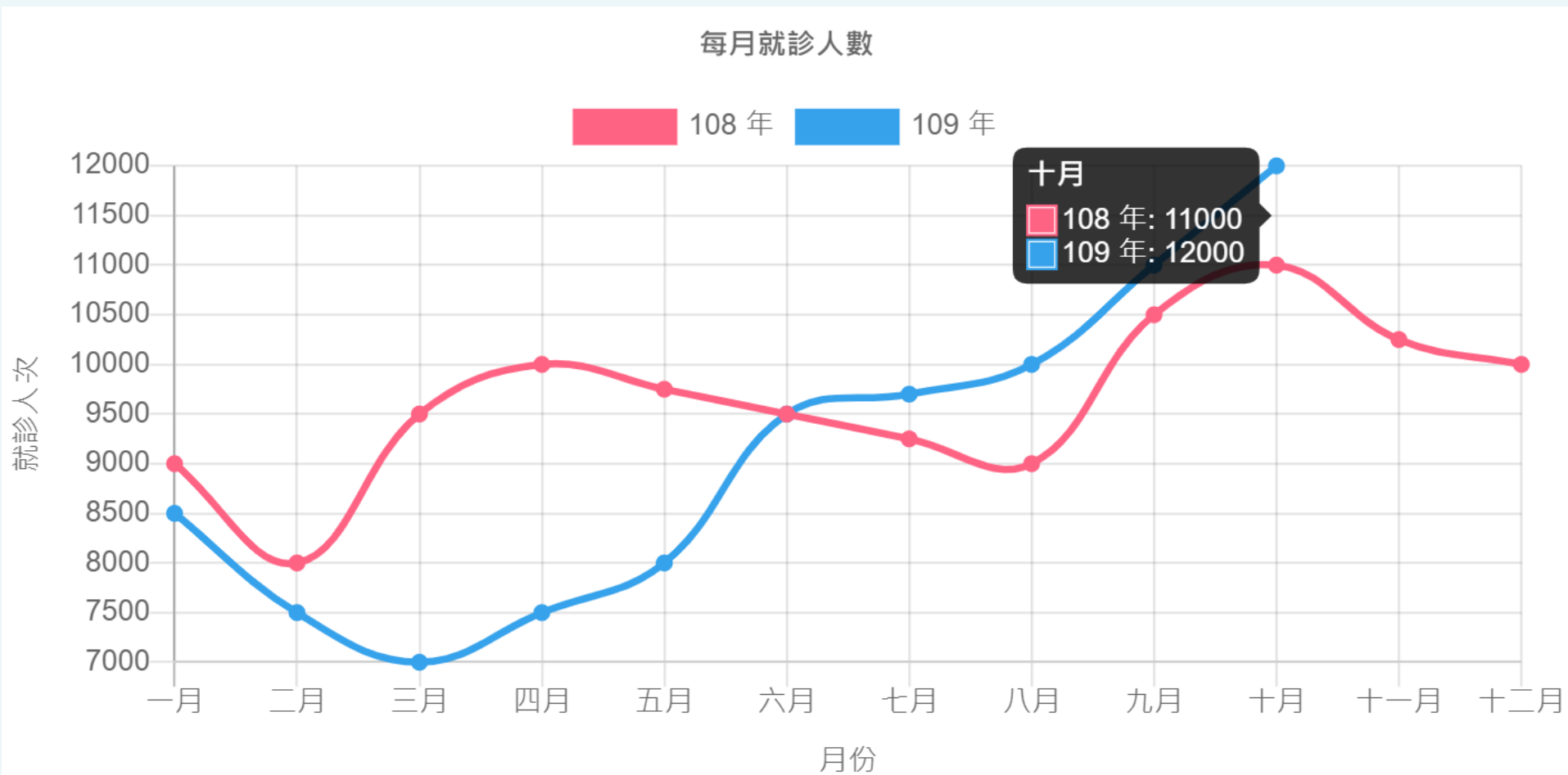


```
1 <!doctype html>
2 <html>
3
4 <head>
5   <title>Line Chart</title>
6   <script src="../../dist/2.9.4/Chart.min.js"></script>
7   <script src="../../utils.js"></script>
8   <style>
9     canvas{
10       -moz-user-select: none;
11       -webkit-user-select: none;
12       -ms-user-select: none;
13     }
14   </style>
15 </head>
16
17 <body>
18   <div style="width:75%;">
19     <canvas id="canvas"></canvas>
20   </div>
21   <br>
22   <br>
23   <button id="randomizeData">Randomize Data</button>
24   <button id="addDataset">Add Dataset</button>
25   <button id="removeDataset">Remove Dataset</button>
26   <button id="addData">Add Data</button>
27   <button id="removeData">Remove Data</button>
28   <script>
29     var MONTHS = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August', 'September', 'October', 'November',
30     'December'];
31     var config = {
32       type: 'line',
```

Modify the source code in text editor

仿作

```
<body>
<div style="width:75%;">
  <canvas id="canvas"></canvas>
</div>
<br>
<br>
<!-- CHANGE HERE !!! Remove 5 buttons -->
<script>
  <!-- var MONTHS = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August', 'September', 'October',
    'November', 'December']; --><!-- CHANGE HERE !!! Remove -->
  var config = {
    type: 'line',
    data: {
      labels: ['一月', '二月', '三月', '四月', '五月', '六月', '七月', '八月', '九月', '十月', '十一月', '十二月'], <!--
CHANGE HERE !!! -->
      datasets: [{
        label: '108 年', <!-- CHANGE HERE !!! -->
        backgroundColor: window.chartColors.red,
        borderColor: window.chartColors.red,
        data: [<!-- CHANGE HERE !!! -->
          9000, 8000, 9500, 10000, 9750, 9500, 9250, 9000, 10500, 11000, 10250, 10000
        ],
        fill: false,
      }, {
        label: '109 年', <!-- CHANGE HERE !!! -->
        fill: false,
        backgroundColor: window.chartColors.blue,
        borderColor: window.chartColors.blue,
        data: [<!-- CHANGE HERE !!! -->
          8500, 7500, 7000, 7500, 8000, 9500, 9700, 10000, 11000, 12000
        ]
      }
    ]
  }
}
```



SECTION IV-E

RGRAPH



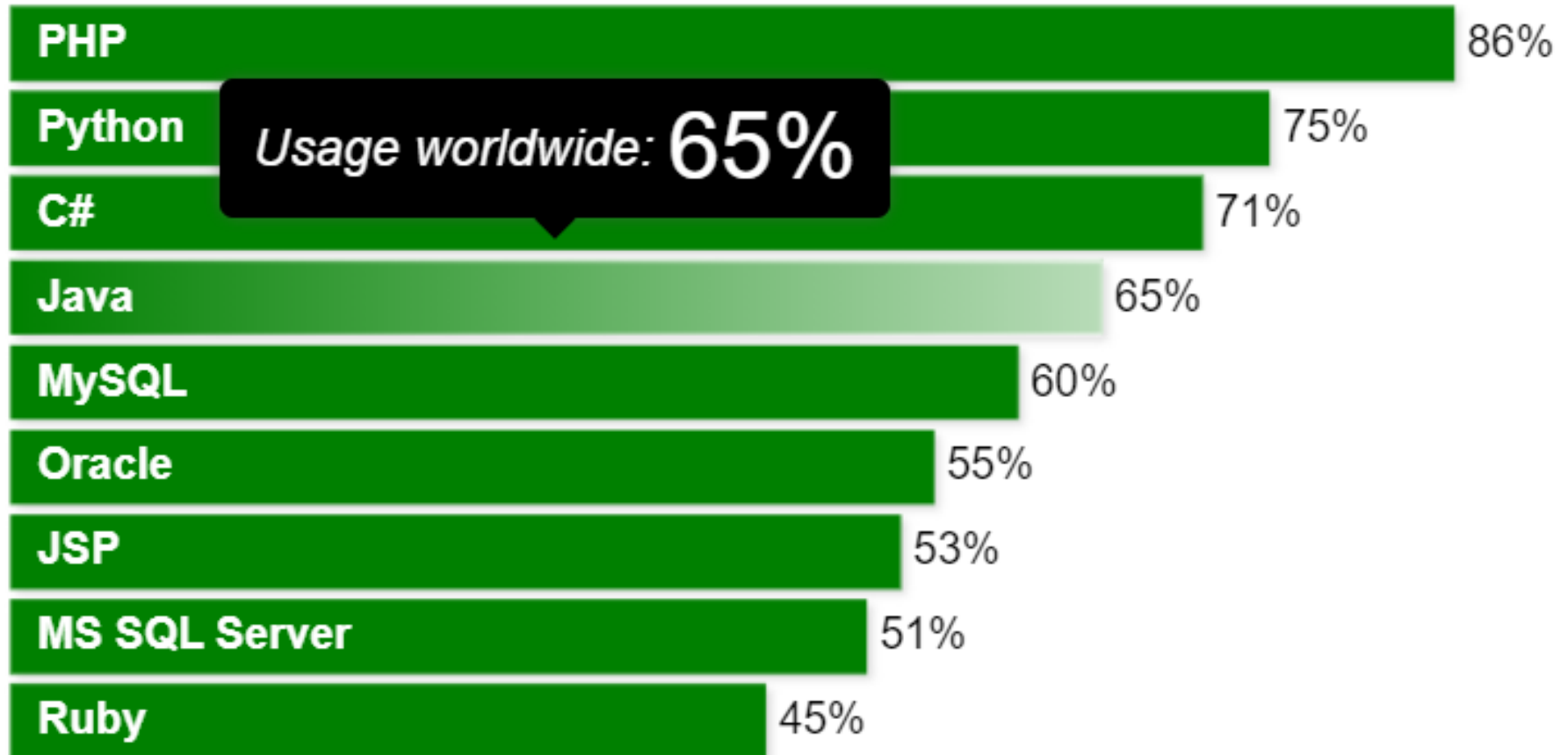
rgraph

Beautiful javascript charts for websites

Fast, functional, pretty JavaScript charts for everyone

Download

See examples...

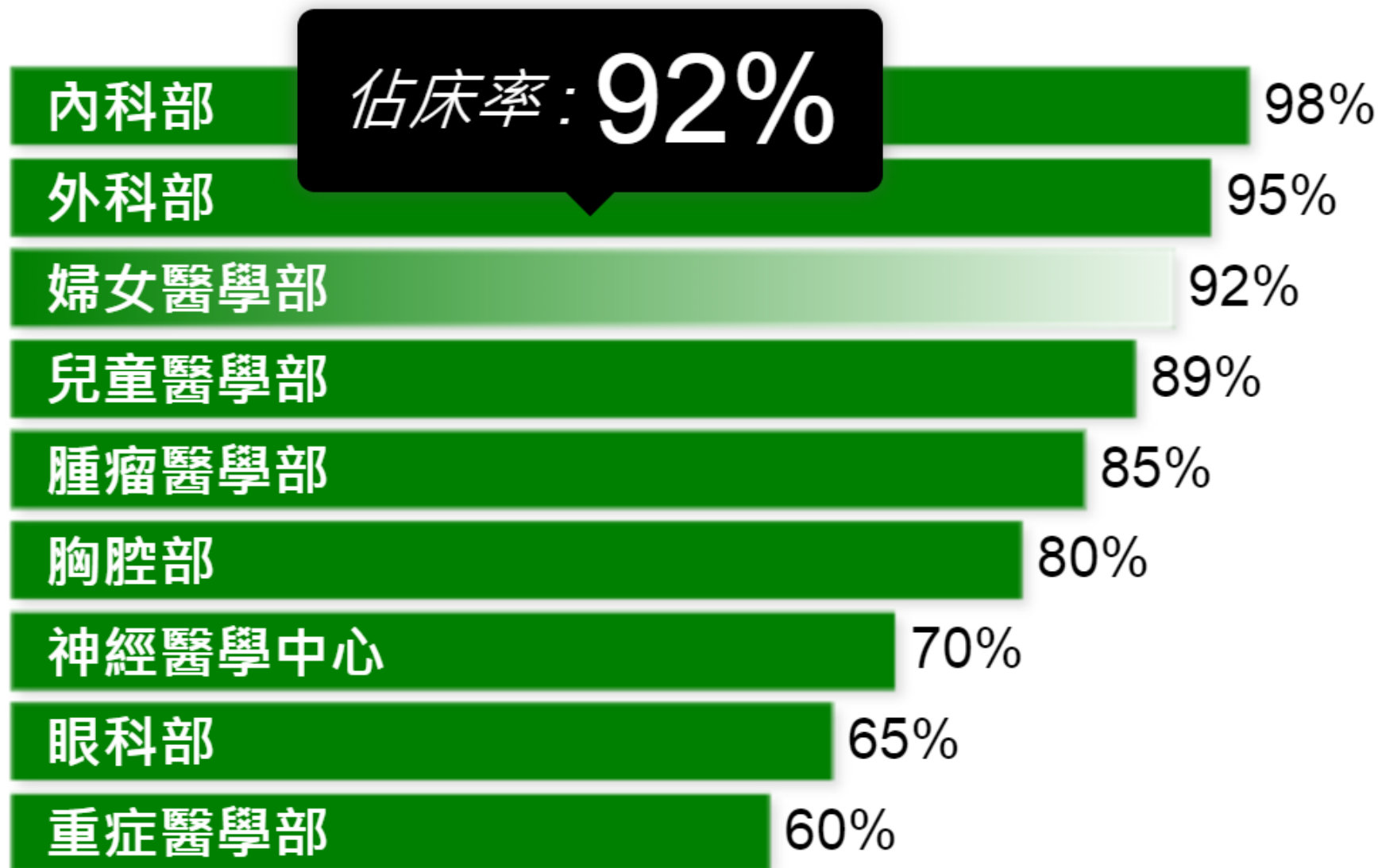


```
140 <script>
141 // The labels for the chart are not added by giving them to the
142 // chart but manually adding text to the chart.
143 labels = ['PHP','Python','C#','Java','MySQL','Oracle','JSP','MS SQL Server','Ruby'];
144
145 // Create the Horizontal Bar chart and configure it. With there
146 // being no labels on the left-hand-side the margin autofit
147 // will make the left margin zero
148 new RGraph.HBar({
149     id: 'cvs',
150     data: [86,75,71,65,60,55,53,51,45],
151     options: {
152         backgroundGrid: false,
153         xaxis: false,
154         yaxis: false,
155         xaxisScale: false,
156         labelsAbove: true,
157         labelsAboveUnitsPost: '%',
158         colors: ['green'],
159         shadow: true,
160         shadowColor: '#ddd',
161         shadowOffsetx: 2,
162         shadowOffsety: 2,
163         tooltips: '<i style="position: relative; top: -5px">Usage worldwide:</i> <span style="font-size: 26pt; ">{%value}%</span>',
164         tooltipsCss: {
165             fontSize: '14pt'
```

Modify the source code in text editor

仿作

```
<script>|
....// The labels for the chart are not added by giving them to the|
....// chart but manually adding text to the chart.|
....labels = ['内科部', '外科部', '婦女醫學部', '兒童醫學部', '腫瘤醫學部', '胸腔部', '神經醫學中心', '眼科部', '重症醫學部'];|
|
....// Create the Horizontal Bar chart and configure it. With there|
....// being no labels on the left-hand-side the margin autofit|
....// will make the left margin zero|
....new RGraph.HBar({|
.....id: 'cvs',|
.....data: [98,95,92,89,85,80,70,65,60],|
.....options: {|
.....backgroundGrid: false,|
.....xaxis: false,|
.....yaxis: false,|
.....xaxisScale: false,|
.....labelsAbove: true,|
.....labelsAboveUnitsPost: '%',|
.....colors: ['green'],|
.....shadow: true,|
.....shadowColor: '#ddd',|
.....shadowOffsetx: 2,|
.....shadowOffsety: 2,|
.....tooltips: '<i style="position: relative; top: -5px">佔床率:</i><span style="font-size: 26pt; ">{%value}%</span>',|
.....tooltipsCss: {|
.....fontSize: '14pt'|
.....},|
.....highlightFill: 'Gradient(rgba(255,255,255,0):white)',|
.....highlightStroke: 'Gradient(rgba(255,255,255,0):white)'|
.....}|
|
```



SECTION IV-F

ECHARTS

37大類 293種

 ECHARTS

首页 文档 下载 实例 资源 社区 其他

EN  APACHE INCUBATOR

折线图

柱状图

饼图

散点图

地理坐标/地图

K线图

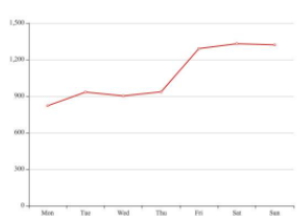
雷达图

盒须图

热力图

折线图 Line

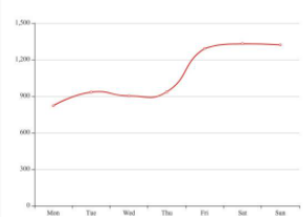
Basic Line Chart



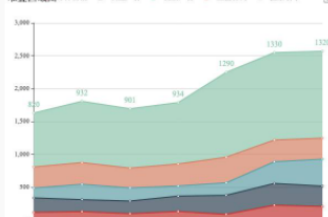
Basic area chart



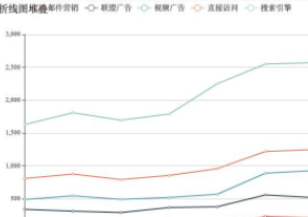
Smoothed Line Chart



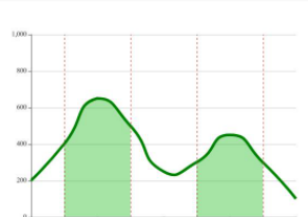
Stacked area chart



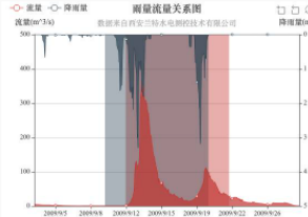
Stacked Line Chart



Area Pieces



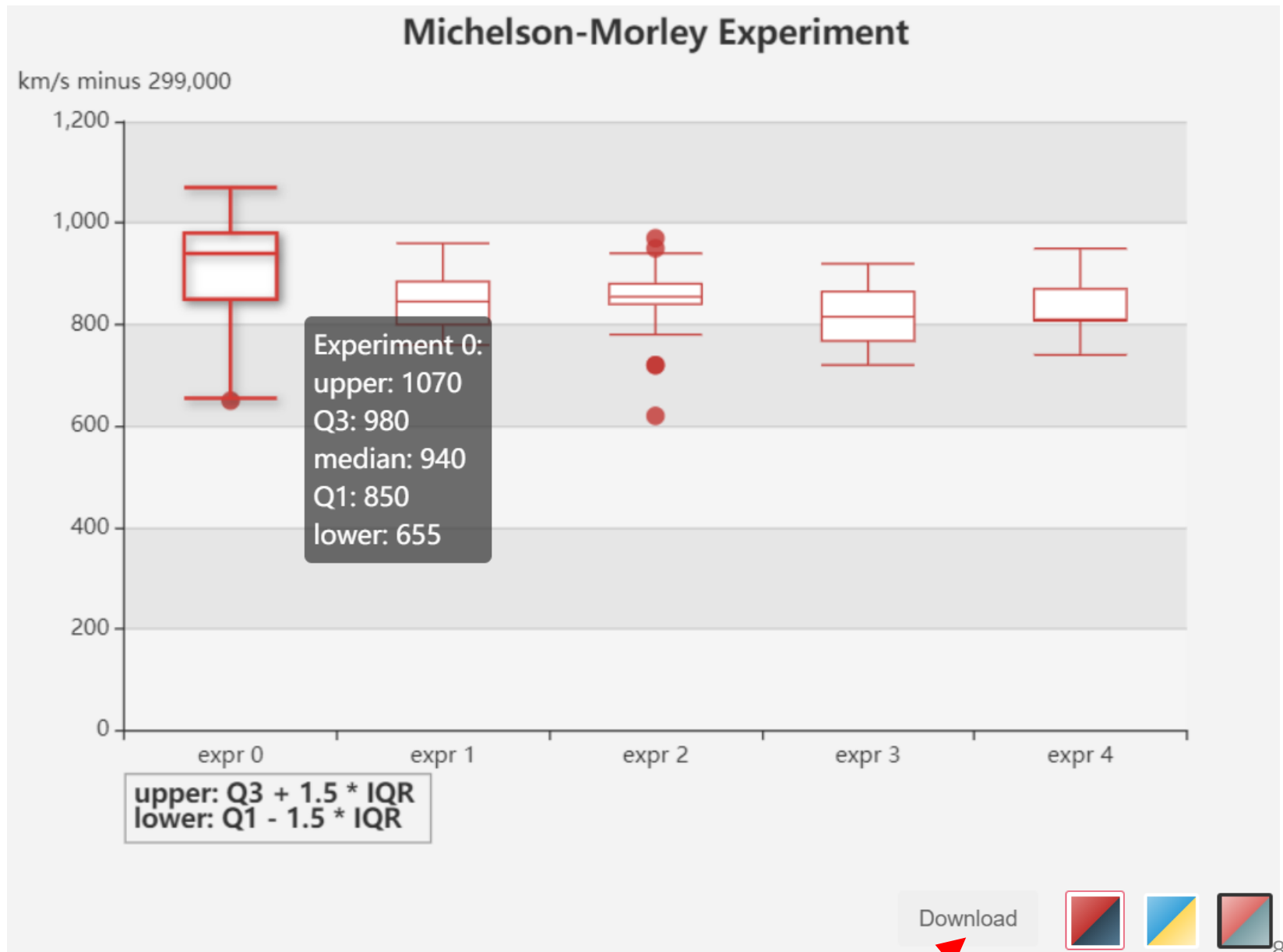
Rainfall



Large scale area chart



Theme:   

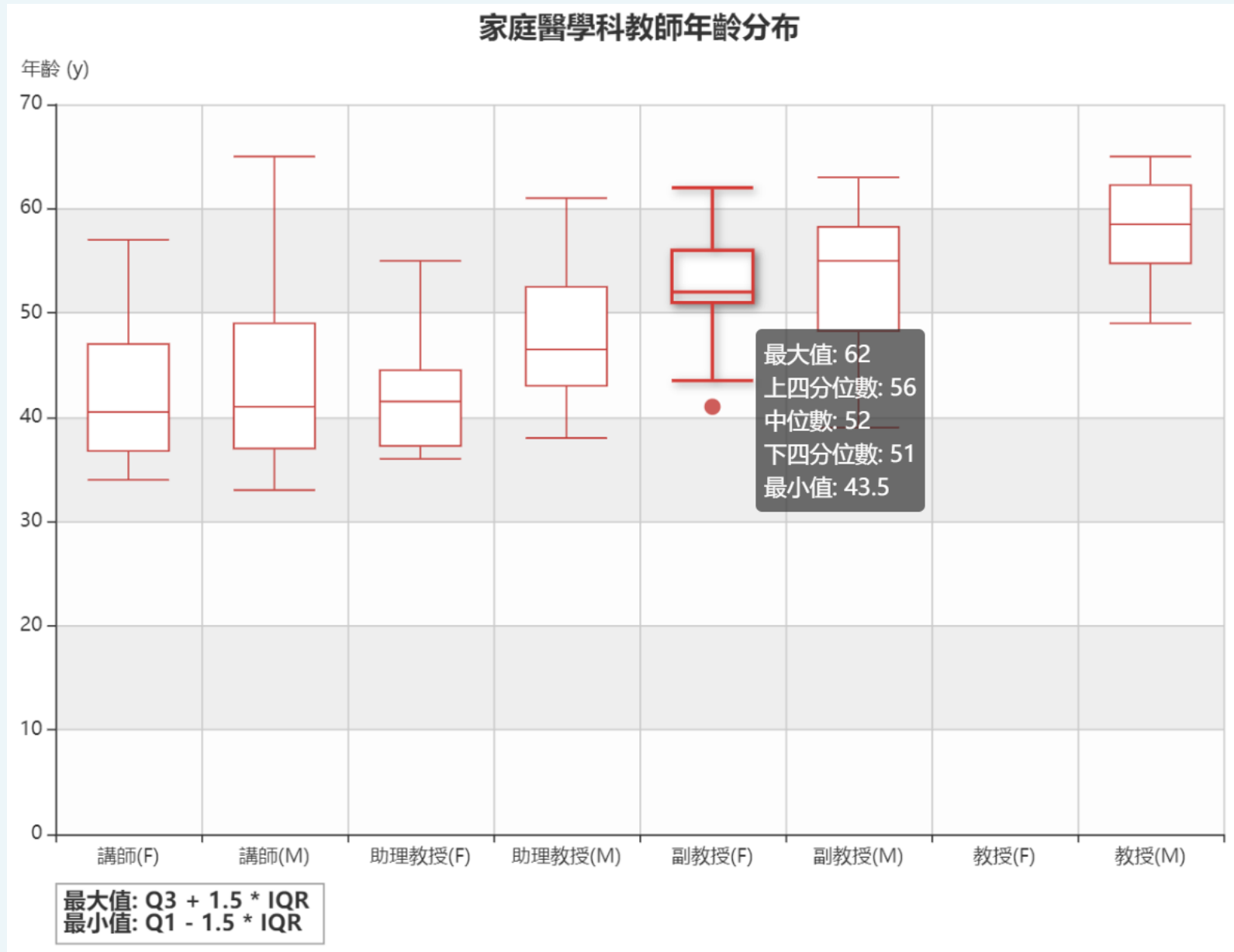


```
<!DOCTYPE html>
<html>
<head>
<meta charset="big5">
<title>ECharts</title>
<script type="text/javascript" src="https://cdn.jsdelivr.net/npm/echarts/dist/echarts.min.js"></script>
<script type="text/javascript" src="https://cdn.jsdelivr.net/npm/echarts/dist/extension/dataTool.js"></script>
</head>
<body>
<div id="main" style="width: 900px;height:600px;"></div>
<script type="text/javascript">

var myChart = echarts.init(document.getElementById('main'));

var data = echarts.dataTool.prepareBoxplotData([
  [34,35,36,36,37,38,39,39,42,43,43,45,53,56,57,57],
  [33,33,34,34,35,35,35,36,37,38,38,39,39,40,40,40,41,43,43,43,43,47,49,49,49,50,52,52,53,53,55,58,65],
  [36,37,37,38,41,42,43,45,52,55],
  [38,40,40,40,42,43,43,43,43,44,44,45,46,47,48,49,49,49,51,53,54,54,55,59,59,61],
  [41,51,52,56,62],
  [39,45,47,47,52,52,55,55,55,56,59,60,62,63],
  [],
  [49,52,54,55,57,58,59,60,62,63,63,65]
]);

var option = {
  title: [
    {
      text: '家庭醫學科教師年齡分布',
      left: 'center',
```

SECTION IV-G

PLOTLY

Search...

Quick Start

Getting Started

Is Plotly Free?

Cheat Sheet

Figure Reference

Function Reference

Event Reference

Configuration Options

GitHub

community.plotly.com

Examples

Fundamentals

Basic Charts

Statistical Charts

Scientific Charts

Financial Charts

Maps

3D Charts

Subplots

Chart Events

Plotly JavaScript Open Source Graphing Library

Built on top of [d3.js](#) and [stack.gl](#), Plotly.js is a high-level, declarative charting library. plotly.js ships with over 40 chart types, including 3D charts, statistical graphs, and SVG maps.

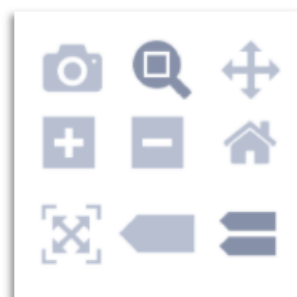
plotly.js is [free and open source](#) and you can [view the source](#), [report issues](#) or [contribute on GitHub](#).

Organizations such as Tesla Motors and Standard & Poors pair Plotly.js development with [Chart Studio Enterprise](#), which allows seamless export of Plotly.js charts into an enterprise platform for editing, sharing, embedding and searching Plotly.js charts. Please get in touch to learn more about [Chart Studio Enterprise](#).

► Read more about plotly.js features

Fundamentals

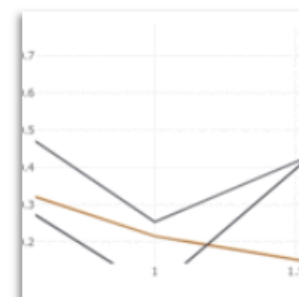
[More Fundamentals »](#)



Configuration
Options



Responsive / Fluid
Layouts



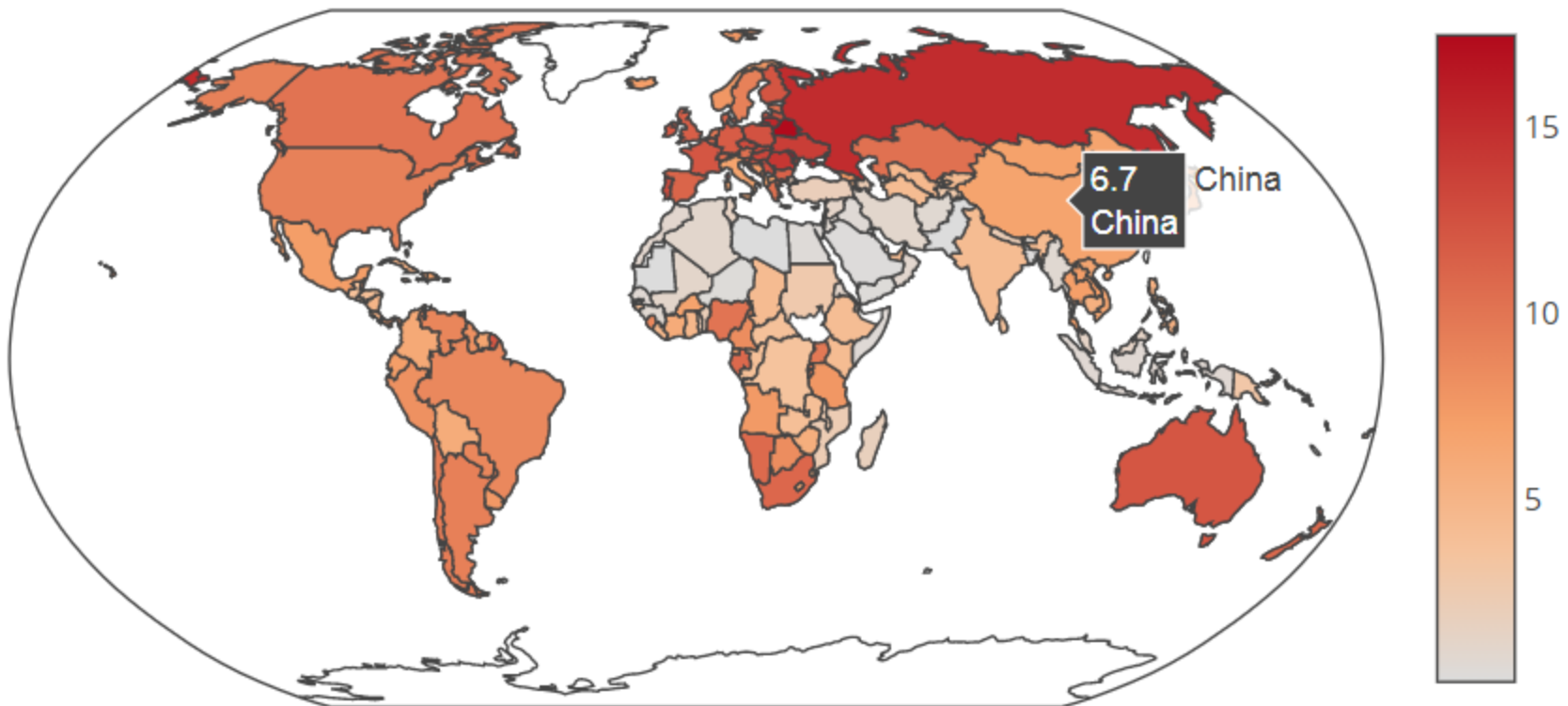
uirevision in
Plotly.react



React Plotly.js



Pure alcohol consumption
among adults (age 15+) in 2010



Choropleth Map 分級著色圖
(choro : area ; pleth : value)

```
<!doctype html>
<html>
<head>
<!-- Load plotly.js into the DOM -->
<script src='https://cdn.plot.ly/plotly-latest.min.js'></script>
</head>
<body>
<div id='myDiv'><!-- Plotly chart will be drawn inside this DIV --></div>
<script type="text/javascript">
```

```
Plotly.d3.csv('https://raw.githubusercontent.com/plotly/datasets/master/2010_alcohol_consumption_by_country.csv', function(err,
rows){
  function unpack(rows, key) {
    return rows.map(function(row) { return row[key]; });
  }

  var data = [{
    type: 'choropleth',
    locationmode: 'country names',
    locations: unpack(rows, 'location'),
    z: unpack(rows, 'alcohol'),
    text: unpack(rows, 'location'),
    autocolorscale: true
  }];

  var layout = {
    title: 'Pure alcohol consumption<br>among adults (age 15+) in 2010',
    geo: {
      projection: {
        type: 'robinson'
      }
    }
  }
}
```

Modify the source code in text editor

仿作

```
<!doctype html>
<html lang='big5'>
<head>
<!-- Load plotly.js into the DOM -->
<script src='https://cdn.plot.ly/plotly-latest.min.js'></script>
</head>
<body>
<div id='myDiv'><!-- Plotly chart will be drawn inside this DIV --></div>
<script type="text/javascript">
```

```
Plotly.d3.csv('https://raw.githubusercontent.com/tzengji/test/main/IMG.csv', function(err, rows) {
  function unpack(rows, key) {
    return rows.map(function(row) { return row[key]; });
  }

  var data = [{
    type: 'choropleth',
    locationmode: 'country names',
    locations: unpack(rows, 'location'),
    z: unpack(rows, 'count'),
    text: unpack(rows, 'location'),
    autocolorscale: true
  }];

  var layout = {
    title: '國外醫學院畢業生<br>就讀國家分布',
    geo: {
      projection: {
        type: 'robinson'
      }
    }
  }
});
```

安全考量
JavaScript 原則上
無法從 local 硬碟
直接讀取檔案

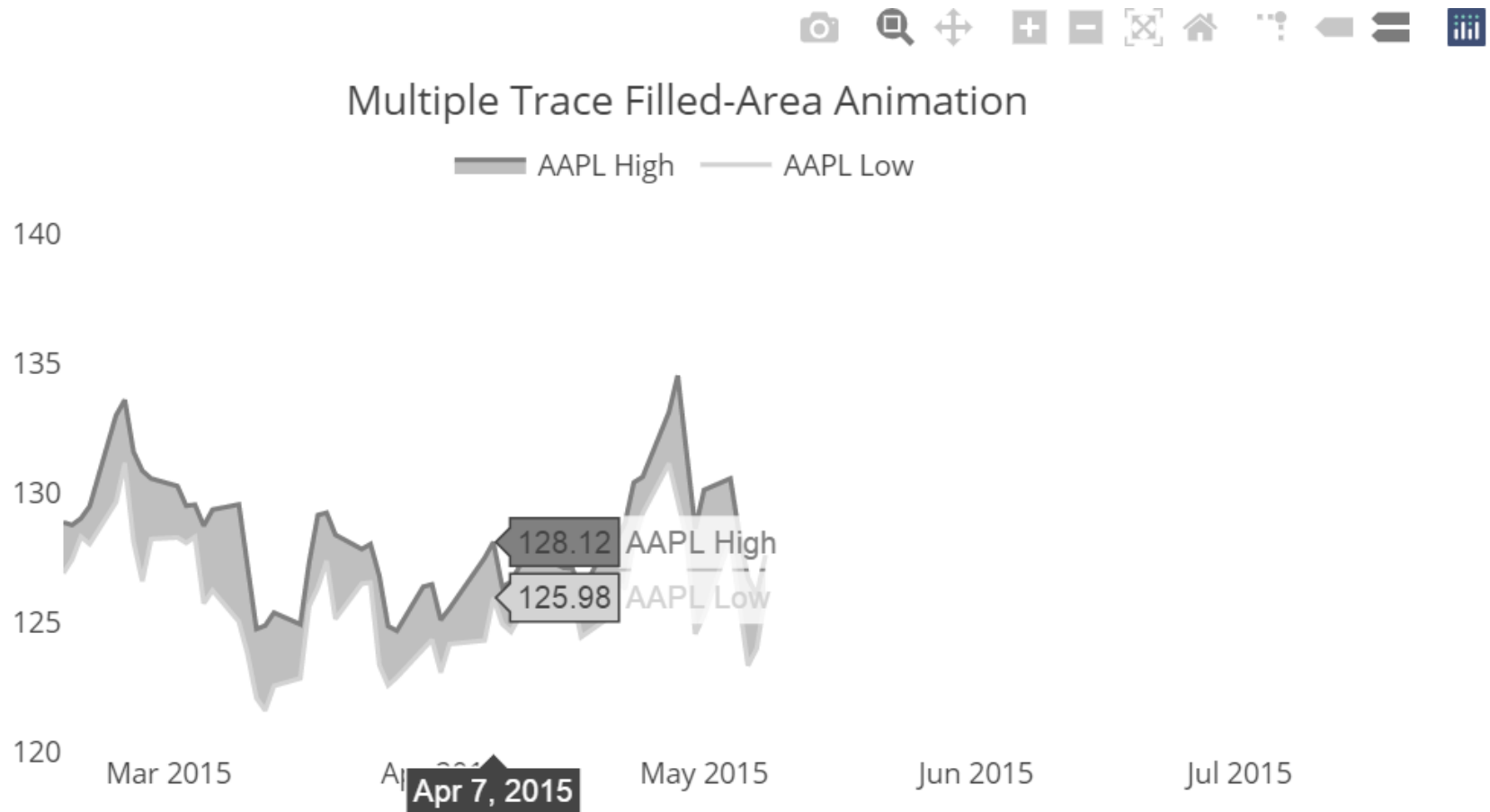


資料來源：

Chu FY, Chao YM, Chou LF, Chen TJ.

Natives as international medical graduates: a nationwide analysis in Taiwan.

International Journal of Health Planning and Management 2019 Jan;34(1):e291-e300.



Play

Pause

執行動畫

Cumulative Line Animation

Branden + Follow

HTML

1 <head>
2 <!-- Plotly.js -->
3 <script src="https://cdn.plot.ly/plotly-latest.min.js"></script>
4 </head>
5 <body>
6 <!-- Plotly chart will be drawn inside this DIV -->
7 <div id="myDiv"></div>
8 <script>
9 /* JAVASCRIPT CODE GOES HERE */
10 </script>
11 </body>
12 </html>

CSS

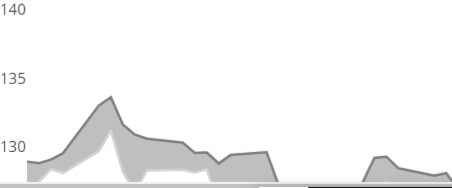
1

JS

1 function unpack(rows, key) {
2 return rows.map(function(row) { return row[key]; });
3 }
4
5
6
7 var frames = []
8 var x = unpack(rows, 'Date')
9 var y = unpack(rows, 'AAPL.High')
10 var x2 = unpack(rows, 'Date')
11 var y2 = unpack(rows, 'AAPL.Low')
12
13 var n = 100;
14 for (var i = 0; i < n; i++) {
15 frames[i] = {data: [{x: [], y: []}, {x: [], y:
16 []}]
17 frames[i].data[1].x = x.slice(0, i+1);
18 frames[i].data[1].y = y.slice(0, i+1);

Multiple Trace Filled-Area Animation

AAPL High AAPL Low



Console Assets Comments Shortcuts

CodePen: Unlock all of CodePen

Fork Embed Export Share

Modify the source code in text editor

仿作

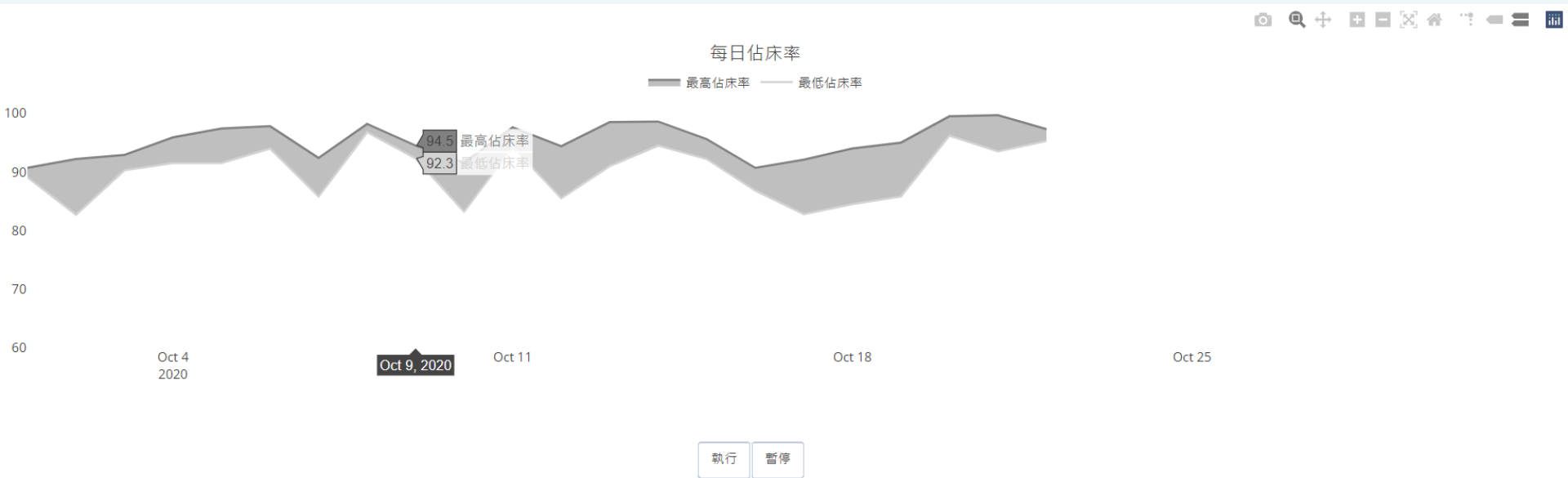
```
<!doctype html>
<html lang='big5'>
<head>
<!-- Plotly.js -->
<script src="https://cdn.plot.ly/plotly-latest.min.js"></script>
</head>
<body>
<!-- Plotly chart will be drawn inside this DIV -->
<div id="myDiv"></div>
<script>
/* JAVASCRIPT CODE GOES HERE */

Plotly.d3.csv("https://raw.githubusercontent.com/tzengji/test/main/occupancy.csv", function(err, rows) {
    function unpack(rows, key) {
        return rows.map(function(row) { return row[key]; });
    }

    var frames = []
    var x = unpack(rows, 'Date') <!-- CHANGE HERE !!! -->
    var y = unpack(rows, 'High') <!-- CHANGE HERE !!! -->
    var x2 = unpack(rows, 'Date') <!-- CHANGE HERE !!! -->
    var y2 = unpack(rows, 'Low') <!-- CHANGE HERE !!! -->

    var n = 31; <!-- CHANGE HERE !!! -->
    for (var i = 0; i < n; i++) {
        frames[i] = {data: [{x: [], y: []}, {x: [], y: []}]}
        frames[i].data[1].x = x.slice(0, i+1);
        frames[i].data[1].y = y.slice(0, i+1);
        frames[i].data[0].x = x2.slice(0, i+1);
        frames[i].data[0].y = y2.slice(0, i+1);
    }
});
```

安全考量
JavaScript 原則上
無法從 local 硬碟
直接讀取檔案



SECTION IV-H

GOOGLE CHARTS

Interactive charts for browsers and mobile devices.

Home

Guides

Reference

Support

Display live data on your site

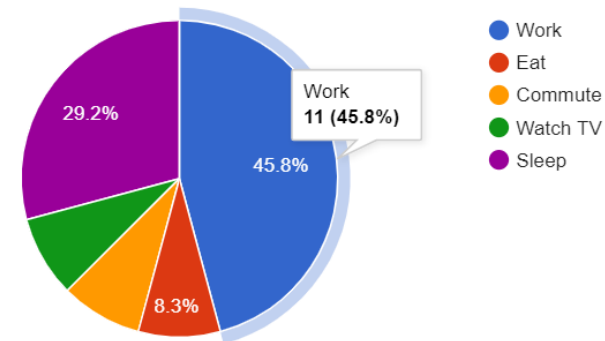
About Google chart tools

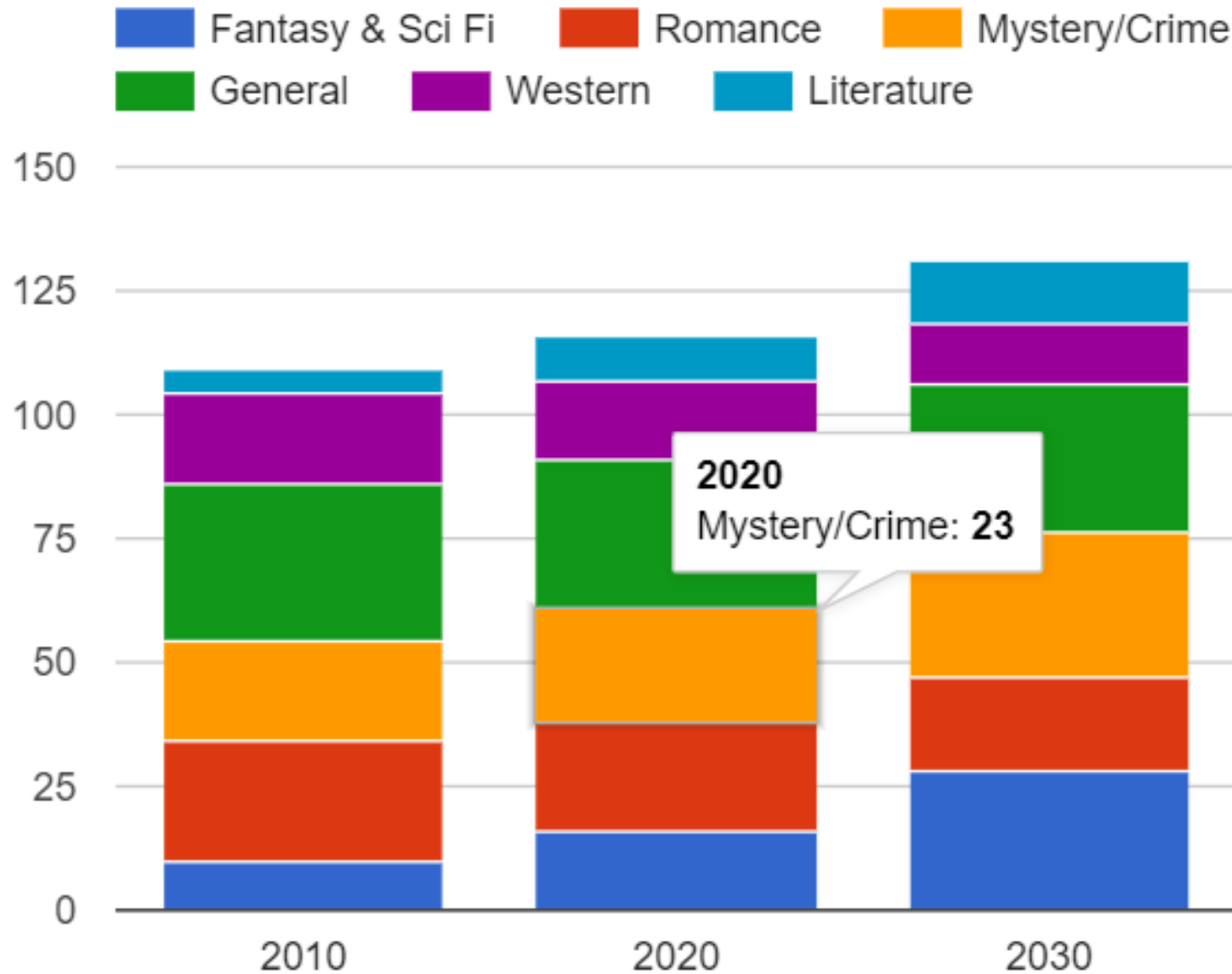
Google chart tools are powerful, simple to use, and free. Try out our rich gallery of interactive charts and data tools.

[Get started](#)

[Chart Gallery](#)

Pie Chart - [view source](#)





```
<script type="text/javascript" src="https://www.gstatic.com/charts/loader.js"></script>

<script type="text/javascript">
// Load google charts
google.charts.load('current', {'packages':['corechart']});
google.charts.setOnLoadCallback(drawChart);

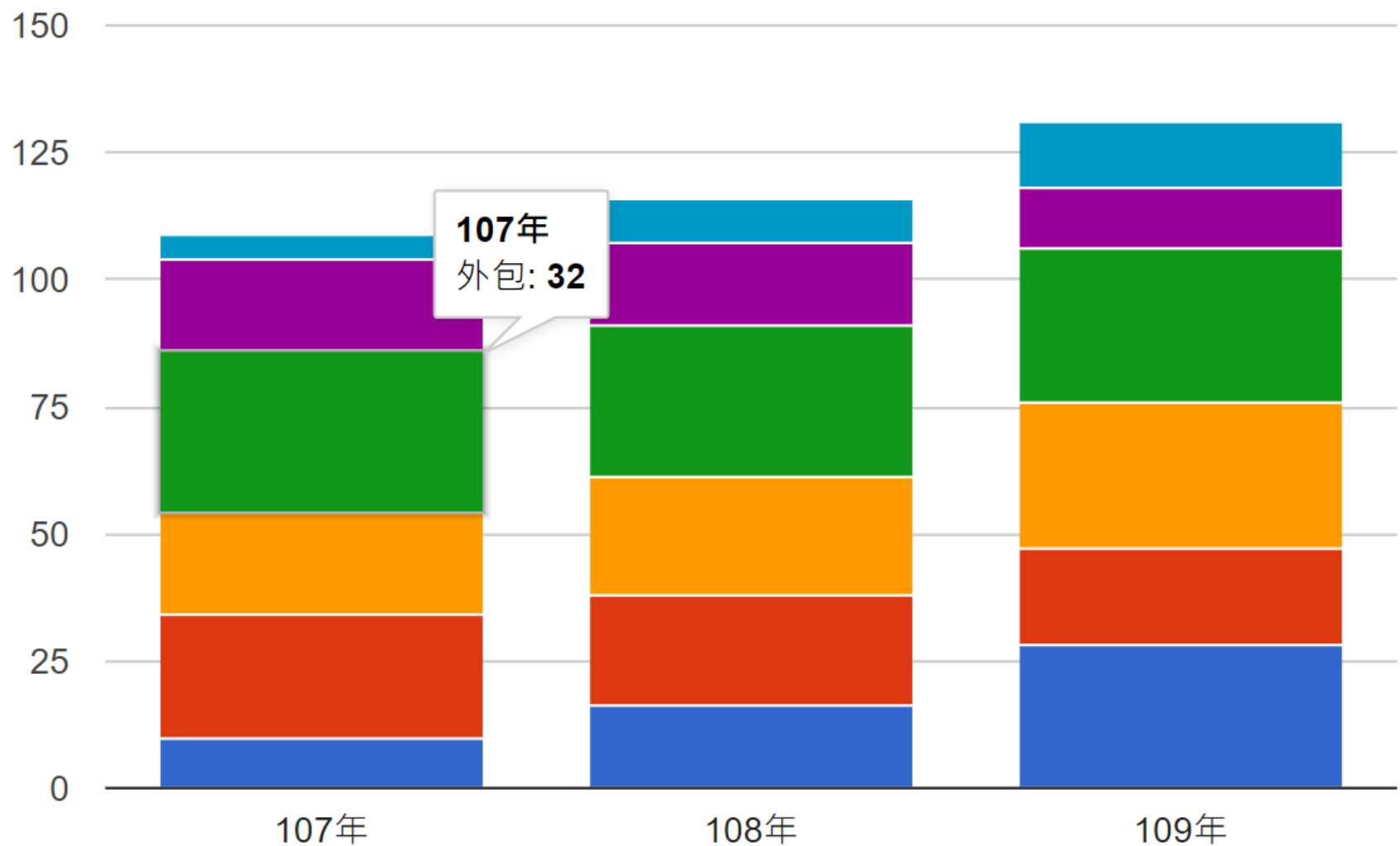
// 在此處更改數據 用以產製圖形
function drawChart() {
  var data = google.visualization.arrayToDataTable([
    ['年度', '人事', '藥品', '衛材', '外包', '折舊', '其他', { role: 'annotation' } ],
    ['107年', 10, 24, 20, 32, 18, 5, ''],
    ['108年', 16, 22, 23, 30, 16, 9, ''],
    ['109年', 28, 19, 29, 30, 12, 13, '']
  ]);

  var options = {
    title: "本院業務成本與費用結構（單位：新台幣億元）",
    width: 750,
    height: 450,
    legend: { position: 'top', maxLines: 3 },
    bar: { groupWidth: '75%' },
    isStacked: true,
  };

  // Display the chart inside the <div> element with id="columnchart_values"
  var chart = new google.visualization.ColumnChart(document.getElementById("columnchart_values"));
  chart.draw(data, options);
}
</script>
```

本院業務成本與費用結構 (單位：新台幣億元)

人事 藥品 衛材 外包 折舊 其他



SECTION IV-I

FREE FOR NON-COMMERCIAL USE

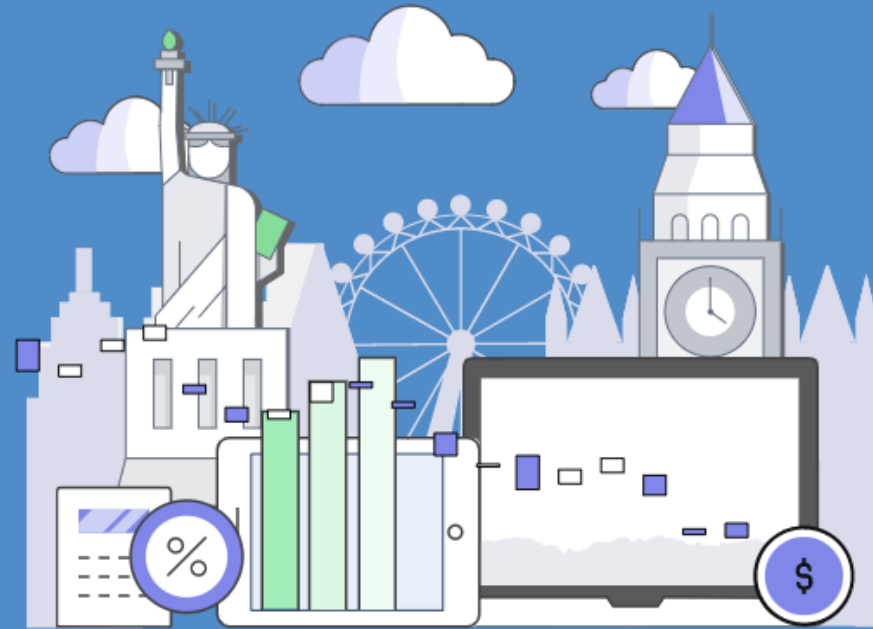


Highcharts >

Create interactive charts easily for your web projects.

Used by tens of thousands of developers and over 80% out of the world's 100 largest companies. Highcharts is the simplest yet most flexible charting API on the market.

 Download  Demo



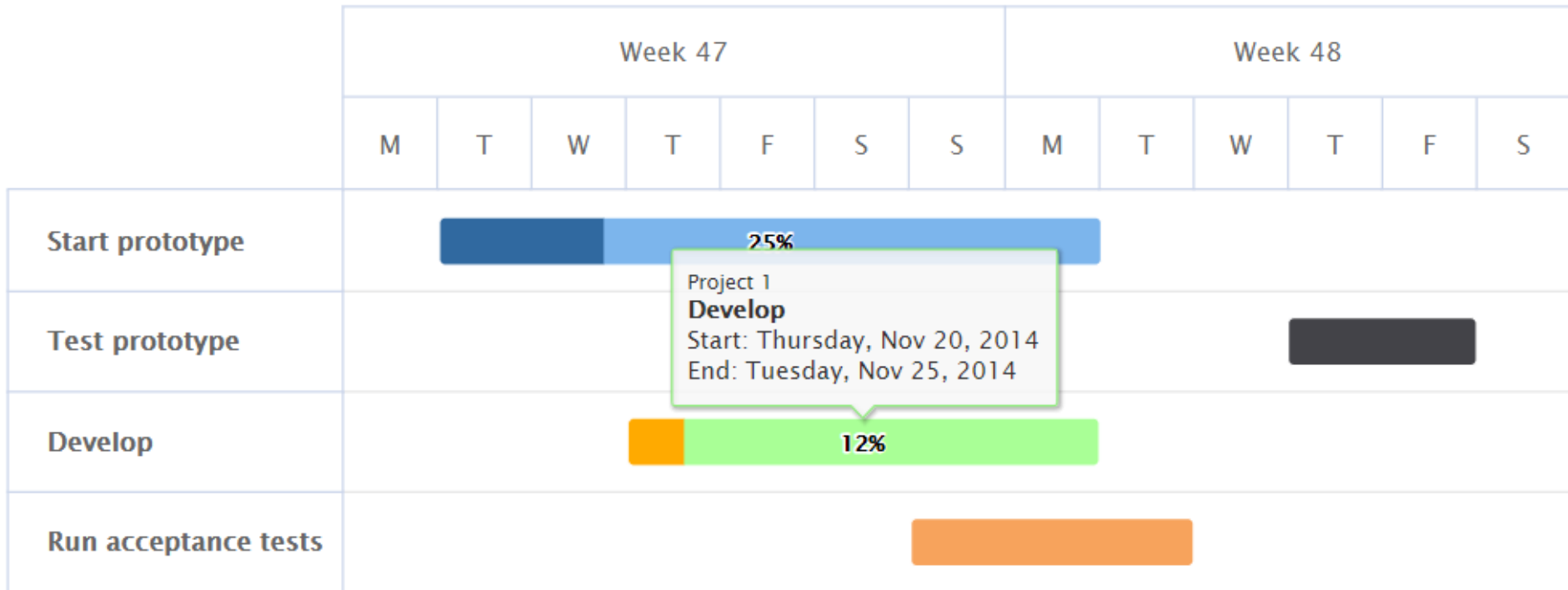
Highcharts Stock >

Create stock or general timeline charts for your web and mobile apps.

Features sophisticated navigation, annotation and client-side analytics with over 40 built-in Technical Indicators.

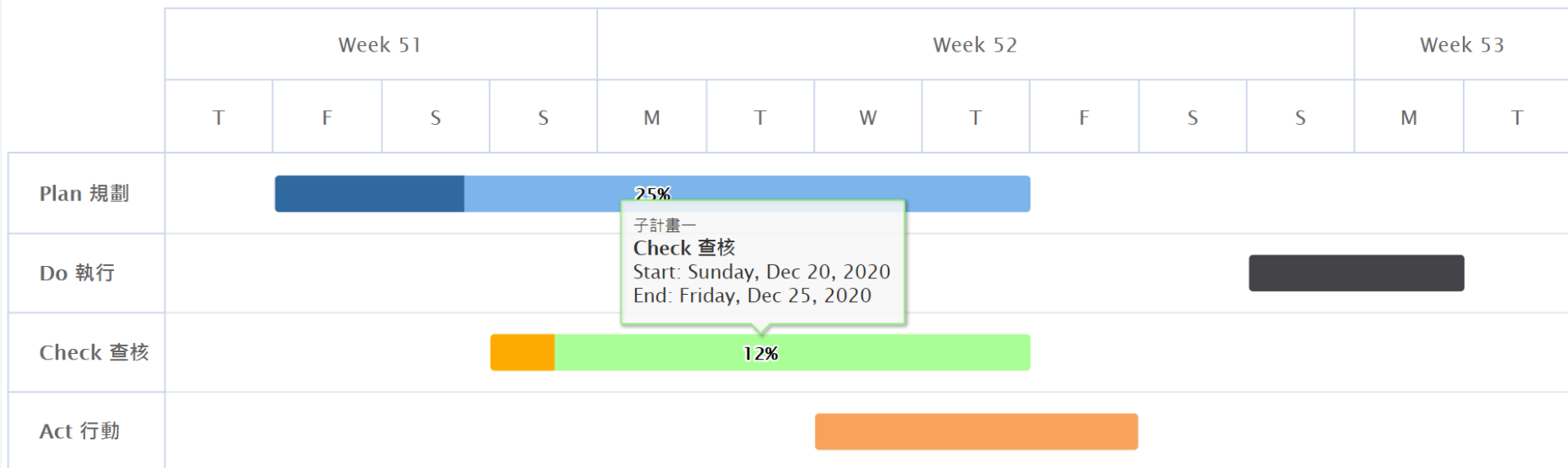
 Download  Demo

Gantt Chart with Progress Indicators



Highcharts.com

甘特圖



Highcharts.com

也可參考

<https://developers.google.com/chart/interactive/docs/gallery/ganttchart>

SECTION V

TOOLS

Main Difference

In most cases, ...

Freehand

Raw Data

computing

Chart Data

JavaScript
HTML

Chart

With Tools

suite

\$\$\$ / public

SECTION V-A

INFOGRAM

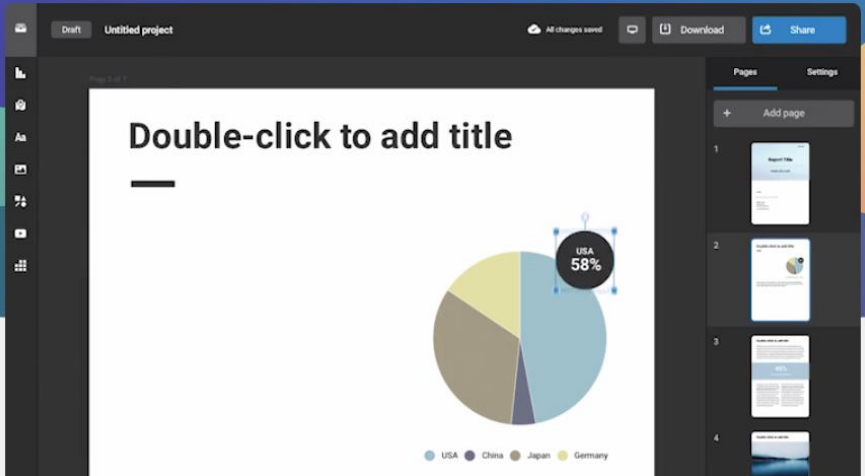
Create ▾ Examples ▾ Solutions ▾ Pricing Customers Blog [Log in](#) [Get started](#)

Create engaging infographics and reports in minutes

Infogram is an intuitive visualization tool that empowers people and teams to create beautiful content.

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Design with ease • Collaborate in real-time • Download, share, and publish online



The image shows a screenshot of the Infogram web application interface. The main workspace displays a pie chart with four segments: USA (blue, 58%), China (dark blue), Japan (grey), and Germany (yellow). A text box above the chart says "Double-click to add title". The right sidebar shows a "Pages" panel with a list of four report templates. The top navigation bar includes links for "Create", "Examples", "Solutions", "Pricing", "Customers", and "Blog", along with "Log in" and "Get started" buttons.

[支援](#)

需註冊 (選免費者 有多重限制)

Find the plan that's right for you

		Best value		
Basic	Pro	Business	Team	Enterprise
Get started for free to see how easy it is to design beautiful data visualizations with Infogram.	For those who want to download, share privately, and access premium templates and images.	Everything you get with Pro plus upload your brand kit (logo, palette, font, and images), use a larger library, and create unlimited pages per project.	Everything you get with Business, plus team collaboration. Single team functionality starting with 3 users, including support and training.	Unlock the full power of Infogram for your business. Receive custom designs, branded profile and subdomain, priority support, and tailored training for your team.
Free	\$19 / month	\$67 / month	\$149 / month	 ☎ +1 650 729 1672
Forever	starting at	starting at	starting at	
Continue	Start with Pro	Start with Business	Start with Team	Contact Us
✓ 37+ interactive charts types ✓ Up to 10 projects ✓ Up to 5 pages per project ✓ 13 map types ✓ Publish your content online ✓ Import data ✓ Object animations	All Basic features, plus: ✚ ✓ Up to 100 projects ✓ Up to 10 pages per project ✓ 100+ premium templates ✓ 550+ map types ✓ 1 million images and icons available ✓ Set your favorite colors, fonts, and images ✓ Download HD images and videos ✓ Privacy control	All Pro features, plus: ✚ ✓ Up to 1,000 projects ✓ Unlimited pages per project ✓ Your brand logo, color palette, fonts, and image assets ✓ Your own logo ✓ Basic analytics ✓ SQL Connectors, Iframe integrations ✓ Version history ✓ Callouts, custom links and page linking	All Business features, plus: ✚ ✓ Up to 3,000 projects ✓ Single team functionality starting with 3 users ✓ Real-time collaboration ✓ Commenting ✓ Engagement analytics ✓ Tracking links ✓ Training	All Team features, plus: ✚ ✓ Up to 10,000+ projects ✓ Branded public profile and subdomain ✓ Multiple team functionality starting with 10 users ✓ Advanced training & dedicated account manager ✓ First Priority support ✓ Custom design implementation and team templates ✓ Export interactive charts and maps for offline use.

9大類 73種

Free templates to get started

More beautiful templates are available with Infogram's premium plans

Single chart



Blank template



Column Chart



Line Chart



Table Chart



Pictorial Bar Chart



Radial Chart



Semi circle Chart



Funnel Chart



Column Stacked Chart



Bar Chart



Pie Chart



Wordcloud Chart



Doughnut Chart



Pictorial Chart



Column Grouped Chart



Bar Stacked Chart

Single map



Blank template



World Map



USA Map



Africa Map



Europe Map



South America Map



Asia Map



Oceania Map



North America Map

<https://infogram.com/web-search-trends-of-implementing-the-patient-autonomy-act-in-taiwan-1h7g6k0p9myki2o>

示範

Word Cloud

單篇論文用字頻率分析



Yang PC, Shih MJ, Liu YA, Hsu YC, Chang HT, Lin MH, Chen TJ, Chou LF, Hwang SJ.
Web search trends of implementing the Patient Autonomy Act in Taiwan. Healthcare
(Basel) 2020 Sep 21;8(3):353.

SECTION V-B

TABLEAU PUBLIC



資料敘事

透過我們提供的免費平台，輕鬆建立出色的互動式視覺化內容，完全不必編寫程式碼。



進行對話

與世界各地的作者交流。在個人網站、部落格或社交媒體中嵌入視覺化內容。



獲得靈感

探索全球最龐大的視覺化資料庫 (含有超過 100 萬種使用者產生的可能性) 並進行互動。

tableau public

圖庫 作者 部落格 資源 活動 關於  



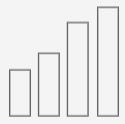
Chen TJ  編輯

[0 視覺化項](#) [0 追蹤](#)

檢視設定檔

我 其他人

[視覺化項 0](#) [追蹤 0](#) [我的最愛 0](#)



建立視覺化項

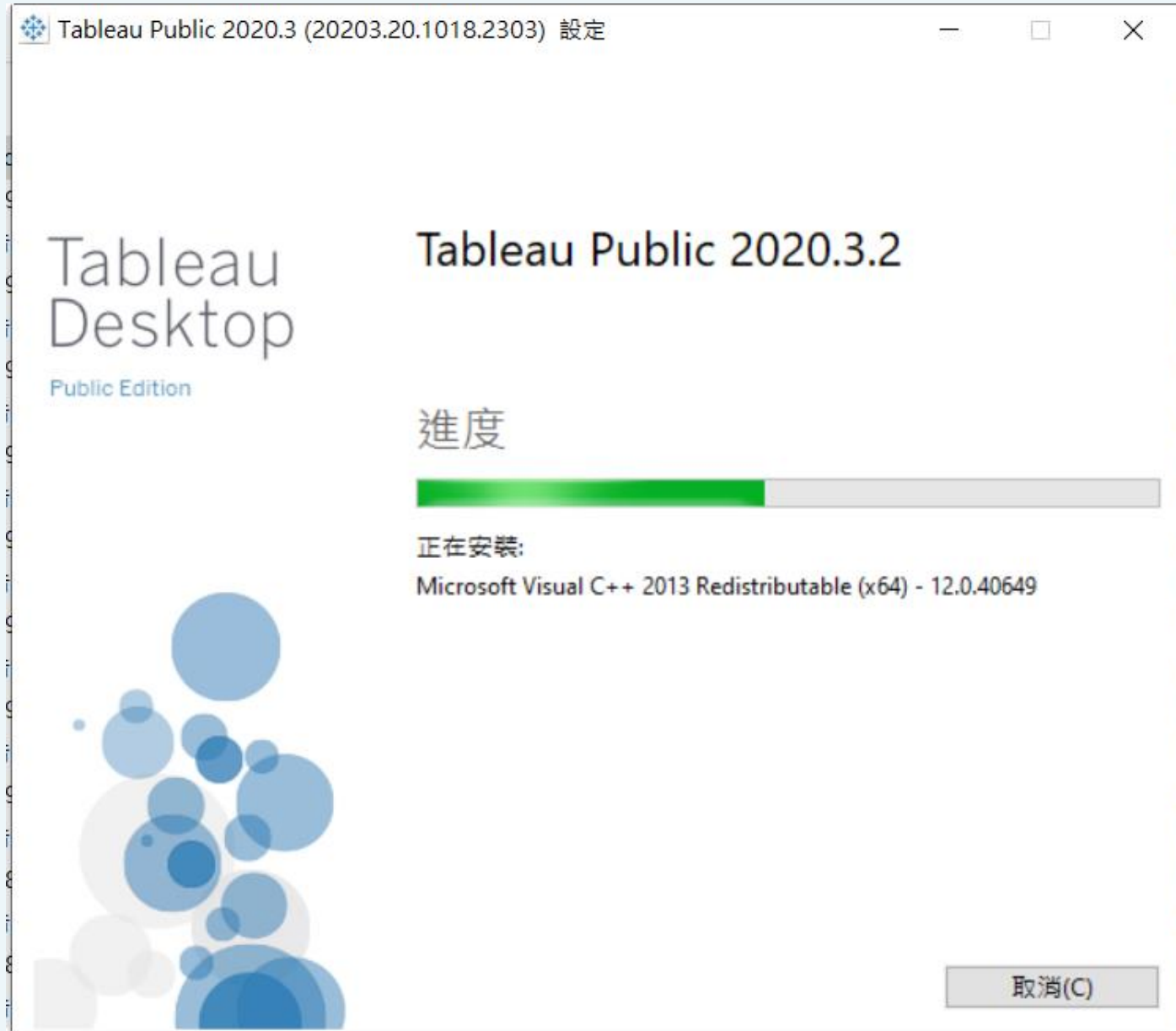
下載桌面應用程式以建立視覺化項並儲存您的個人資料。需要一些資料嗎？請開始使用我們的樣本資料集。

 下載應用程式

探索樣本資料

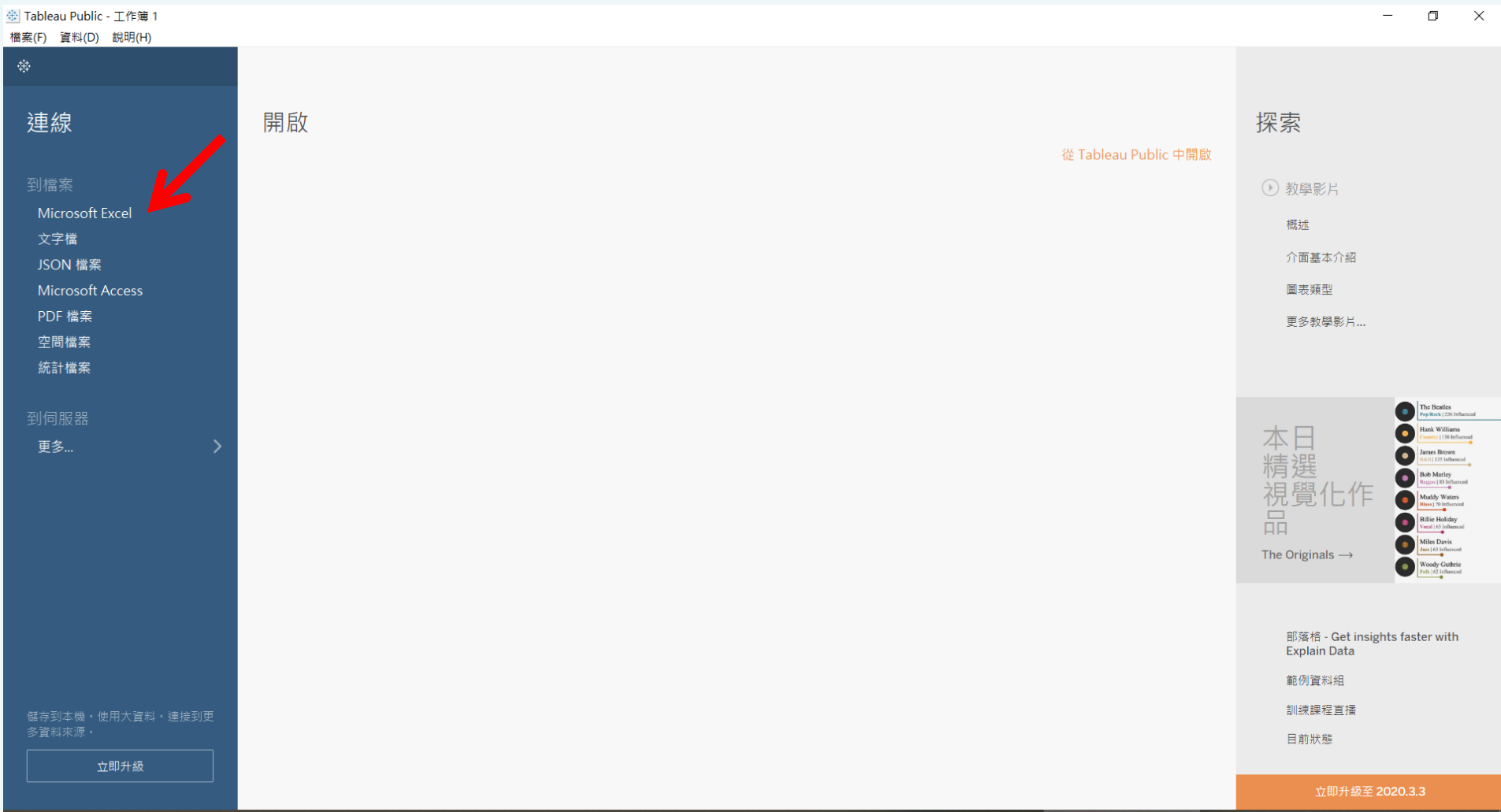
先安裝桌面版 (TableauPublicDesktop-64bit-2020-3-2.exe)

示範



桌面版起始畫面 => 匯入資料檔

示範



匯入資料檔後畫面 => 切換至 工作表

示範

Tableau Public - 工作簿 1

檔案(F) 資料(D) 視窗(N) 說明(H)

連線 新增

2017Donation_Treemap
Microsoft Excel

工作表
2017Donation_Treemap

新建並集

2017Donation_Treemap(2017Donation_Treemap)

篩選條件
0 新增

2017Donation_Treemap

需要更多資料?
將資料表拖曳到這裡以建立關聯。深入瞭解

排序欄位 資料來源順序

☐ 顯示別名 ☐ 顯示隱藏欄位 1,000 列

2017Donation!Treemap Group	2017Donati... Name	2017Donatio... Money
Gr. 1 (>= 100,000)	1	500,000
Gr. 1 (>= 100,000)	2	500,000
Gr. 1 (>= 100,000)	3	500,000
Gr. 1 (>= 100,000)	4	500,000
Gr. 1 (>= 100,000)	5	200,000
Gr. 1 (>= 100,000)	6	200,000
Gr. 1 (>= 100,000)	7	100,000
Gr. 1 (>= 100,000)	8	100,000
Gr. 1 (>= 100,000)	9	100,000
Gr. 1 (>= 100,000)	10	100,000
Gr. 1 (>= 100,000)	11	100,000

前往工作表

資料來源 工作表 1

資料來源：

Hsu YC, Chu FY, Chen TJ, Chou LF, Chang HT, Lin MH, Hwang SJ.

Lots of little ones: analysis of charitable donations to a hospice and palliative care unit in Taiwan. 117

International Journal of Health Planning and Management 2019 Oct;34(4):e1810-e1819.

工作表起始畫面

示範

Tableau Public - 工作簿 1

檔案(F) 資料(D) 工作表(W) 儀表板(B) 故事(T) 分析(A) 地圖(M) 格式(O) 視窗(N) 說明(H)

標準

資料 分析

2017Donation_Treemap(...)

搜尋

表

- Group
- 度量名稱
- Money
- Name
- 2017Donation_Treemap (計數)
- 度量值

篩選條件

標記

自動

顏色 大小 文字

詳細資料 工具提示

工作表 1

在此處放置欄位

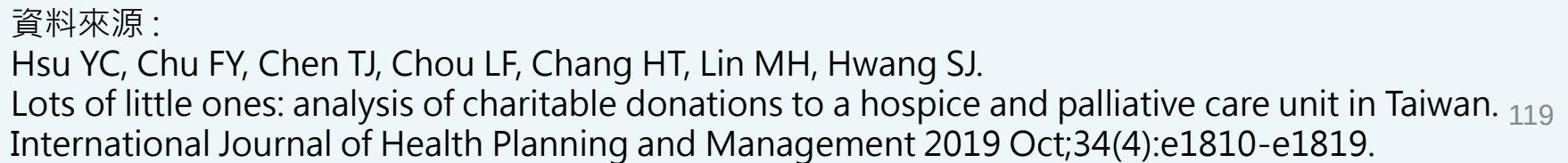
在此處放置欄位

在此處放置欄位

選擇或拖動資料
使用 Shift 或 Ctrl 鍵選擇多個欄位

資料來源 工作表 1

示範



檔案(F) / 儲存到 Tableau Public(S)... :
發布公開至 Tableau Public 網站 (需輸入 帳號與密碼)

Tableau Public Sign In

✕

+public

電子郵件

密碼

登入

此站點經過 SSL 加密

忘記密碼?
 是否還沒有設定檔?
 立即免費建立一個

將工作簿儲存到 Tableau Public

✕

工作簿標題(W)

取消
 儲存

tableau public

圖庫

作者

部落格

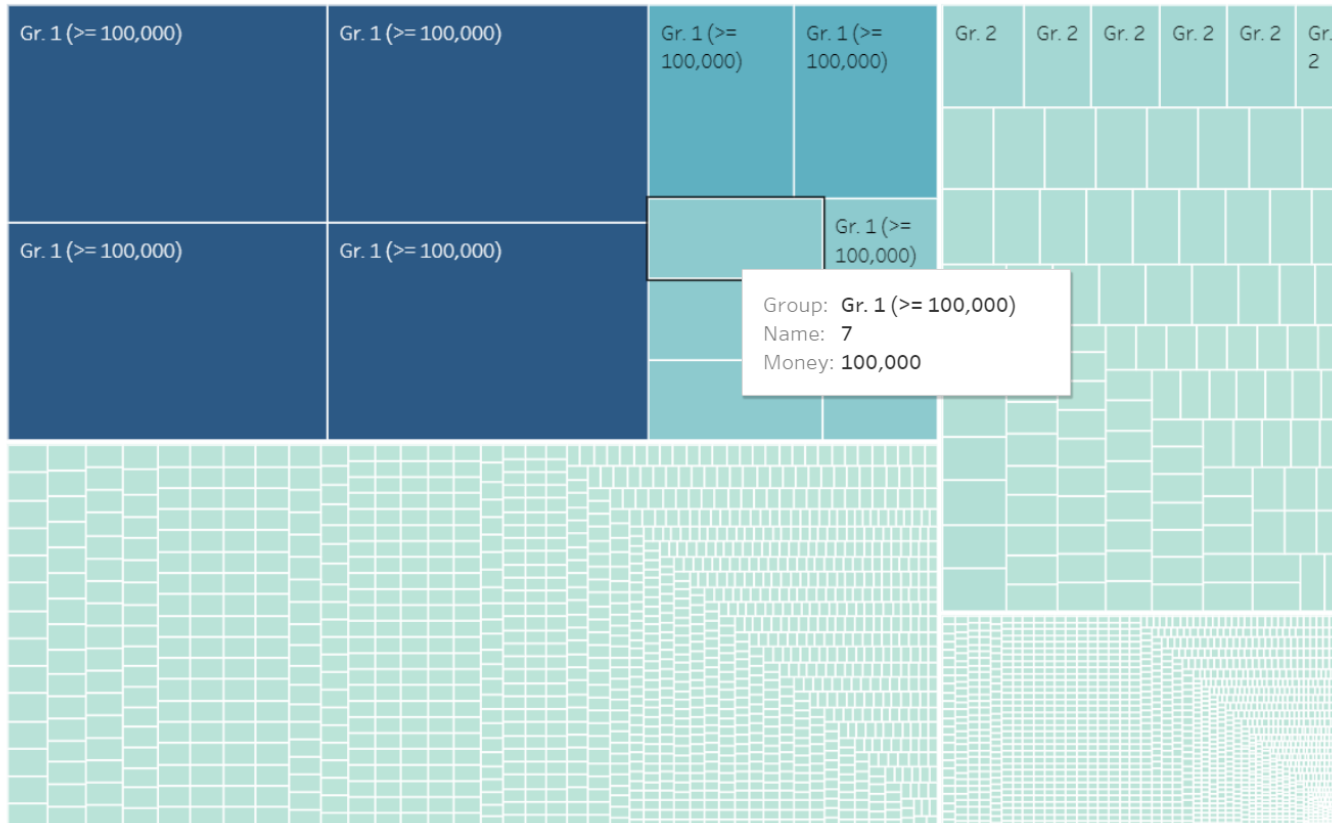
資源

活動

關於



2



tableau



2017Donation_Treemap

編輯詳細資訊

視覺效果作者: **Chen TJ**

Data Source: Hsu YC, et al: Lots of little ones: analysis of charitable donations to a hospice and palliative care unit in Taiwan. International Journal of Health Planning and Management 2019 Oct;34(4):e1810-e1819.

5 檢視 ☆ 0

SECTION V-C

CHART STUDIO

<https://plotly.com/chart-studio/>



Products ▾

Docs ▾

Company ▾

Gallery

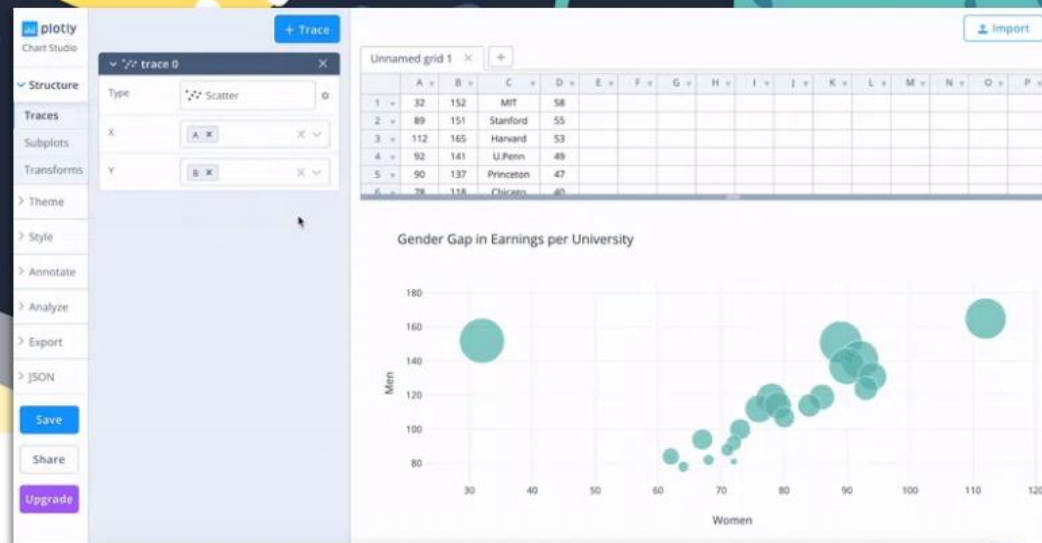
GET A DEMO

Chart Studio

Chart Gallery

Sign in to Chart Studio Cloud

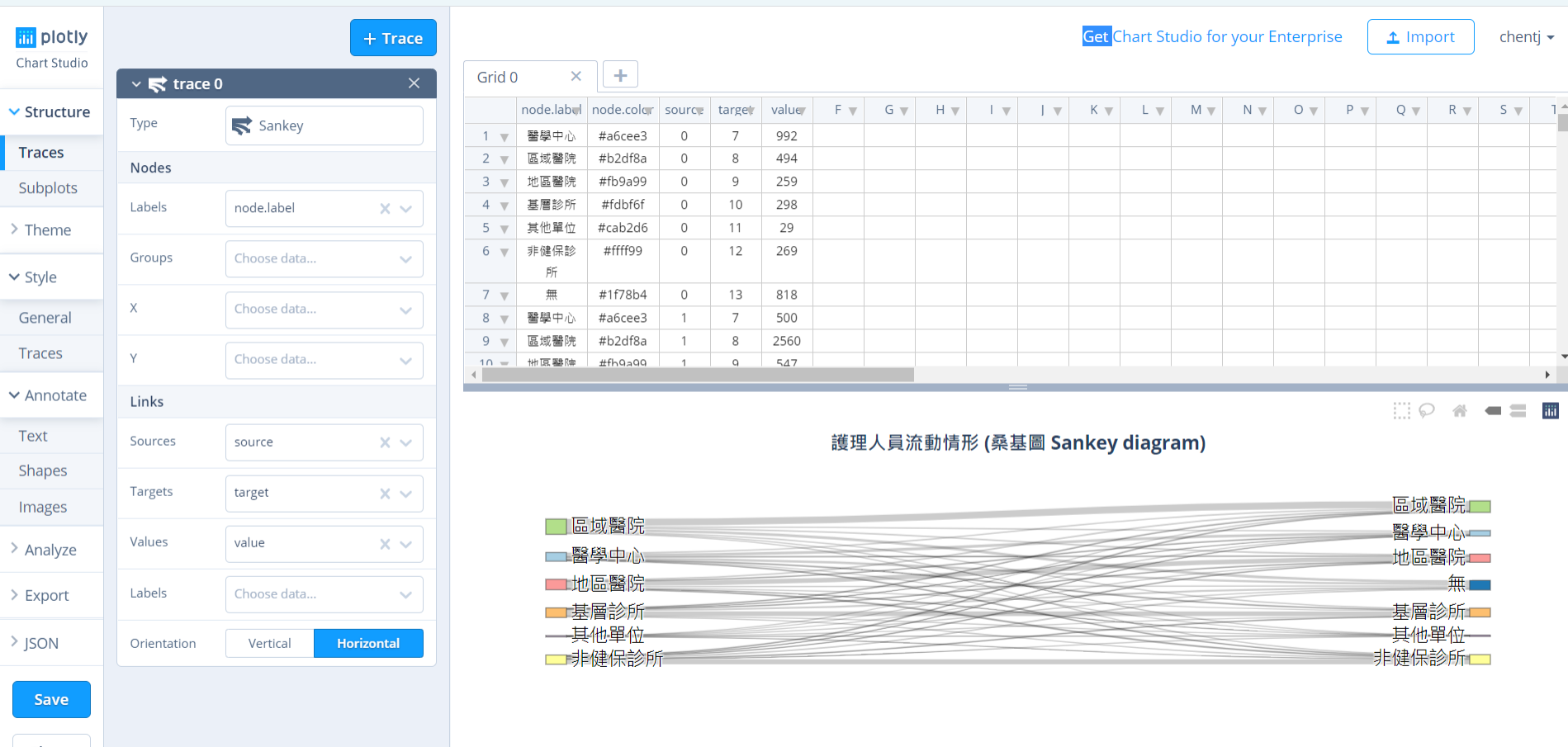
Tutorials



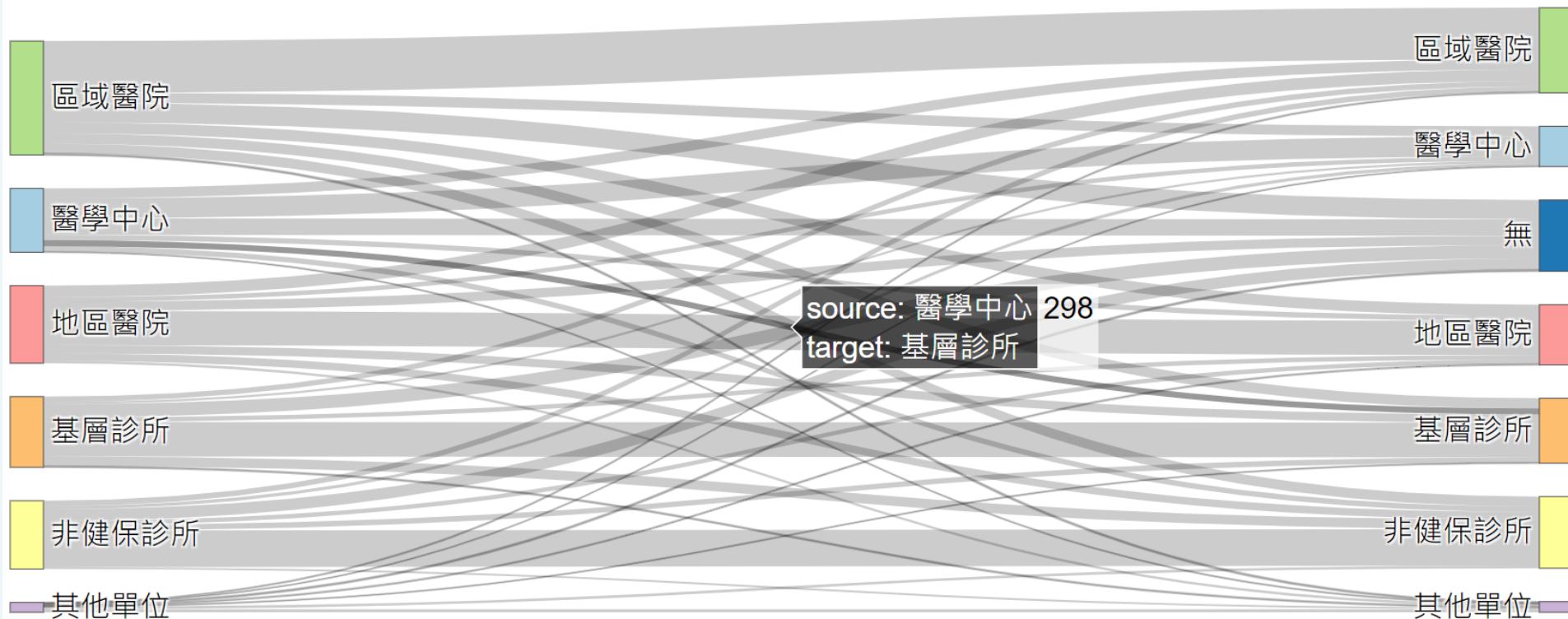
The fastest way to create interactive
charts online

需註冊 => 線上製作圖表 => 發布至 Chart Studio 網站

示範

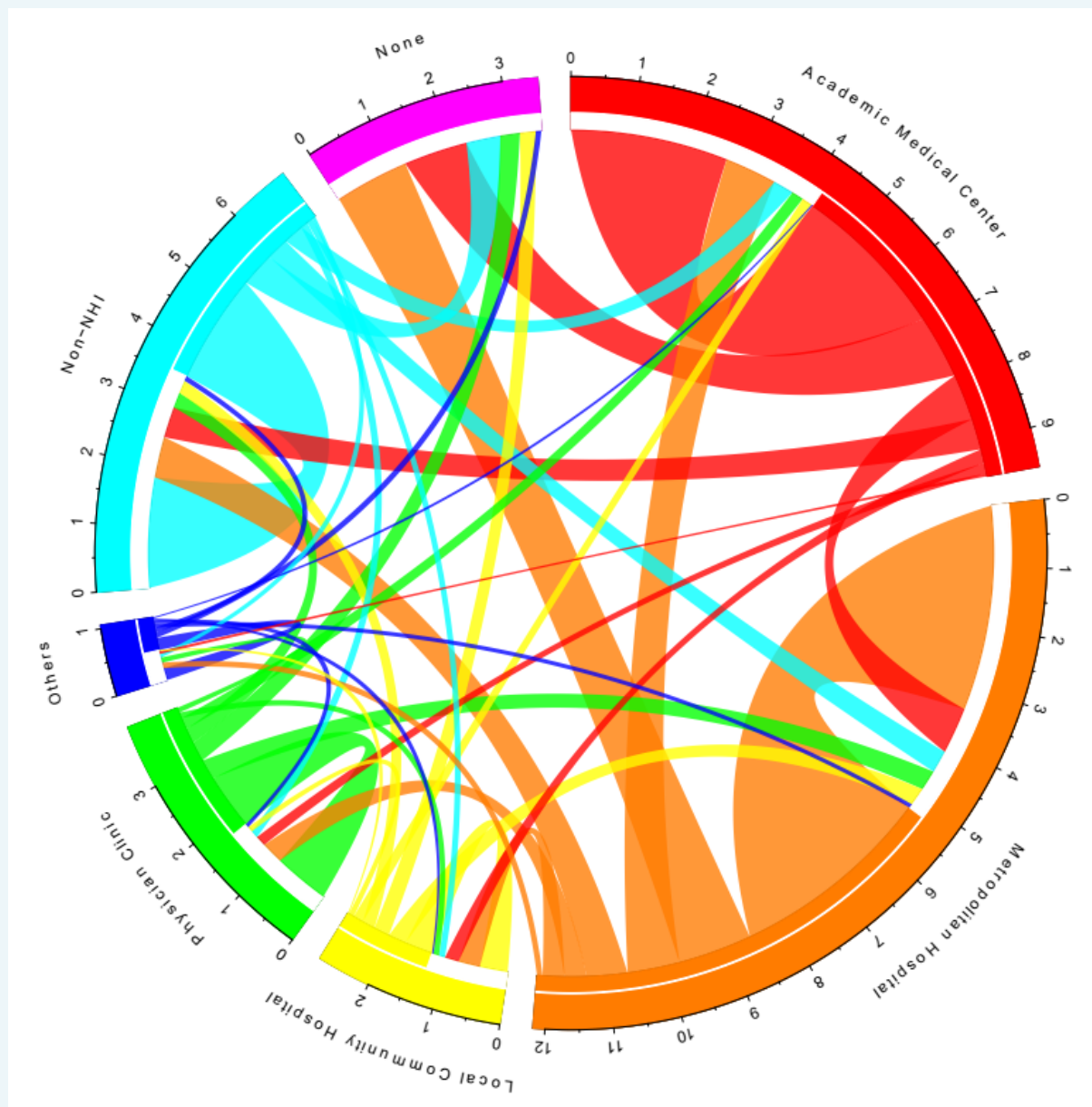


護理人員流動情形 (桑基圖 Sankey diagram)



The same data with R's migest package

插播示範比較



SECTION V-D

OTHERS (SELECTED)

Enrich your stories with charts, maps and tables.

 **START CREATING**

Gemiddelde huizenprijzen

■ € 100.000
■ € 150.000
■ € 200.000
■ € 250.000
■ € 300.000

De prijsstijging in het eerste jaar blijft in elk geval opmerkelijk. De vastgoedprijzen gaan sinds 2010 in Nederland fors omhoog. Dergelijke prijsstijging bij woonhuizen hebben we nog niet gezien. Het is niet alleen de vraagprijs die stijgt, maar ook de verkoopprijs. Dit is een goede teken voor de economie. En niet alleen klassieke vastgoedprijzen, maar ook de prijzen van andere vastgoedsoorten (zoals appartementen) zijn in de jongste jaren wel sterke prijsstijgingen gaven. Het is niet zeker of het nu echt weer een grote sprong is, gelijken van 2016, zegt de FOD Economie. Een verklaring heeft men niet.

Evolutie vastgoedprijzen

Voor deze vergelijking wordt telkens gekozen naar verkopen in het eerste semester van een bepaald jaar.

■ gemiddelde woonhuizen ■ villa's, herenhuizen en landhuizen ■ appartementen, flats en studio's



was a snowstorm in the Northeast and Midwest during the week that the BLS does its survey, which kept some workers at home. Additionally, the “retail apocalypse” of announced store closings meant that more jobs than normal left the economy during the month. This month, the disappointing March number was revised down from 98,000 to 79,000. But the April jobs report provides a bounce back in part because of warmer weather and fewer layoffs. The Labor Department reported gains in hospitality, mining, healthcare, and finance. Including the revisions for the February and March reports, an average of 174,000 jobs were added per month over the last three months.

Monthly Changes in U.S. Employment (Non-Farm), 2006-2017



Sources: Bureau of Labor Statistics | Get The Data | Sentinel

Atlantic



Data Charts

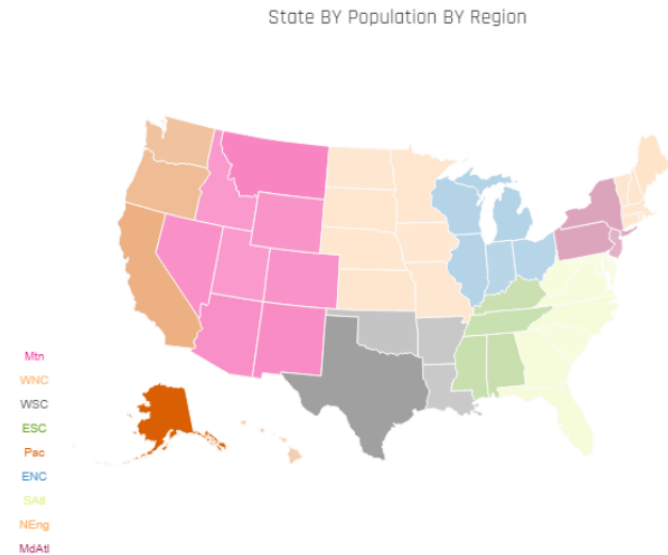
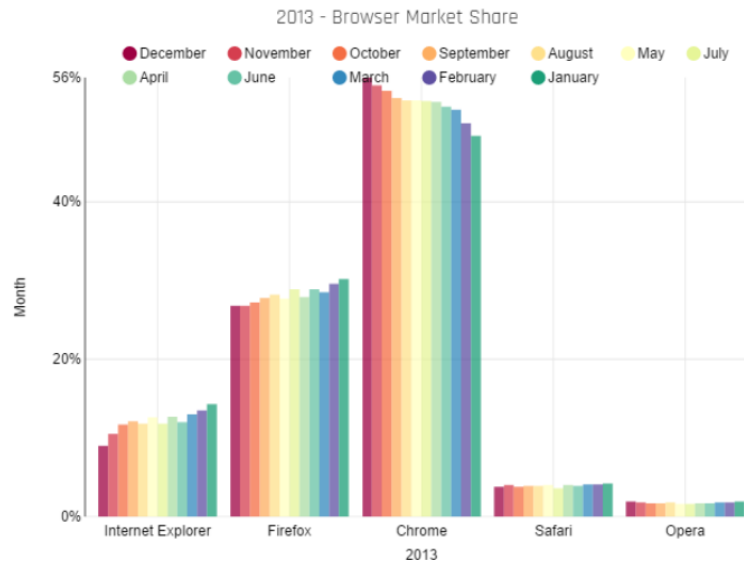
Like 159

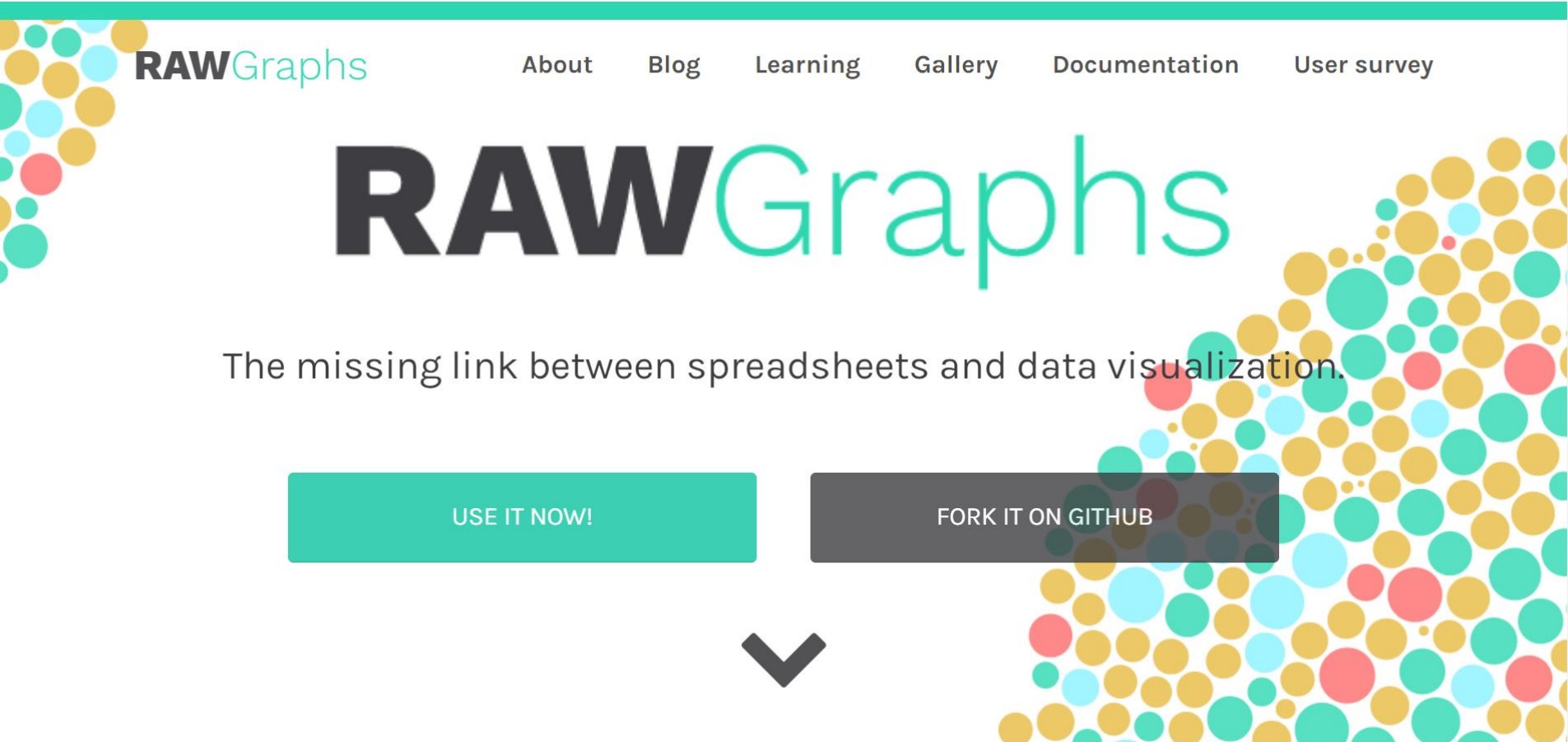
Gallery About ▾



Datacopia

Data Visualization. Reimagined.





<https://powerbi.microsoft.com/zh-tw/>

前所未有的商業智慧

只需幾分鐘，即可為資料進行深入解析。
隨處以任何方式存取所有資料。全在一個檢視中。



Power BI

產品

解決方案

合作夥伴

了解

登入

免費註冊



Microsoft 名列 2018 年 Gartner 分析與 BI 魔術象限的領導者。[閱讀部落格](#)

Power BI 是什麼？

Power BI 是一套商務分析工具，可為您的組織提供完整的深入解析。連接數以百計的資料來源、簡化資料準備，並推動特定分析。產生美觀的報表並加以發行，讓您的組織能在 Web 上及行動裝置之間加以使用。每個人都可以為自己的企業建立獨一無二且全方位的個人化儀表板。在企業中調整，且內建治理與安全性。

To be continued ...

Data Dashboards DIY

<https://marketingplatform.google.com/about/data-studio/>

Google Data Studio

Data Studio

Overview

Benefits

Features

Gallery

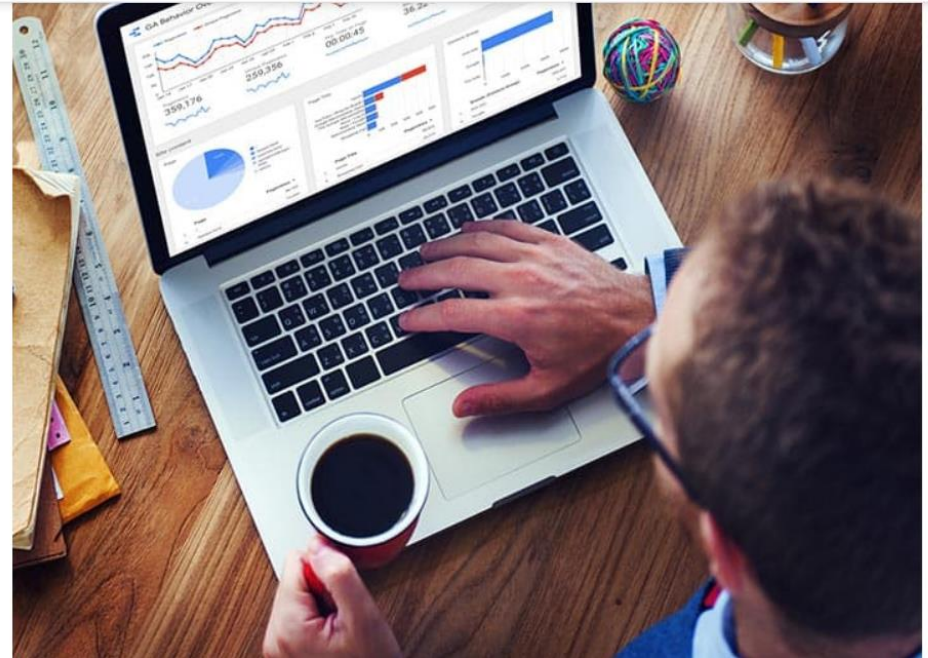
[Sign in to Data Studio](#)

[Start for free](#)

Your data is powerful. Use it.

Unlock the power of your data with interactive dashboards and engaging reports that inspire smarter business decisions. It's easy and free.

[Start for free](#)



To be continued ...

Data Dashboards DIY

SECTION VI

RESOURCES (SELECTED)

[Overview](#) [Examples](#) [Documentation](#) [API](#) [Source](#)

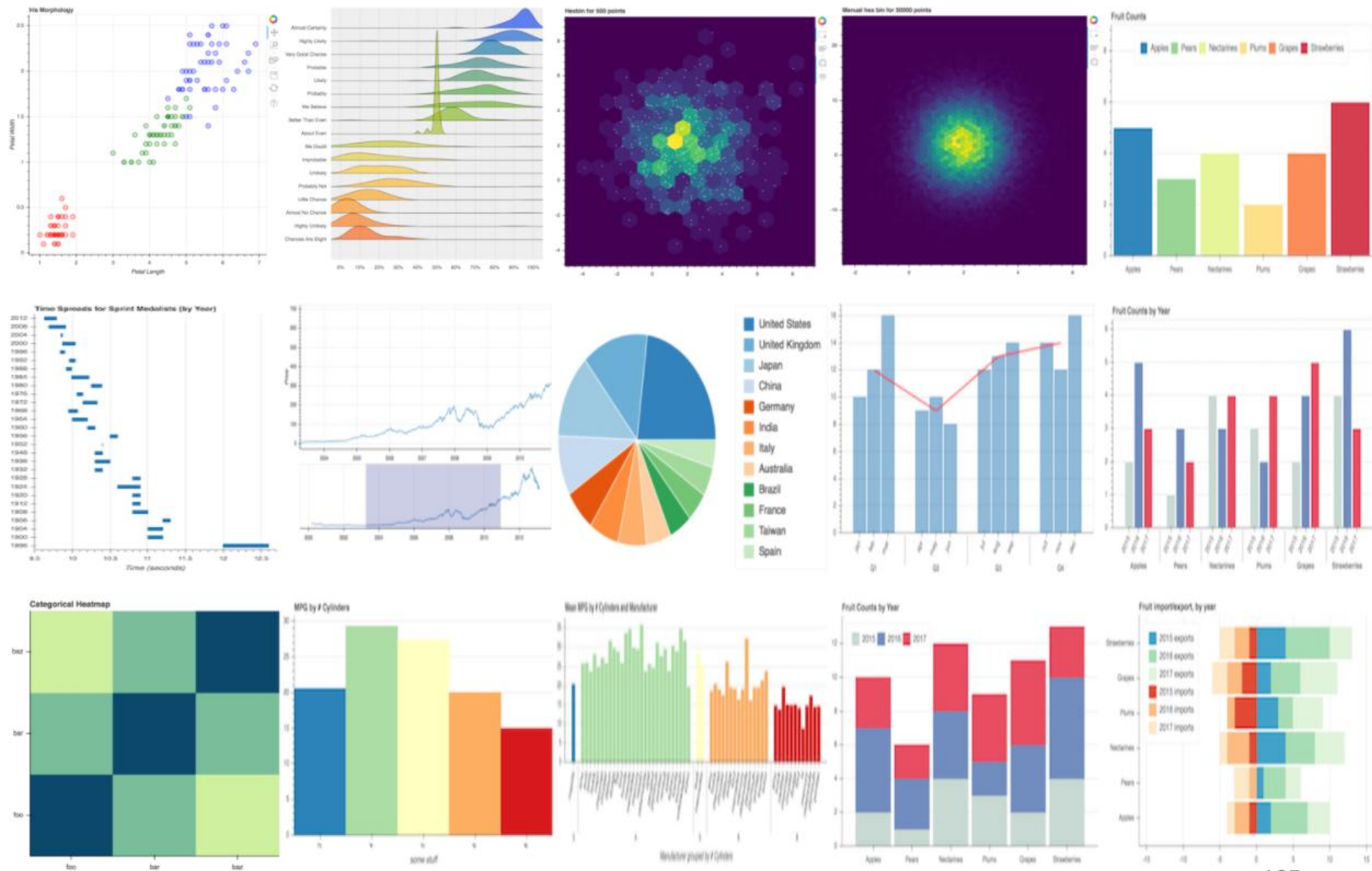
Data-Driven Documents



Like visualization and creative coding? Try interactive JavaScript notebooks in **Observable!**

D3.js is a JavaScript library for manipulating documents based on data. **D3** helps you bring data to life using HTML, SVG, and CSS. D3's emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to DOM manipulation.

<https://www.bokeh.org/>



The Data Visualisation Catalogue

[About](#) • [Blog](#) • [Shop](#) • [Resources](#)

CN 中文

ES Español

RU Русский

TR Türkçe

Search by Function

View by List



Bar Chart



Box & Whisker Plot



Brainstorm



Bubble Chart

SECTION VII

EPILOGUE



<https://pixabay.com/illustrations/end-curtain-blue-close-shot-guy-2294929/>

抉擇



<https://www.1001freedownloads.com/free-clipart/thinkingboy-outline>

眾多門派
各有所長
一招在身
行遍天下



https://zh.wikipedia.org/wiki/File:Wudangshan_pic_7.jpg



<https://zh.wikipedia.org/wiki/File:Shaolinsi.JPG>

Your Choices ?

- Original data : **local** | on the remote server
- Chart data : **local** | on the remote server
- Device : **browser** | other applications
- Programming : freehand | **no (but with tools)**
- Expense : **open-source** | **free** | with fees
- Data freshness : **static** | dynamic (with frequent updating)

Quiz (Homework)

- Is it possible to implement an interactive chart in a PowerPoint slide?

Memos

- Don't reinvent the wheel



<https://pixabay.com/illustrations/wheel-car-tyre-design-technology-4955050/>

- Stand on the shoulders of giants



<https://openclipart.org/detail/301586/fun-with-dad>

- Collaborate and share with each other

TEAM

Together

Everyone

Achieves

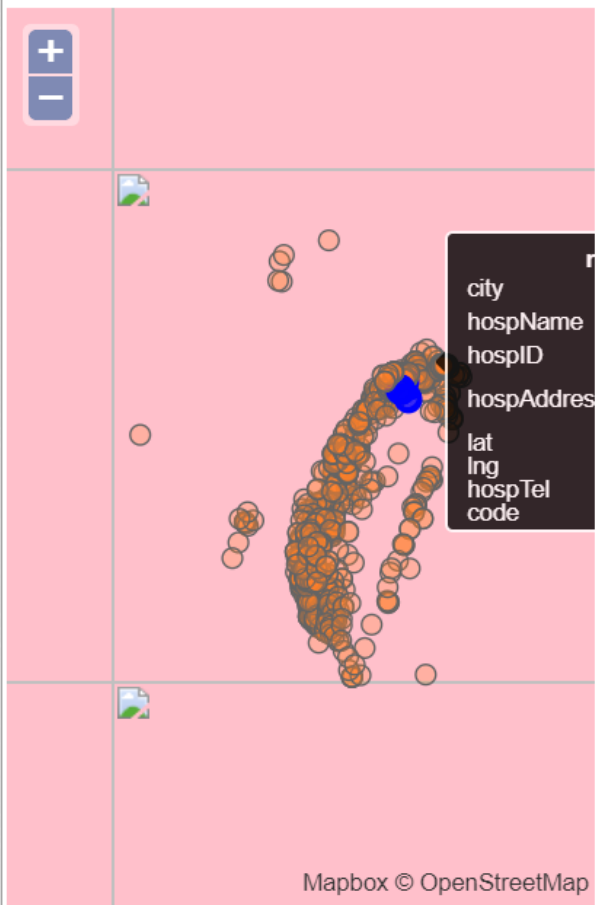
More

SECTION VIII

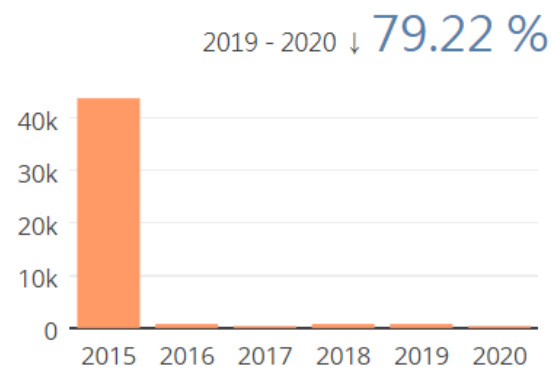
EXCURSUS

重點防疫資訊

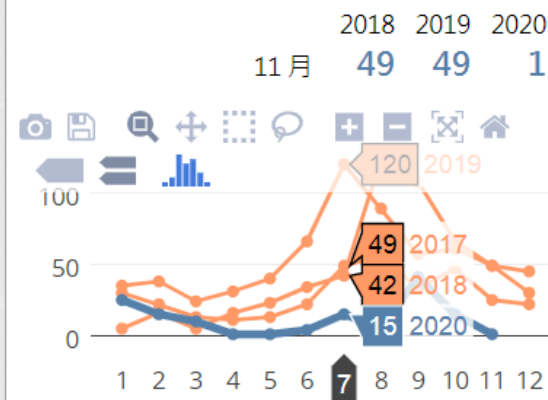
登革熱NS1快篩院所 - 資料



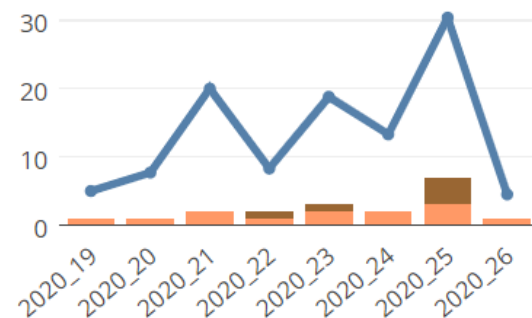
歷年登革熱病例數 - 資料



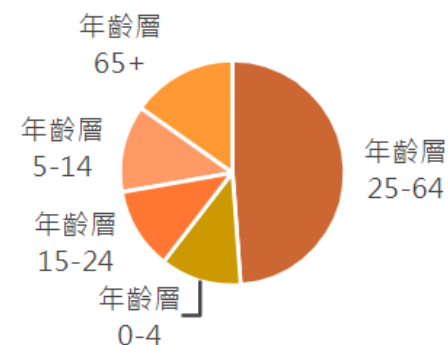
登革熱年月病例數 - 資料



每週腸病毒病毒分離 - 資料



今年健保門診腹瀉年齡層 - 資料



檢視網頁原始碼

<https://data.cdc.gov.tw/fanstatic/vendor/:version:2018-02-05T14:47:40.35/jquery.min.js>

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1065 </html>
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