

# 18.Chart.js



sweetcake

## 1. 安裝方法

參考 <https://www.chartjs.org/>

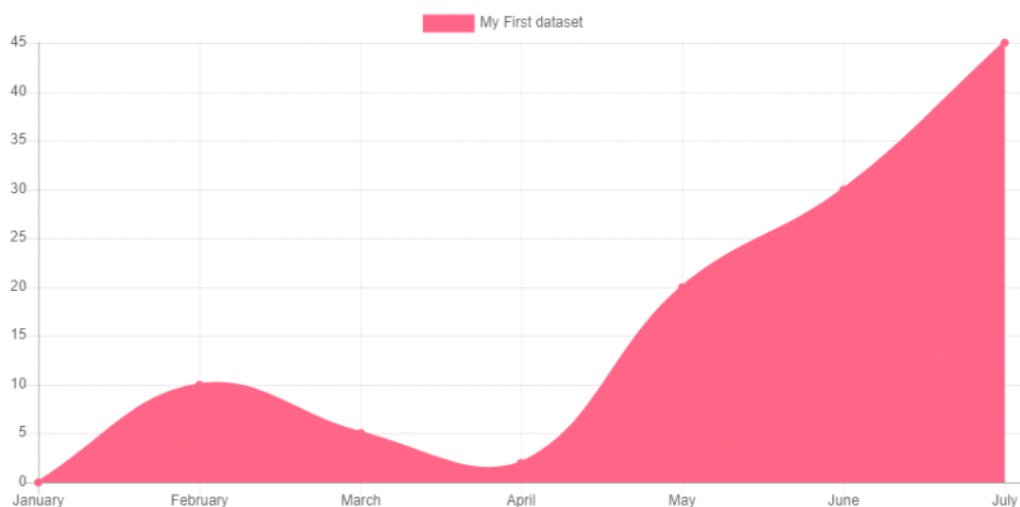
```
<!-- Chart.js v2.4.0 -->  
<script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.4.0/Chart.min.js">  
</script>
```

## 2. 官網範例

```
<canvas id="myChart"></canvas>
```

```
var ctx = document.getElementById('myChart').getContext('2d');  
var chart = new Chart(ctx, {  
  // The type of chart we want to create  
  type: 'line',  
  // The data for our dataset  
  data: {  
    labels: ["January", "February", "March", "April", "May", "June", "July"],  
    datasets: [{  
      label: "My First dataset",  
      backgroundColor: 'rgb(255, 99, 132)',  
      borderColor: 'rgb(255, 99, 132)',  
      data: [0, 10, 5, 2, 20, 30, 45],  
    }]  
  },  
  // Configuration options go here  
  options: {}  
});
```

來自 <https://www.chartjs.org/docs/latest/getting-started/>



## 3. 動態產生圖表

在後台可以圖表將複雜的資料顯示得更清楚

首先必須要具備一個api 可以提供資料

撈取並統計以下資料庫，統計並輸出各個縣市有多少人

←T→	ID	Name	Addr	money
<input type="checkbox"/>	1	richie01	台北市	200
<input type="checkbox"/>	2	richie02	台北市	177
<input type="checkbox"/>	3	richie02	台北市	750
<input type="checkbox"/>	4	richie02	台北市	505
<input type="checkbox"/>	5	richie03	台北市	666
<input type="checkbox"/>	6	richie04	台北市	20
<input type="checkbox"/>	7	richie05	台中市	504
<input type="checkbox"/>	8	richie06	台中市	11
<input type="checkbox"/>	9	richie07	台中市	9
<input type="checkbox"/>	10	richie08	台中市	5
<input type="checkbox"/>	11	richie09	台南市	200
<input type="checkbox"/>	12	richie10	台南市	530
<input type="checkbox"/>	13	richie11	台南市	966
<input type="checkbox"/>	14	richie12	高雄市	333
<input type="checkbox"/>	15	richie13	高雄市	444
<input type="checkbox"/>	16	richie14	高雄市	11
<input type="checkbox"/>	17	richie11	基隆市	12
<input type="checkbox"/>	18	richie00	彰化縣	50
<input type="checkbox"/>	19	richie20	彰化縣	900
<input type="checkbox"/>	20	richie00	新北市	500
<input type="checkbox"/>	21	Tom	花蓮市	530

撰寫後端API來提供各個縣市的人數

輸出的欄位名稱為 region

SELECT count(Addr) as region, Addr FROM userdata GROUP BY Addr

```

if($_POST["type"] == "addr"){
    $sql = "SELECT count(Addr) as region, Addr FROM userdata GROUP BY Addr";
    $result = mysqli_query($conn, $sql);

    $mydata = Array();
    $row = mysqli_fetch_assoc($result);
    if (mysqli_num_rows($result) > 0) {
        do{
            $mydata[] = $row;
        }while($row = mysqli_fetch_assoc($result));
        echo json_encode($mydata);
    } else {
        echo "0 results";
    }
}

}else if($_POST["type"] == "sum"){

```

POST http://localhost/sweetcake/data.php No Environment

http://localhost/sweetcake/data.php

POST http://localhost/sweetcake/data.php Send

Params Authorization Headers Body Pre-request Script Tests Cookies Code

none form-data x-www-form-urlencoded raw binary

KEY	VALUE	DESCRIPTION
<input checked="" type="checkbox"/> type	addr	
Key	Value	Description

Body Cookies Headers (7) Test Results Status: 200 OK Time: 513 ms Size: 568 B

Pretty Raw Preview JSON

```

1 - [
2   {
3     "region": "4",
4     "Addr": "台中市"
5   },
6   {
7     "region": "6",
8     "Addr": "台北市"
9   },
10  {
11    "region": "3",
12    "Addr": "台南市"
13  },
14  {
15    "region": "1",
16    "Addr": "基隆市"
17  },
18  {
19    "region": "2",
20    "Addr": "彰化縣"
21  },
22  {
23    "region": "1",
24    "Addr": "新北市"
25  },
26  {
27    "region": "1",
28    "Addr": "花蓮市"
29  },
30  {
31    "region": "3",
32    "Addr": "高雄市"
33  },
34 ]

```

#### 4. 更新chartjs

參考 <https://www.chartjs.org/docs/latest/developers/updates.html>

Scatter Area Mixed Axes Cartesian Category Linear Logarithmic Time Radial Linear Labelling Styling Developers Chart.js API **Updating Charts** Plugins New Charts New Axes Contributing Additional Notes Comparison Table Popular Extensions License

### Updating Charts

It's pretty common to want to update charts after they've been created. When the chart data or options are changed, Chart.js will animate to the new data values and options.

#### Adding or Removing Data

Adding and removing data is supported by changing the data array. To add data, just add data into the data array as seen in this example.

```

function addData(chart, label, data) {
  chart.data.labels.push(label);
  chart.data.datasets.forEach((dataset) => {
    dataset.data.push(data);
  });
  chart.update();
}

function removeData(chart) {
  chart.data.labels.pop();
  chart.data.datasets.forEach((dataset) => {
    dataset.data.pop();
  });
  chart.update();
}

```

#### Updating Options

<https://www.chartjs.org/docs/latest/developers/api.html>

以ajax取得 api資料後再將資料欄位更新

chart.data.labels.push(data[i].Addr);

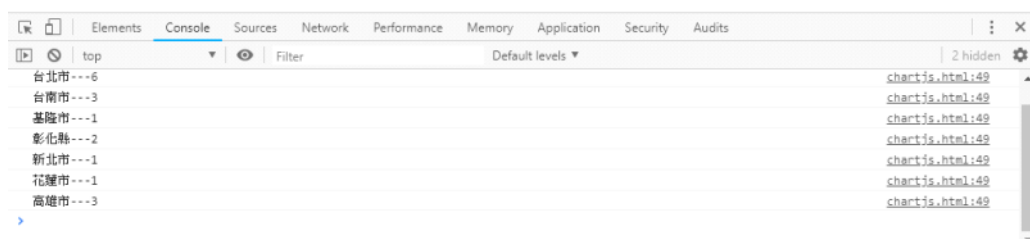
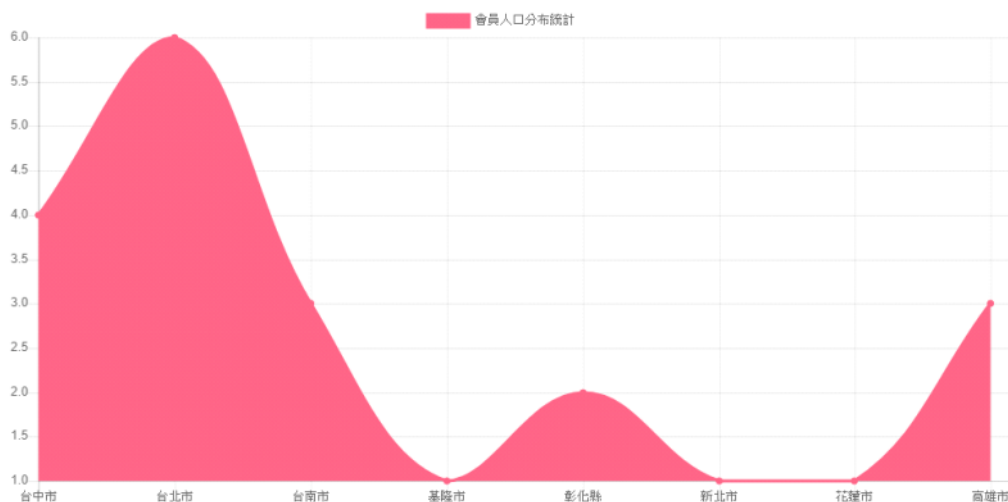
chart.data.datasets[0].data.push(data[i].region);

更新完後重新畫圖

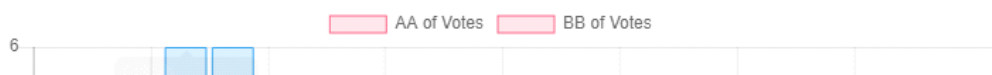
chart.update();

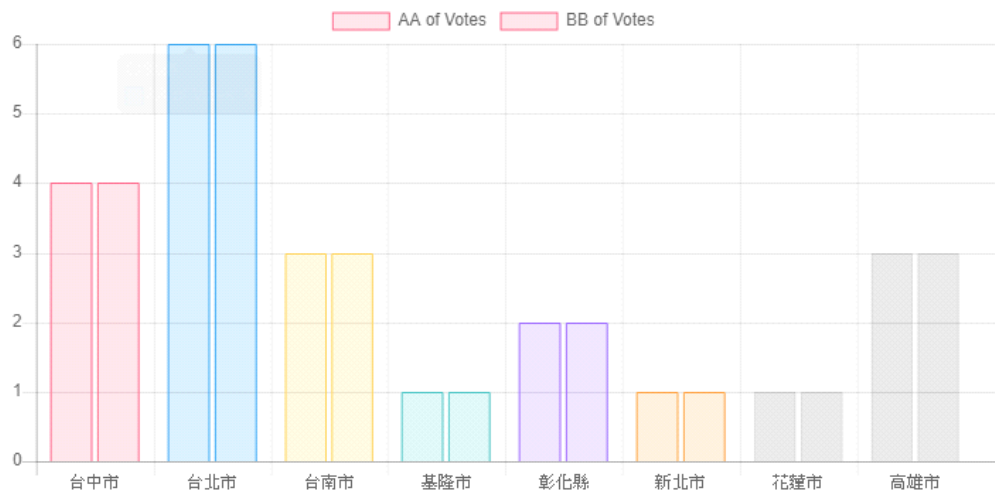
```
$.ajax({
  type: "POST",
  url: "http://localhost/sweetcake/data.php",
  data:{type: "addr"},
  dataType: "json",
  success: showdata,
  error: function(){
    alert("chart error");
  }
});

function showdata(data){
  chart.data.labels= [];
  chart.data.datasets[0].data = [];
  chart.data.datasets[0].label = "會員人口分布統計";
  for(i=0; i< data.length; i++){
    chart.data.labels.push(data[i].Addr);
    chart.data.datasets[0].data.push(data[i].region);
    console.log(data[i].Addr+'---'+data[i].region);
  }
  chart.update();
}
</script>
```



## 5. 以長條圖為例練習!





## 6. 以圓餅圖為例練習

