

# reservoir

- 一次 update 一筆水庫的資料
- Example:

```
def update_reservoir(id, amount, percentage, time):  
    key = 'reservoir' + str(id)  
    dic = {  
        key: {  
            'amount': amount,  
            'percentage': percentage,  
            'time': time  
        }  
    }  
    collection_reservoir.document('last').update(dic)
```

```
update_reservoir(3, 3794.64, 32.76, '2023-04-20 07:00:00')
```



```
▼ reservoir3  
  amount: 3794.64  
  percentage: 32.76  
  time: "2023-04-20 07:00:00"
```

# electricity

- update\_region: 一次 update 一個區域的資料
- Example:

```
update_region('all', 3157.8, 3598, 3157.8, 1361, 23202673)
```



▼ region

▼ all

```
avg_usage_per_person: 3157.8
estimated_supply: 3598
real_time_generation: 3157.8
real_time_usage: 1361
supplied_population: 23202673
```

▼ east

```
avg_usage_per_person: 40.6
estimated_supply: "電網系統與中南部共用"
real_time_generation: 8.5
real_time_usage: 729
supplied_population: 557162
```

```
def update_region(region, avg_usage_per_person, estimated_supply, real_time_generation, real_time_usage, supplied_population):
    key = 'region.' + region
    dic = {
        key: {
            'avg_usage_per_person': avg_usage_per_person,
            'estimated_supply': estimated_supply,
            'real_time_generation': real_time_generation,
            'real_time_usage': real_time_usage,
            'supplied_population': supplied_population
        }
    }
    collection_electricity.document('last').update(dic)
```

# electricity

- Example:

```
update_storage_rate(11.05)  
update_time('112.04.21(五)14:10')
```



```
def update_storage_rate(storage_rate):  
    dic = {'storage_rate': storage_rate}  
    collection_electricity.document('last').update(dic)  
  
def update_time(update_time):  
    dic = {'update_time': update_time}  
    collection_electricity.document('last').update(dic)
```

```
storage_rate: 11.05
```

```
update_time: "112.04.21(五)14:10"
```

# earthquake

- Document: 0-9, 0 為最新的一筆資料
- 每次更新會把原本的資料往下推 (id + 1)
- 最多到 9, id 超過 9 → 不再紀錄
- 因避免 input argument 太多, 直接 input dictionary
- Example: 下頁

```
def update_earthquake(dic):
    old = []
    for doc in docs:
        old.append(doc.to_dict())
    if len(old) <= 9:
        for i in range(len(old)):
            new_id = i+1
            collection_earthquake.document(str(new_id)).set(old[i])
    else:
        for i in range(9):
            new_id = i+1
            collection_earthquake.document(str(new_id)).set(old[i])
    collection_earthquake.document('0').set(dic)
```

# earthquake

```
dic = {
  'each_location': {
    'south': {'PGA': '0', 'PGV': '0'},
    'middle': {'PGA': '0', 'PGV': '0'},
    'north': {'PGA': '0', 'PGV': '0'}
  },
  'time': '2023-04-20 7:00:00',
  'scale': '4',
  'depth': '最新資料',
  'magnitude': '6.3',
  'geopoint': '北緯,東經',
  'location': '東北方'
}

update_earthquake(dic)
```

The screenshot shows the 'earthquake' application interface. On the left, a file list contains two items: '0' and '1'. Item '0' is selected and highlighted with a red box. The main panel on the right displays the details for item '0'. The details are organized into a tree structure: 'depth' is '8km', 'each\_location' contains 'middle' and 'north' (both with 'PGA: "0"' and 'PGV: "0"'), and 'south' (with 'PGA: "0"' and 'PGV: "0"'). Other fields include 'geopoint: "北緯,東經"', 'location: "東北方"', 'magnitude: "6.3"', and 'scale: "4"'. A large blue arrow points from the code editor above to the '0' item in the file list.

The screenshot shows the 'earthquake' application interface after an update. The file list on the left now contains three items: '0', '1', and '2'. Item '0' is selected and highlighted with a red box. The main panel on the right displays the details for item '0'. The details are organized into a tree structure: 'depth' is '最新資料', 'each\_location' contains 'middle' and 'north' (both with 'PGA: "0"' and 'PGV: "0"'), and 'south' (with 'PGA: "0"' and 'PGV: "0"'). Other fields include 'geopoint: "北緯,東經"', 'location: "東北方"', 'magnitude: "6.3"', and 'scale: "4"'. A red arrow points from the code editor above to the '0' item in the file list.