

# 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

```
...
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': '5km',
    'magnitude': '6.3',
    'geopoint': '北緯,東經',
    'location': '東北方'
}
...
```

```
def update_earthquake(dic):
    for doc in docs:
        new_id = int(doc.id) + 1
        if new_id <= 9:
            collection_earthquake.document(str(new_id)).set(doc.to_dict())
        else:
            continue
    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)
```

earthquake

+ 新增文件

0

1

+ 新增集合

+ 新增欄位

depth: "8km"

▼ each\_location

▼ middle

PGA: "0"

PGV: "0"

▼ north

PGA: "0"

PGV: "0"

▼ south

PGA: "0"

PGV: "0"

geopoint: "北緯,東經"

location: "東北方"

magnitude: "6.3"

scale: "4"

earthquake

+ 新增文件

0

1

2

+ 新增集合

+ 新增欄位

depth: "最新資料"

▼ each\_location

▼ middle

PGA: "0"

PGV: "0"

▼ north

PGA: "0"

PGV: "0"

▼ south

PGA: "0"

PGV: "0"

geopoint: "北緯,東經"

location: "東北方"

magnitude: "6.3"

scale: "4"