

How to create a 2D list with variable list elements?

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這種問題常見於如何宣告一個二維 list, 裡面放多個 channel 的資料

例如:

binary file = [ch1 data 3 byte] [ch2 data 3 byte] [ch3 data 3 byte],

data[0] = [ch1 data]

data[1] = [ch2 data]

data[2] = [ch3 data]

關鍵片段

1. data_3xn = [[], [], []]

2. data_rowxcol = [[] for y in range(row)]

作法

要宣告一個二維 list, 首先要先配置外面的 list 內容為一個一個 list

例如:

[] ---> [.....]

[] ---> [.....]

[] ---> [.....]

data_3xn = [[], [], []]

data_3xn[0].append (填入資料到 channel 0)

data_3xn[1].append (填入資料到 channel 1)

data_3xn[2].append (填入資料到 channel 2)

如果 row 是變數, 那就用 for-range

[] ---> [.....]

```

# [] --> [.....]
# [] --> [.....]
# ...
data_rowxcol = [[] for y in range(row)]
data_rowxcol[0].append (填入資料到 channel 0)
data_rowxcol[1].append (填入資料到 channel 1)
data_rowxcol[2].append (填入資料到 channel 2)

```

使用情境: 一個二維 **list**, 裡面放多個 **channel** 的資料

```

'''

```

```

binary file = [ch1 data 3 byte] [ch2 data 3 byte] [ch3 data 3 byte]
data[0] = [ch1 data]
data[1] = [ch2 data]
data[2] = [ch3 data]
'''

```

```

def get_data_multi_channel(filename, row_num, size_data_in_byte=3, byteorder='big'):

```

```

    # Get data from binary file = [ch1 data 3 byte] [ch2 data 3 byte] [ch3 data 3 byte]
    # Return
    # data
    # [] --> [.....]
    # [] --> [.....]

```

```

    data_rowxcol = [[] for y in range(row_num)]

```

```

    with open(filename, "rb") as f:

```

```

        bRun = True

```

```

        while bRun:

```

```

            for i in range(0, row_num):

```

```

                data = f.read(size_data_in_byte)

```

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                if not data:

```

```

                    bRun = False

```

```

                    break;

```

```

                data_rowxcol[i].append(int.from_bytes(data, byteorder, signed=True))

```

```

    return data_rowxcol

```

```
def test_get_data_multi_channel():  
    data_ecg_3xn = get_data_multi_channel(fullfilename, 3)  
    print('data_ecg_3xn = ', data_ecg_3xn)
```

Reference

- <https://stackoverflow.com/questions/6667201/how-to-define-a-two-dimensional-array-in-python>