

# 二維轉一維陣列練習

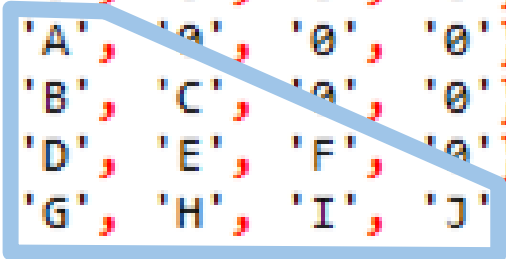
❖ 將二維轉一維陣列印出

```
0 0 0 0 0
0 A 0 0 0
0 B C 0 0
0 D E F 0
0 G H I J
-> A B C D E F G H I J

a b c d 0
0 e f g 0
0 0 h i 0
0 0 0 j 0
0 0 0 0 0
-> a b c d e f g h i j
```

# 二維轉一維陣列練習 - 上梯形

```
char arrayA2[NN][NN] = { {'0', '0', '0', '0', '0'},  
                           {'0', 'A', '0', '0', '0'},  
                           {'0', 'B', 'C', '0', '0'},  
                           {'0', 'D', 'E', 'F', '0'},  
                           {'0', 'G', 'H', 'I', 'J'} };
```



$A2[i][j] \rightarrow$

$A1[ (1 + (i-1)) * (i-1) / 2 + (j-1) ]$

# 二維轉一維陣列練習 - 上梯形

```
23     print_2array (arrayA2);
24
25     int sizeA = (1 + (NN-1)) * (NN-1) / 2;
26     char arrayA1[sizeA];
27
28     int i, j;
29     for (i = 0; i < NN; i++) {
30         for (j = 0; j < NN; j++) {
31             if (arrayA2[i][j] != '0') {
32
33                 int temp = (1 + (i-1)) * (i-1) / 2 + (j-1);
34
35                 arrayA1[temp] = arrayA2[i][j];
36
37             }
38         }
39     }
40     print_1array (arrayA1, sizeA);
```

# 二維轉一維陣列練習 - 上梯形

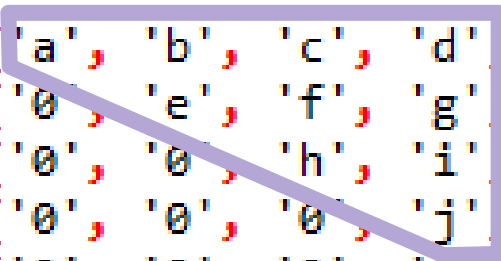
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```
0  0  0  0  0
0  A  0  0  0
0  B  C  0  0
0  D  E  F  0
0  G  H  I  J

-> A  B  C  D  E  F  G  H  I  J
```

# 二維轉一維陣列練習 - 下梯形

```
char arrayB2[NN][NN] = {  
    {'a', 'b', 'c', 'd', '0'},  
    {'0', 'e', 'f', 'g', '0'},  
    {'0', '0', 'h', 'i', '0'},  
    {'0', '0', '0', 'j', '0'},  
    {'0', '0', '0', '0', '0'}  
};
```



B2[i][j] ->

B1[ ((NN-1) + (NN-i)) \* i / 2 + (j-i) ]

# 二維轉一維陣列練習 - 下梯形

---

```
a    b    c    d    0
0    e    f    g    0
0    0    h    i    0
0    0    0    j    0
0    0    0    0    0

->  a    b    c    d    e    f    g    h    i    j
```