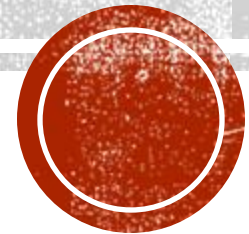


C LANGUAGE

NOTE

Chapter 11 : Array in 2-D



@STUDY_DISES



ARRAY IN 2-D

- We mentioned the 1-D array in chapter. Now, we have to describe about the array in 2-D even the array in n-D.
- We imagine that 1-D array is just like a $1 \times n$ table, by the same way, we also can imagine that 2-D array is just like a $n \times m$ table.
- The code which is going to declare a 2-D array would be like
- `int array[n][m] ;`
- An integer array in 2-D for example.



ARRAY IN 2-D

- `int Array[n][m]` ; It would be like :

Array[0][0] value	Array[0][1] value	Array[0][2] value	Array[0][n-1] value
Array[1][0] value	Array[1][1] value	Array[1][2] value	Array[1][n-1] value
Array[2][0] value	Array[2][1] value	Array[2][2] value	Array[2][n-1] value
Array[3][0] value	Array[3][1] value	Array[3][2] value	Array[3][n-1] value
.....
Array[m-1][0] value	Array[m-1][1] value	Array[m-1][2] value	Array[m-1][n-1] value



SAMPLE PRACTICE-1

- Practice 11-1 :

Zerojudge g275 :

Link : <https://zerojudge.tw/ShowProblem?problemid=g275>

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ANSWER OF SAMPLE PRACTICE-1

```
1  #include <stdio.h>
2
3  int main() {
4      int n;
5      scanf("%d", &n);
6      while (n-- > 0) {
7          int a[2][7];
8          for (int i = 0; i < 2; ++i) {
9              for (int j = 0; j < 7; ++j) {
10                 a[i][j] = 0;
11             }
12         }
13         for (int i = 0; i < 2; ++i) {
14             for (int j = 0; j < 7; ++j) {
15                 scanf("%d", &a[i][j]);
16             }
17         }
18         int c[3], count = 0;
```

```
18         int c[3], count = 0;
19         for (int i = 0; i < 3; ++i) {
20             c[i] = 0;
21         }
22         if (a[0][1] != a[0][3] && a[0][1] == a[0][5] && a[1][1] != a[1][3] && a[1][1] == a[1][5]) {
23             c[0] = 1, count++;
24         }
25         if (a[0][6] == 1 && a[1][6] == 0) {
26             c[1] = 1, count++;
27         }
28         if (a[0][1] != a[1][1] && a[0][3] != a[1][3] && a[0][5] != a[1][5]) {
29             c[2] = 1, count++;
30         }
31         if (c[0] == 0) {
32             printf("A");
33         }
34         if (c[1] == 0) {
35             printf("B");
36         }
37         if (c[2] == 0) {
38             printf("C");
39         }
40         if (count == 3) {
41             printf("None");
42         }
43         printf("\n");
44     }
45     return 0;
46 }
```



SAMPLE PRACTICE-2

- Practice 11-2 :
 - Zerojudge f580 :
 - Link : <https://zerojudge.tw/ShowProblem?problemid=f580>
 - APCS 2020/7 - 2



ANSWER OF SAMPLE PRACTICE-2

```
1  #include <stdio.h>
2
3  int main()
4  {
5      int n, m;
6      scanf( "%d%d" , &n , &m );
7      int arr[n][6];
8      for ( int i = 0 ; i < n ; i++ ) {
9          for ( int j = 0 ; j < 6 ; j++ ) {
10              arr[i][j] = j+1 ;
11          }
12      }
13      for ( int i = 0 ; i < m ; i++ ) {
14          int a, b;
15          scanf( "%d%d" , &a , &b );
16          a--;
17          if ( b == -1 ) {
18              int tmp = arr[a][3];
19              arr[a][3] = arr[a][0];
```

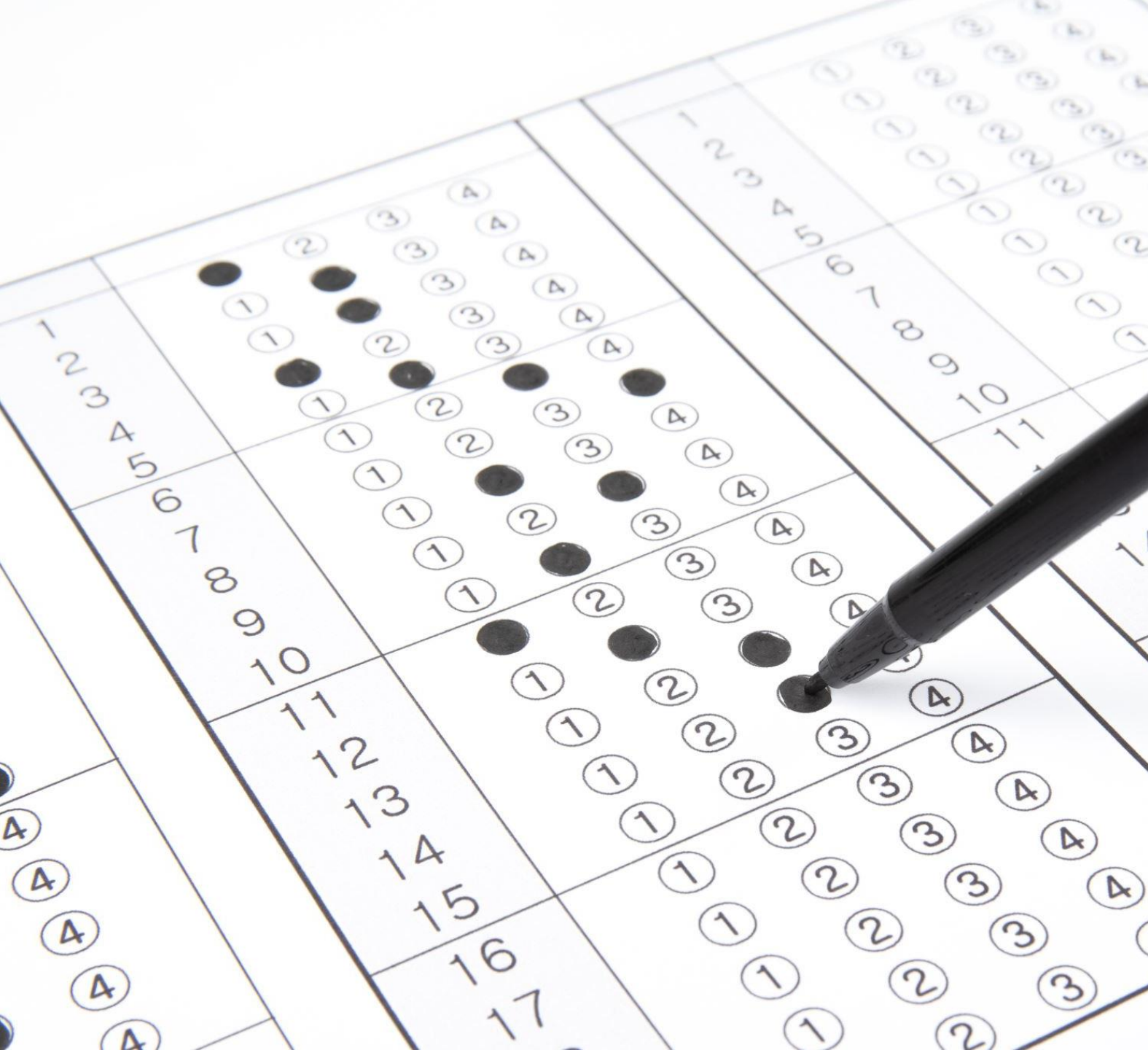
```
18              int tmp = arr[a][3];
19              arr[a][3] = arr[a][0];
20              arr[a][0] = arr[a][2];
21              arr[a][2] = arr[a][5];
22              arr[a][5] = tmp;
23          }
24          else if ( b == -2 ) {
25              int tmp = arr[a][5];
26              arr[a][5] = arr[a][1];
27              arr[a][1] = arr[a][0];
28              arr[a][0] = arr[a][4];
29              arr[a][4] = tmp;
30          }
31          else {
32              b--;
33              for ( int j = 0 ; j < 6 ; ++j ) {
34                  int tmp = arr[a][j];
35                  arr[a][j] = arr[b][j];
36                  arr[b][j] = tmp;
37              }
38          }
39      }
40      for ( int i = 0 ; i < n ; i++ ){
41          printf( "%d " , arr[i][0] ); |
42      }
43      return 0 ;
44 }
```



ADVANCED PRACTICE

- Advanced Practice 11 :
 - Zerojudge f313 :
 - Link : <https://zerojudge.tw/ShowProblem?problemid=f313>
 - APCS 2020/10 - 2





IF YOU WANT FULL OF THIS NOTE AND THE ANSWER OF ADVANCED PRACTICE

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-
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