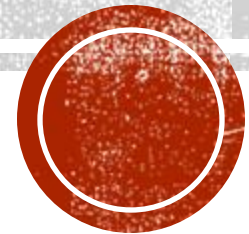


C LANGUAGE

NOTE

Chapter 9 : Array in 1-D



@STUDY_DISES



ARRAY

- Array is a base data structure in C language and it is very important and useful.
- To say simply, array in 1-D just like a "list" of a type of data.
- In the system, the memory spaces that an array occupy would be continuous.



ARRAY IMPLEMENT

- If we need to do a project that you must store ten values, and we haven't learned what is array, you would write that **int a , b , c , d , e , f , g , h ,That is too inefficient.**
- If we use the method of array in 1-D , we just have to write that **int array_name[n]**, n is represent that how much values you need to store.
- We can imagine that what array it will become a "1*n" table , have n blanks.

Array[0]	Array[1]	Array[2]	Array[3]	Array[4]	Array[5]	Array[6]	...	Array[n-1]
value	value	value	value	value	value	value		value

- The number in the [] we called that is an "index", and the range of index should be from 0 to n-1.



SAMPLE PRACTICE-1

- Practice 9_1 :

Zerojudge b964:

Link : <https://zerojudge.tw/ShowProblem?problemid=b964>

APCS 2016/03/05-1



ANSWER OF SAMPLE PRACTICE-1

```
1  #include <stdio.h>
2  int main () {
3      int N;
4      scanf( "%d", &N );
5      int score[N];
6      for ( int i = 0 ; i < N ; i++ ) {
7          scanf( "%d", &score[i] );
8      }
9      for ( int i = N-1 ; i >= 0 ; i-- ) {
10         int y = 0 , c = 0;
11         for ( int j = 0 ; j <= i ; j++ ) {
12             if ( c < score[j] ) {
13                 c = score[j] ;
14                 y = j ;
15             }
16         }
17         int u = score[i];
18         score[i] = c ;
19         score[y] = u ;
20     }
21     int best = 101 , worst = -1 , b = 0 , w = 0 ;
22     for ( int i = 0 ; i < N ; i++ ) {
23         printf( "%d", score[i] );
24         if ( score[i] >= 60 && score[i] < best ) {
25             best = score[i];
26         }
27         else if ( score[i] < 60 && score[i] > worst ) {
28             worst = score[i];
29         }
30     }
```

```
31     printf( "\n" ) ;
32     if ( worst == -1 ) {
33         printf( "best case\n" ) ;
34     }
35     else {
36         printf( "%d\n", worst ) ;
37     }
38     if ( best == 101 ) {
39         printf( "worst case\n" );
40     }
41     else {
42         printf( "%d\n", best ) ;
43     }
44     return 0 ;
45 }
```



SAMPLE PRACTICE-2

- Practice 9_2 :

Zerojudge g595:

Link : <https://zerojudge.tw/ShowProblem?problemid=g595>

APCS 2021/11-1



ANSWER OF SAMPLE PRACTICE-2

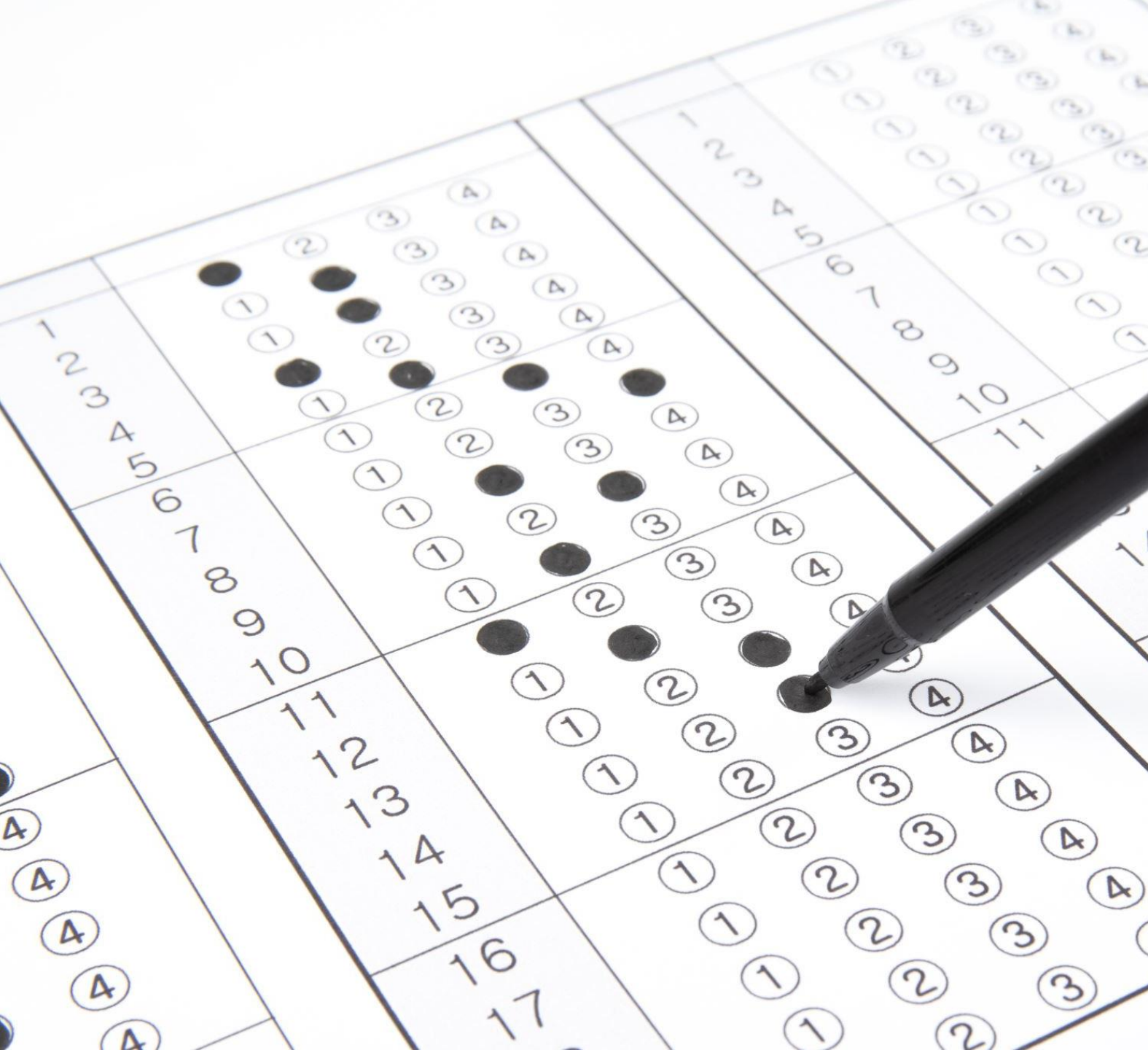
```
1  #include <stdio.h>
2  int main () {
3      int n ;
4      scanf( "%d" , &n ) ;
5      int a[n] ;
6      for ( int i = 0 ; i < n ; ++i ) {
7          scanf( "%d" , &a[i] ) ;
8      }
9      int count = 0 ;
10     for ( int i = 0 ; i < n ; ++i ) {
11         if ( a[i] == 0 ) {
12             if ( i != 0 && i != n-1 ) {
13                 if ( a[i-1] < a[i+1] ) {
14                     count += a[i-1] ;
15                 }
16             }
17             else {
18                 count += a[i+1] ;
19             }
20         }
21         else {
22             if ( i == 0 ) {
23                 count += a[i+1] ;
24             }
25             else {
26                 count += a[i-1] ;
27             }
28         }
29     }
30     printf( "%d\n" , count ) ;
31     return 0 ;
32 }
```



ADVANCED PRACTICE

- Advanced Practice 9 :
 - Zerojudge i399:
 - Link : <https://zerojudge.tw/ShowProblem?problemid=i399>
 - APCS 2022/06-1





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

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-
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