

```
1  #include <stdio.h>
2
3  #define NUM_ROWS 5
4  #define NUM_COLUMNS 3
5
6  int main(void)
7  {
8      //variable declarations
9      int iArray_2D[NUM_ROWS][NUM_COLUMNS]; // TOTAL NUMBER OF ELEMENTS = NUM_ROWS * NUM_COLUMNS
10     int iArray_1D[NUM_ROWS * NUM_COLUMNS];
11
12     int i, j;
13     int num;
14
15     //code
16     printf("Enter Elements Of Your Choice To Fill Up The Integer 2D Array : \n\n");
17     for (i = 0; i < NUM_ROWS; i++)
18     {
19         printf("For ROW NUMBER %d : \n", (i + 1));
20         for (j = 0; j < NUM_COLUMNS; j++)
21         {
22             printf("Enter Element Number %d : \n", (j + 1));
23             scanf("%d", &num);
24             iArray_2D[i][j] = num;
25         }
26         printf("\n\n");
27     }
28
29     // *** DISPLAY OF 2D ARRAY ***
30     printf("\n\n");
31     printf("Two-Dimensional ( 2D ) Array Of Integers : \n\n");
32     for (i = 0; i < NUM_ROWS; i++)
33     {
34         printf("***** ROW %d *****\n", (i + 1));
35         for (j = 0; j < NUM_COLUMNS; j++)
36         {
37             printf("iArray_2D[%d][%d] = %d\n", i, j, iArray_2D[i][j]);
38         }
39         printf("\n\n");
40     }
41
42     // *** CONVERTING 2D INTEGER ARRAY TO 1D INTEGER ARRAY ***
43     for (i = 0; i < NUM_ROWS; i++)
44     {
45         for (j = 0; j < NUM_COLUMNS; j++)
46         {
47             iArray_1D[(i * NUM_COLUMNS) + j] = iArray_2D[i][j];
48         }
49     }
50
```

```
51 // *** PRINTING 1D ARRAY ***
52 printf("\n\n");
53 printf("One-Dimensional ( 1D ) Array Of Integers : \n\n");
54 for (i = 0; i < (NUM_ROWS * NUM_COLUMNS); i++)
55 {
56     printf("iArray_1D[%d] = %d\n", i, iArray_1D[i]);
57 }
58
59 printf("\n\n");
60
61 return(0);
62 }
63
64
```