

```

1  #include <stdio.h>
2  int main(void)
3  {
4      //variable declaraions
5
6      //IN-LINE INITIALIZATION
7      int iArray[5][3][2] = { { { 9, 18 }, { 27, 36 }, { 45, 54 } },
8                              { { 8, 16 }, { 24, 32 }, { 40, 48 } },
9                              { { 7, 14 }, { 21, 28 }, { 35, 42 } },
10                             { { 6, 12 }, { 18, 24 }, { 30, 36 } },
11                             { { 5, 10 }, { 15, 20 }, { 25, 30 } } };
12
13     int int_size;
14     int iArray_size;
15     int iArray_num_elements, iArray_width, iArray_height, iArray_depth;
16
17     //code
18     printf("\n\n");
19
20     int_size = sizeof(int);
21
22     iArray_size = sizeof(iArray);
23     printf("Size Of Three Dimensional ( 3D ) Integer Array Is = %d\n\n",
24           iArray_size);
25
26     iArray_width = iArray_size / sizeof(iArray[0]);
27     printf("Number of Rows (Width) In Three Dimensional ( 3D ) Integer Array Is =
28           %d\n\n", iArray_width);
29
30     iArray_height = sizeof(iArray[0]) / sizeof(iArray[0][0]);
31     printf("Number of Columns (Height) In Three Dimensional ( 3D ) Integer Array
32           Is = %d\n\n", iArray_height);
33
34     iArray_depth = sizeof(iArray[0][0]) / int_size;
35     printf("Depth In Three Dimensional ( 3D ) Integer Array Is = %d\n\n",
36           iArray_depth);
37
38     iArray_num_elements = iArray_width * iArray_height * iArray_depth;
39     printf("Number of Elements In Three Dimensional ( 3D ) Integer Array Is = %d
40           \n\n", iArray_num_elements);
41
42     printf("\n\n");
43     printf("Elements In Integer 3D Array : \n\n");
44
45     // *** PIECE-MEAL DISPLAY ***
46     // ***** ROW 1 *****
47     printf("***** ROW 1 *****\n");
48     printf("***** COLUMN 1 *****\n");
49     printf("iArray[0][0][0] = %d\n", iArray[0][0][0]);
50     printf("iArray[0][0][1] = %d\n", iArray[0][0][1]);
51     printf("\n");
52
53     printf("***** COLUMN 2 *****\n");

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48     printf("iArray[0][1][0] = %d\n", iArray[0][1][0]);
49     printf("iArray[0][1][1] = %d\n", iArray[0][1][1]);
50     printf("\n");
51
52     printf("***** COLUMN 3 *****\n");
53     printf("iArray[0][2][0] = %d\n", iArray[0][2][0]);
54     printf("iArray[0][2][1] = %d\n", iArray[0][2][1]);
55     printf("\n\n");
56
57     // ***** ROW 2 *****
58     printf("***** ROW 2 *****\n");
59     printf("***** COLUMN 1 *****\n");
60     printf("iArray[1][0][0] = %d\n", iArray[1][0][0]);
61     printf("iArray[1][0][1] = %d\n", iArray[1][0][1]);
62     printf("\n");
63
64     printf("***** COLUMN 2 *****\n");
65     printf("iArray[1][1][0] = %d\n", iArray[1][1][0]);
66     printf("iArray[1][1][1] = %d\n", iArray[1][1][1]);
67     printf("\n");
68
69     printf("***** COLUMN 3 *****\n");
70     printf("iArray[1][2][0] = %d\n", iArray[1][2][0]);
71     printf("iArray[1][2][1] = %d\n", iArray[1][2][1]);
72     printf("\n\n");
73
74     // ***** ROW 3 *****
75     printf("***** ROW 3 *****\n");
76     printf("***** COLUMN 1 *****\n");
77     printf("iArray[2][0][0] = %d\n", iArray[2][0][0]);
78     printf("iArray[2][0][1] = %d\n", iArray[2][0][1]);
79     printf("\n");
80
81     printf("***** COLUMN 2 *****\n");
82     printf("iArray[2][1][0] = %d\n", iArray[2][1][0]);
83     printf("iArray[2][1][1] = %d\n", iArray[2][1][1]);
84     printf("\n");
85
86     printf("***** COLUMN 3 *****\n");
87     printf("iArray[2][2][0] = %d\n", iArray[2][2][0]);
88     printf("iArray[2][2][1] = %d\n", iArray[2][2][1]);
89     printf("\n\n");
90
91     // ***** ROW 4 *****
92     printf("***** ROW 4 *****\n");
93     printf("***** COLUMN 1 *****\n");
94     printf("iArray[3][0][0] = %d\n", iArray[3][0][0]);
95     printf("iArray[3][0][1] = %d\n", iArray[3][0][1]);
96     printf("\n");
97
98     printf("***** COLUMN 2 *****\n");
99     printf("iArray[3][1][0] = %d\n", iArray[3][1][0]);
```

```
100     printf("iArray[3][1][1] = %d\n", iArray[3][1][1]);
101     printf("\n");
102
103     printf("***** COLUMN 3 *****\n");
104     printf("iArray[3][2][0] = %d\n", iArray[3][2][0]);
105     printf("iArray[3][2][1] = %d\n", iArray[3][2][1]);
106     printf("\n\n");
107
108     // ***** ROW 5 *****
109     printf("***** ROW 5 *****\n");
110     printf("***** COLUMN 1 *****\n");
111     printf("iArray[4][0][0] = %d\n", iArray[4][0][0]);
112     printf("iArray[4][0][1] = %d\n", iArray[4][0][1]);
113     printf("\n");
114
115     printf("***** COLUMN 2 *****\n");
116     printf("iArray[4][1][0] = %d\n", iArray[4][1][0]);
117     printf("iArray[4][1][1] = %d\n", iArray[4][1][1]);
118     printf("\n");
119
120     printf("***** COLUMN 3 *****\n");
121     printf("iArray[4][2][0] = %d\n", iArray[4][2][0]);
122     printf("iArray[4][2][1] = %d\n", iArray[4][2][1]);
123     printf("\n\n");
124
125     return(0);
126 }
127
128
```