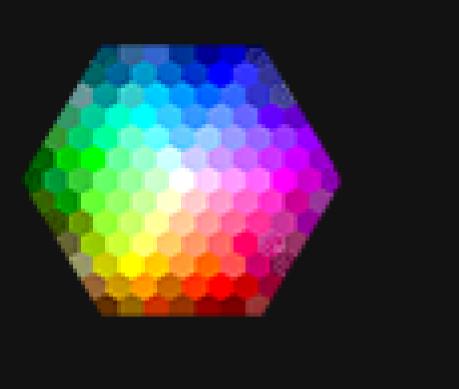


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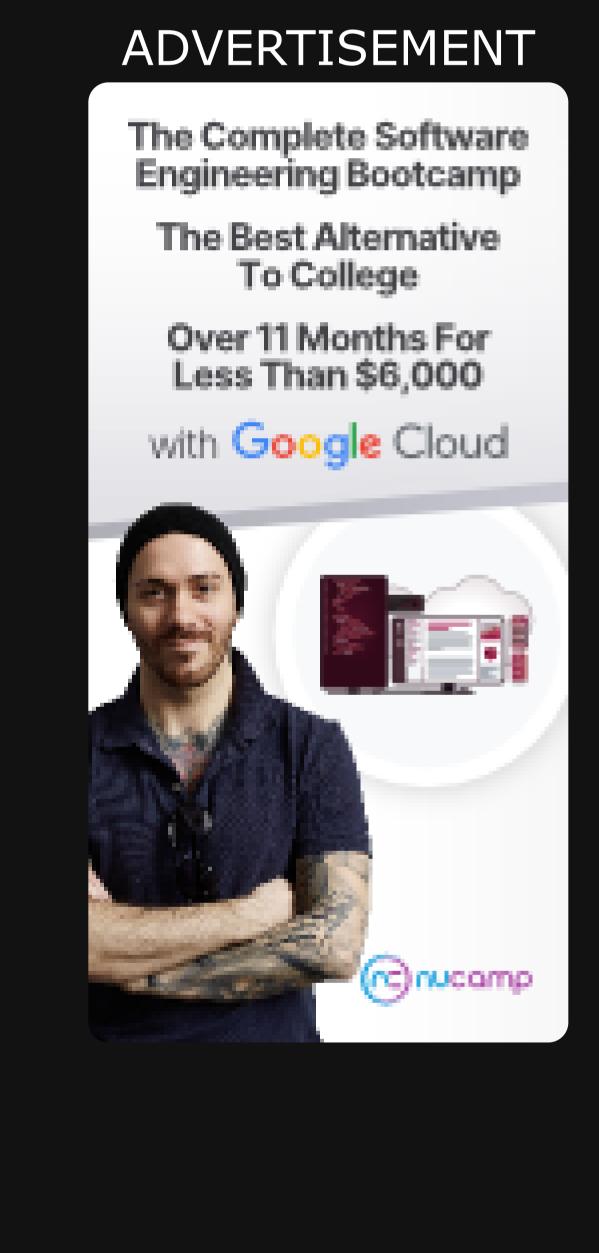


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|       | COLUMN 0 | COLUMN 1 | COLUMN 2 |
|-------|----------|----------|----------|
| ROW 0 | 1        | 4        | 2        |
| ROW 1 | 3        | 6        | 8        |
|       |          |          |          |

## To access an element of a two-dimensional array, you must specify the index number of both the row and column.

Access the Elements of a 2D Array

This statement accesses the value of the element in the first row (0) and third column (2) of the matrix array.

Example

```
int matrix[2][3] = \{ \{1, 4, 2\}, \{3, 6, 8\} \};
printf("%d", matrix[0][2]); // Outputs 2
Try it Yourself »
```

Remember that: Array indexes start with 0: [0] is the first element. [1] is the second element, etc.

## dimensions:

int matrix[2][3] =  $\{ \{1, 4, 2\}, \{3, 6, 8\} \};$ 

Change Elements in a 2D Array

The following example will change the value of the element in the first row (0) and first column **(0)**:

To change the value of an element, refer to the index number of the element in each of the

Example

```
matrix[0][0] = 9;
 printf("%d", matrix[0][0]); // Now outputs 9 instead of 1
 Try it Yourself »
Loop Through a 2D Array
```

## The following example outputs all elements in the matrix array:

To loop through a multi-dimensional array, you need one loop for each of the array's dimensions.

```
Example
 int matrix[2][3] = \{ \{1, 4, 2\}, \{3, 6, 8\} \};
 int i, j;
 for (i = 0; i < 2; i++) {
   for (j = 0; j < 3; j++) {
      printf("%d\n", matrix[i][j]);
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                                                                                      Next >
```

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