

```
1  #include <stdio.h>
2
3  #define MAX_STRING_LENGTH 512
4
5  int main(void)
6  {
7      //function prototype
8      int MyStrlen(char[]);
9
10     //variable declarations
11
12     // *** A 'STRING' IS AN ARRAY OF CHARACTERS ... so char[] IS A char ARRAY AND
13     // HENCE, char[] IS A 'STRING' ***
14     // *** AN ARRAY OF char ARRAYS IS AN ARRAY OF STRINGS !!! ***
15     // *** HENCE, char[] IS ONE char ARRAY AND HENCE, IS ONE STRING ***
16     // *** HENCE, char[][] IS AN ARRAY OF char ARRAYS AND HENCE, IS AN ARRAY OF
17     // STRINGS ***
18
19     //Here, the string array can allow a maximum number of 10 strings (10 rows)
20     //and each of these 10 strings can have only upto 15 characters maximum (15
21     //columns)
22     char strArray[10][15] = { "Hello!", "Welcome", "To", "Real", "Time",
23     "Rendering", "Batch", "(2020-21)", "Of", "ASTROMEDICOMP." }; //IN-LINE
24     INITIALIZATION
25     int iStrLengths[10]; //1D Integer Array - Stores lengths of those strings at
26     //corresponding indices in 'strArray[]' e.g: iStrLengths[0] will be the
27     //length of string at strArray[0], iStrLengths[1] will be the length of string
28     //at strArray[1]...10 strings, 10 lengths...
29     int strArray_size;
30     int strArray_num_rows;
31     int i, j;
32
33     //code
34     strArray_size = sizeof(strArray);
35     strArray_num_rows = strArray_size / sizeof(strArray[0]);
36
37     //Storing in lengths of all the strings...
38     for (i = 0; i < strArray_num_rows; i++)
39         iStrLengths[i] = MyStrlen(strArray[i]);
40
41     printf("\n\n");
42     printf("The Entire String Array : \n\n");
43     for (i = 0; i < strArray_num_rows; i++)
44         printf("%s ", strArray[i]);
45
46     printf("\n\n");
47     printf("Strings In The 2D Array : \n\n");
48
49     //Since, char[][] is an array of strings, referencing only by the row number
50     //(first []) will give the row or the string
51     //The Column Number (second []) is the particular character in that string /
52     row
```

```
42     for (i = 0; i < strArray_num_rows; i++)
43     {
44         printf("String Number %d => %s\n\n", (i + 1), strArray[i]);
45         for (j = 0; j < iStrLengths[i]; j++)
46         {
47             printf("Character %d = %c\n", (j + 1), strArray[i][j]);
48         }
49         printf("\n\n");
50     }
51     return(0);
52 }
53
54 int MyStrlen(char str[])
55 {
56     //variable declarations
57     int j;
58     int string_length = 0;
59
60     //code
61     // *** DETERMINING EXACT LENGTH OF THE STRING, BY DETECTING THE FIRST
62     OCCURENCE OF NULL-TERMINATING CHARACTER ( \0 ) ***
63     for (j = 0; j < MAX_STRING_LENGTH; j++)
64     {
65         if (str[j] == '\0')
66             break;
67         else
68             string_length++;
69     }
70     return(string_length);
71 }
```