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1  #include <stdio.h>
2  #include <ctype.h>
3  #include <string.h>
4
5  #define MAX_STRING_LENGTH 1024
6
7  struct CharacterCount
8  {
9      char ch;
10     int ch_count;
11 } character_and_count[] = { { 'A', 0 }, //character_and_count[0].ch = 'A'    &    ↗
    character_and_count[0].ch_count = 0
12     { 'B', 0 }, //character_and_count[1].ch = 'B'    &    ↗
    character_and_count[1].ch_count = 0
13     { 'C', 0 }, //character_and_count[2].ch = 'C'    &    ↗
    character_and_count[2].ch_count = 0
14     { 'D', 0 }, //character_and_count[3].ch = 'D'    &    ↗
    character_and_count[3].ch_count = 0
15     { 'E', 0 }, //character_and_count[4].ch = 'E'    &    ↗
    character_and_count[4].ch_count = 0
16     { 'F', 0 },
17     { 'G', 0 },
18     { 'H', 0 },
19     { 'I', 0 },
20     { 'J', 0 },
21     { 'K', 0 },
22     { 'L', 0 },
23     { 'M', 0 },
24     { 'N', 0 },
25     { 'O', 0 },
26     { 'P', 0 },
27     { 'Q', 0 },
28     { 'R', 0 },
29     { 'S', 0 },
30     { 'T', 0 },
31     { 'U', 0 },
32     { 'V', 0 },
33     { 'W', 0 },
34     { 'X', 0 },
35     { 'Y', 0 },
36     { 'Z', 0 } }; //character_and_count[25].ch = 'Z'    &    ↗
    character_and_count[25].ch_count = 0
37
38 #define SIZE_OF_ENTIRE_ARRAY_OF_STRUCTS sizeof(character_and_count)
39 #define SIZE_OF_ONE_STRUCT_FROM_THE_ARRAY_OF_STRUCTS sizeof(character_and_count    ↗
    [0])
40 #define NUM_ELEMENTS_IN_ARRAY (SIZE_OF_ENTIRE_ARRAY_OF_STRUCTS /    ↗
    SIZE_OF_ONE_STRUCT_FROM_THE_ARRAY_OF_STRUCTS)
41
42 // ENTRY POINT FUNCTION
43 int main(void)
44 {

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```
45 //variable declarations
46 char str[MAX_STRING_LENGTH];
47 int i, j, actual_string_length = 0;
48
49 //code
50 printf("\n\n");
51 printf("Enter A String : \n\n");
52 gets_s(str, MAX_STRING_LENGTH);
53
54 actual_string_length = strlen(str);
55
56 printf("\n\n");
57 printf("The String You Have Entered Is : \n\n");
58 printf("%s\n\n", str);
59
60 for (i = 0; i < actual_string_length; i++)
61 {
62     for (j = 0; j < NUM_ELEMENTS_IN_ARRAY; j++) //Run every character of the
63         //input string through the entire alphabet (A TO Z)
64     {
65         str[i] = toupper(str[i]); //If input character is in lower case, turn
66         //it to upper case for comparison
67
68         if (str[i] == character_and_count[j].ch) //If character is present...
69             character_and_count[j].ch_count++; //Increment its count by 1 ...
70     }
71
72     printf("\n\n");
73     printf("The Number Of Occurences Of ALL Characters From The Alphabet Are As
74     Follows : \n\n");
75     for (i = 0; i < NUM_ELEMENTS_IN_ARRAY; i++)
76     {
77         printf("Character %c = %d\n", character_and_count[i].ch,
78             character_and_count[i].ch_count);
79     }
80     printf("\n\n");
81     return(0);
82 }
```