

```
1  #include <stdio.h>
2
3  #define MAX_STRING_LENGTH 512
4
5  #define SPACE ' '
6
7  #define FULLSTOP '.'
8  #define COMMA ','
9  #define EXCLAMATION '!'
10 #define QUESTION_MARK '?'
11
12 int main(void)
13 {
14     //function prototype
15     int MyStrlen(char[]);
16     char MyToUpper(char);
17
18     //variable declarations
19     char chArray[MAX_STRING_LENGTH], chArray_CapitalizedFirstLetterOfEveryWord  ➤
20         [MAX_STRING_LENGTH]; // A Character Array Is A String
21     int iStringLength;
22     int i, j;
23
24     //code
25
26     // *** STRING INPUT ***
27     printf("\n\n");
28     printf("Enter A String : \n\n");
29     gets_s(chArray, MAX_STRING_LENGTH);
30
31     iStringLength = MyStrlen(chArray);
32     j = 0;
33     for (i = 0; i < iStringLength; i++)
34     {
35         if (i == 0) //First Letter Of Any Sentence Must Be A CAPITAL LETTER
36             chArray_CapitalizedFirstLetterOfEveryWord[j] = MyToUpper(chArray[i]);
37
38         else if (chArray[i] == SPACE) //First Letter Of Every Word In The  ➤
39             Sentence Must Be A CAPITAL LETTER. Words Are Separated By Spaces.
40         {
41             chArray_CapitalizedFirstLetterOfEveryWord[j] = chArray[i];
42             chArray_CapitalizedFirstLetterOfEveryWord[j + 1] = MyToUpper(chArray  ➤
43                 [i + 1]);
44
45             //SINCE, ALREADY TWO CHARACTERS (AT INDICES 'i' AND i + 1 HAVE BEEN  ➤
46             //CONSIDERED IN THIS else-if BLOCK...WE ARE EXTRA-INCREMENTING 'i'  ➤
47             //AND 'j' BY 1
48             j++;
49             i++;
50         }
51
52         else if ((chArray[i] == FULLSTOP || chArray[i] == COMMA || chArray[i] ==  ➤
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EXCLAMATION || chArray[i] == QUESTION_MARK) && (chArray[i] !=
SPACE)) //First Letter Of Every Word After Punctuation Mark, In The
Sentence Must Be A CAPITAL LETTER. Words Are Separated By Punctuations.
48     {
49         chArray_CapitalizedFirstLetterOfEveryWord[j] = chArray[i];
50         chArray_CapitalizedFirstLetterOfEveryWord[j + 1] = SPACE;
51         chArray_CapitalizedFirstLetterOfEveryWord[j + 2] = MyToUpper(chArray
[i + 1]);
52
53         // SINCE, ALREADY TWO CHARACTERS (AT INDICES 'i' AND i + 1 HAVE BEEN
CONSIDERED IN THIS else-if BLOCK...WE ARE EXTRA-INCREMENTING 'i' BY
1
54         // SINCE, ALREADY THREE CHARACTERS (AT INDICES 'j' AND (j + 1) AND (j
+ 2) HAVE BEEN CONSIDERED IN THIS else-if BLOCK...WE ARE EXTRA-
INCREMENTING 'j' BY 2
55         j = j + 2;
56         i++;
57     }
58
59     else
60         chArray_CapitalizedFirstLetterOfEveryWord[j] = chArray[i];
61
62     j++;
63 }
64
65 chArray_CapitalizedFirstLetterOfEveryWord[j] = '\0';
66
67     // *** STRING OUTPUT ***
68     printf("\n\n");
69     printf("String Entered By You Is : \n\n");
70     printf("%s\n", chArray);
71
72     printf("\n\n");
73     printf("String After Capitalizing First Letter Of Every Word : \n\n");
74     printf("%s\n", chArray_CapitalizedFirstLetterOfEveryWord);
75
76     return(0);
77 }
78
79 int MyStrlen(char str[])
80 {
81     //variable declarations
82     int j;
83     int string_length = 0;
84
85     //code
86     // *** DETERMINING EXACT LENGTH OF THE STRING, BY DETECTING THE FIRST
OCURRENCE OF NULL-TERMINATING CHARACTER ( \0 ) ***
87     for (j = 0; j < MAX_STRING_LENGTH; j++)
88     {
89         if (str[j] == '\0')
90             break;

```

```
91     else
92         string_length++;
93     }
94     return(string_length);
95 }
96
97 char MyToUpper(char ch)
98 {
99     //variable declaration
100     int num;
101     int c;
102
103     //code
104
105     // ASCII VALUE OF 'a' (97) - ASCII VALUE OF 'A' (65) = 32
106     // THIS SUBTRACTION WILL GIVE THE EXACT DIFFERENCE BETWEEN THE UPPER AND ↗
107     // LOWER CASE COUNTERPARTS OF EACH LETTER OF THE ALPHABET
108     // IF THIS DIFFERENCE IS SUBTRACTED FROM THE ASCII VALUE OF A LOWER CASE ↗
109     // LETTER, THE RESULTANT ASCII VALUE WILL BE THAT OF ITS UPPER CASE COUNTER- ↗
110     // PART, HENCE, HELPING US TO FIND ITS UPPER CASE LETTER !!!
111     // ASCII VALUES OF 'a' to 'z' => 97 TO 122
112     // ASCII VALUES OF 'A' to 'Z' => 65 TO 90
113     num = 'a' - 'A';
114
115     if ((int)ch >= 97 && (int)ch <= 122)
116     {
117         c = (int)ch - num;
118         return((char)c);
119     }
120     else
121         return(ch);
122 }
```