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1  /*
2  2. Design, Develop and Implement a Program in C for following operations on Strings.
3  a. Read a main String (STR), a Pattern String (PAT) and a Replace String (REP)
4  b. Perform Pattern Matching Operation:
5  Find and Replace all occurrences of PAT in STR with REP if PAT exists in STR.
6  Report suitable messages in case PAT does not exist in STR.
7  Support the program with functions for each of the above operations.
8  Don't use Built-in functions.
9  */
10
11 /*
12 Input:
13 'Main string' represented by STR
14 'Pattern String' represented by PAT
15 'Replace String' represented by REP
16
17 Output:
18 Printing the main string with Replaced pattern. (or)
19 Pattern not found.
20
21 Main, Pattern and Replace String will get added by '\0' at the end of string.
22
23 we use gets() to make sure we get entire string as input.
24 ans[] will be storing the main string with replaced pattern.
25
26 int flag=0; means by default flag is set to zero indicating pattern not found.
27 if the pattern is found, flag is made 1.
28 */
29
30
31 #include<stdio.h>
32 #include<stdlib.h>
33 #include<string.h>
34
35 void main()
36 {
37     char STR[100],PAT[100],REP[100],ans[100];
38     int i,j,c,m,k;
39     int flag=0; //by default flag is set to zero indicating pattern not found.
40
41     printf("Enter the MAIN string:\n");
42     gets(STR);
43
44     printf("Enter a PATTERN string:\n");
45     gets(PAT);
46
47     printf("Enter a REPLACE string:\n");
48     gets(REP);
49
50     i = j= m = c = 0;
51
52     while(STR[c]!='\0') //Till we reach end of main string
53     {
54         if (STR[m]==PAT[i]) // Checking for Matching main with pattern
55         {
56             i++;
57             m++;
58
59             if(PAT[i]=='\0') //if we reach end of pattern string
60             {
61                 //copy replace string in the ans string
62                 for(k=0; REP[k]!='\0';k++,j++)
63                 {
64                     ans[j] = REP[k];
65                     flag=1; //indicates pattern found.
66                 }

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67
68         i=0;
69         c=m;
70     }
71 }
72 else //if there is mismatch
73 {
74     ans[j] = STR[c];
75     j++;
76     c++;
77     m = c;
78     i=0;
79 }
80 }
81
82 if(flag==0)
83 {
84     printf("Pattern doesn't found!!!");
85 }
86 else
87 {
88     ans[j] = '\0'; //Attach '\0' to answer specifying end of string.
89     printf("The resultant string is\n:%s" ,ans);
90 }
91 }

```

OUTPUT:

Enter the MAIN string:
I HATE DSA
Enter a PATTERN string:
HATE
Enter a REPLACE string:
LOVE
The resultant string is:I LOVE DSA

Enter the MAIN string:
Good Morning
Enter a PATTERN string:
Morning
Enter a REPLACE string:
Evening
The resultant string is:Good Evening

Enter the MAIN string:
How u doing
Enter a PATTERN string:
making
Enter a REPLACE string:
going
Pattern not found!

Enter the MAIN string:
Sheldon Cooper
Enter a PATTERN string:
Leonard
Enter a REPLACE string:
Penny
Pattern not found!