

```
47 | }
48 | int main() {
49 |     char * arr;
50 |     printf("Enter your full name in the format <First Name>*<Last Name>: ");
51 |     scanf("%[^\\n]s", arr);
52 |     printf("Name : %s\\n", arr);
53 |     int n;
54 |     for (n = 0; arr[n] != '\\0'; ++n);
55 |     struct TNode * root = arrayToTree(arr, 0, n - 1);
56 |     preOrder(root);
57 |     printf("\\n");
58 |     updateArray(arr, 2);
59 |     root = arrayToTree(arr, 0, n - 1);
60 |     preOrder(root);
61 |     printf("\\n");
62 |     updateArray(arr, 1);
63 |     root = arrayToTree(arr, 0, n - 1);
64 |     preOrder(root);
65 |     printf("\\n");
66 |     updateArray(arr, 3);
67 |     root = arrayToTree(arr, 0, n - 1);
68 |     preOrder(root);
69 |     printf("\\n");
70 |     return 0;
71 | }
```

```

20 | struct TNode * newNode(char data) {
21 |     struct TNode * node = (struct TNode * ) malloc(sizeof(struct TNode));
22 |     node -> data = data;
23 |     node -> left = NULL;
24 |     node -> right = NULL;
25 |     return node;
26 | }
27 | void preOrder(struct TNode * node) {
28 |     if (node == NULL) return;
29 |     printf("%c", node -> data);
30 |     preOrder(node -> left);
31 |     preOrder(node -> right);
32 | }
33 | void reverseArray(char * arr, int start, int end) {
34 |     while (start < end) {
35 |         char x = arr[start];
36 |
37 |         arr[start++] = arr[end];
38 |         arr[end--] = x;
39 |     }
40 | }
41 | void updateArray(char * arr, int n) {
42 |     int size;
43 |     for (size = 0; arr[size] != '\0'; ++size);
44 |     reverseArray(arr, 0, size - 1);
45 |     reverseArray(arr, 0, n - 1);
46 |     reverseArray(arr, n, size - 1);
47 | }
48 | int main() {
49 |     char * arr;
50 |     printf("Enter your full name in the format <First Name>*<Last Name>: ");
51 |     scanf("%[^\\n]s", arr);
52 |     printf("Name : %s\\n", arr);

```

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Question: 4

Print the output of following function. Your name should be entered in the format <FirstName>*<LastName> as an input.



```
1 | #include<stdio.h>
2 |
3 | #include<stdlib.h>
4 |
5 | struct TNode {
6 |     char data;
7 |     struct TNode * left;
8 |     struct TNode * right;
9 | };
10 | struct TNode * newNode(char data);
11 | struct TNode * arrayToTree(char arr[], int start, int end) {
12 |     if (start > end)
13 |         return NULL;
14 |     int mid = (start + end) / 2;
15 |     struct TNode * root = newNode(arr[mid]);
16 |     root -> left = arrayToTree(arr, start, mid - 1);
17 |     root -> right = arrayToTree(arr, mid + 1, end);
18 |     return root;
19 | }
20 | struct TNode * newNode(char data) {
21 |     struct TNode * node = (struct TNode * ) malloc(sizeof(struct TNode));
22 |     node -> data = data;
23 |     node -> left = NULL;
24 |     node -> right = NULL;
```

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