

```
1  #include <stdio.h>
2  #include <string.h>
3  int main() {
4      char input[100][100], nonTerminal;
5      int n, i, j, k, prefixLen;
6      printf("Enter Non-Terminal: ");
7      scanf(" %c", &nonTerminal);
8      printf("Enter number of productions: ");
9      scanf("%d", &n);
10     printf("Enter the productions (without %c->, only RHS):\n",
            nonTerminal);
11     for (i = 0; i < n; i++) {
12         scanf("%s", input[i]);
13     }
14     prefixLen = 0;
15     int minLen = strlen(input[0]);
16     for (i = 1; i < n; i++) {
17         if (strlen(input[i]) < minLen)
18             minLen = strlen(input[i]);
19     }
20
21     for (i = 0; i < minLen; i++) {
22         char ch = input[0][i];
23         int same = 1;
24         for (j = 1; j < n; j++) {
25             if (input[j][i] != ch) {
26                 same = 0;
27                 break;
28             }
29         }
30     }
31 }
```

```
29     }
30     if (same)
31         prefixLen++;
32     else
33         break;
34 }
35 printf("\nAfter Left Factoring:\n");
36 printf("%c -> ", nonTerminal);
37 for (i = 0; i < prefixLen; i++) {
38     printf("%c", input[0][i]);
39 }
40 printf("%c'\n", nonTerminal);
41 printf("%c' -> ", nonTerminal);
42 for (i = 0; i < n; i++) {
43     if (prefixLen < strlen(input[i]))
44         printf("%s|", &input[i][prefixLen]);
45     else
46         printf("ε|");
47 }
48 printf("\b \n");
49 return 0;
50 }
```

Enter Non-Terminal: s

Enter number of productions: 3

Enter the productions (without s->, only RHS):

abc

ade

aef

After Left Factoring:

s -> as'

s' -> bc|de|ef|

=== Code Execution Successful ===