

```
1  #include <stdio.h>
2  #include <ctype.h>
3  #include <string.h>
4  int limit, x;
5  char production[10][10], followArray[10];
6  void find_first(char ch);
7  void find_follow(char ch);
8  void addToFollow(char ch);
9  int main() {
10     int count;
11     char option, ch;
12     printf("Enter Total Number of Productions:\t");
13     scanf("%d", &limit);
14     for (count = 0; count < limit; count++) {
15         printf("Value of Production Number [%d]:\t", count + 1);
16         scanf("%s", production[count]);
17     }
18     do {
19         x = 0;
20         printf("\nEnter production Value to Find Follow:\t");
21         scanf(" %c", &ch);
22         find_follow(ch);
23         printf("Follow Value of %c:\t{ ", ch);
24         for (count = 0; count < x; count++)
25             printf("%c ", followArray[count]);
26         printf("}\n");
27         printf("To Continue, Press Y:\t");
28         scanf(" %c", &option);
29     } while (option == 'y' || option == 'Y');
30     return 0;
31 }
```

```
32 void find_follow(char ch) {
33     int i, j;
34     if (production[0][0] == ch)
35         addToFollow('$');
36     for (i = 0; i < limit; i++) {
37         int len = strlen(production[i]);
38         for (j = 2; j < len; j++) {
39             if (production[i][j] == ch) {
40                 if (j + 1 < len) {
41                     char next = production[i][j + 1];
42                     if (isupper(next)) {
43                         int k;
44                         for (k = 0; k < limit; k++) {
45                             if (production[k][0] == next) {
46                                 if (production[k][2] != '$')
47                                     addToFollow(production[k][2]);
48                             }
49                         }
50                     } else {
51                         addToFollow(next);
52                     }
53                 } else if (ch != production[i][0]) {
54                     find_follow(production[i][0]);
55                 }
56             }
57         }
58     }
59 }
```

```
60 void addToFollow(char ch) {  
61     int i;  
62     for (i = 0; i < x; i++) {  
63         if (followArray[i] == ch) return;  
64     }  
65     followArray[x++] = ch;  
66 }
```

Enter Total Number of Productions: 4  
Value of Production Number [1]: S=AaAb  
Value of Production Number [2]: S=BbBa  
Value of Production Number [3]: A=\$  
Value of Production Number [4]: B=\$

Enter production Value to Find Follow: S  
Follow Value of S: { \$ }  
To Continue, Press Y: y

Enter production Value to Find Follow: A  
Follow Value of A: { a b }  
To Continue, Press Y: y

Enter production Value to Find Follow: B  
Follow Value of B: { b a }  
To Continue, Press Y: n

=== Code Execution Successful ===