

Compiler Design

Assignment – 5: Follow Set find

CODE:

```
#include<stdio.h>
#include<ctype.h>
#include<string.h>

int limit, x = 0;
char production[10][10], array[10];

void find_first(char ch);
void find_follow(char ch);
void Array_Manipulation(char ch);

int main()
{
    int count;
    char option, ch;
    printf("\n Enter Total Number of Productions:\t");
    scanf("%d", &limit);
    for(count = 0; count < limit; count++)
    {
        printf("\n Value of Production Number [%d]:\t", count + 1);
        scanf("%s", production[count]);
    }
    do
    {
        x = 0;
        printf("\n Enter production Value to Find Follow:\t");
        scanf(" %c", &ch);
        find_follow(ch);
    }
```

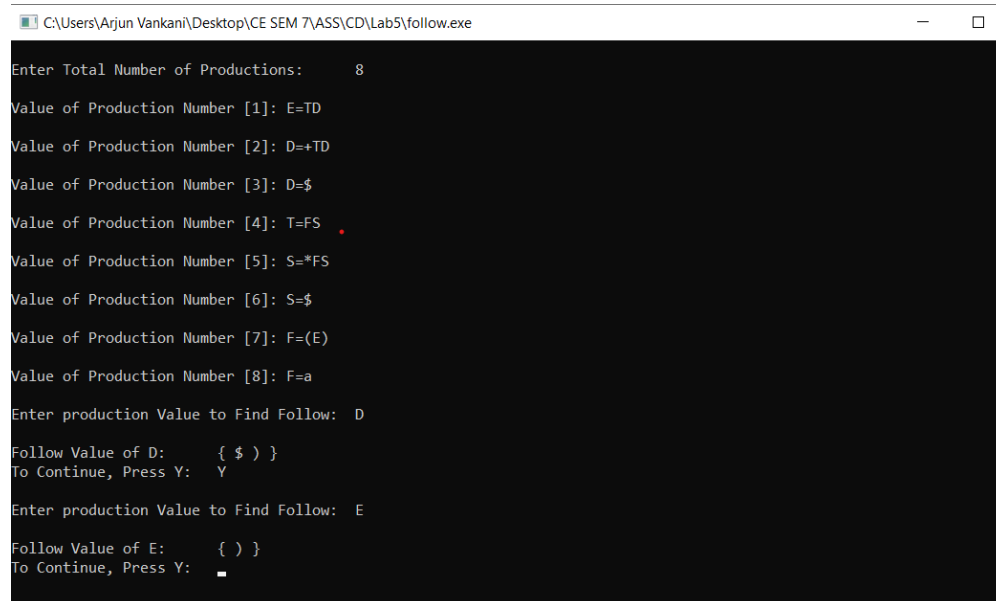
```
printf("\n Follow Value of %c:\t{ ", ch);
for(count = 0; count < x; count++)
{
    printf("%c ", array[count]);
}
printf("}\n");
printf("To Continue, Press Y:\t");
scanf(" %c", &option);
}while(option == 'y' || option == 'Y');
return 0;
}

void find_follow(char ch)
{
    int i, j;
    int length = strlen(production[i]);
    if(production[0][0] == ch)
    {
        Array_Manipulation('$');
    }
    for(i = 0; i < limit; i++)
    {
        for(j = 2; j < length; j++)
        {
            if(production[i][j] == ch)
            {
                if(production[i][j + 1] != '\0')
                {
                    find_first(production[i][j + 1]);
                }
                if(production[i][j + 1] == '\0' && ch != production[i][0])
                {
                    find_follow(production[i][0]);
                }
            }
        }
    }
}
```

```
    }  
    }  
    }  
    }  
}  
  
void find_first(char ch)  
{  
    int i, k;  
    if(!(isupper(ch)))  
    {  
        Array_Manipulation(ch);  
    }  
    for(k = 0; k < limit; k++)  
    {  
        if(production[k][0] == ch)  
        {  
            if(production[k][2] == '$')  
            {  
                find_follow(production[i][0]);  
            }  
            else if(islower(production[k][2]))  
            {  
                Array_Manipulation(production[k][2]);  
            }  
            else  
            {  
                find_first(production[k][2]);  
            }  
        }  
    }  
}
```

```
void Array_Manipulation(char ch)
{
    int count;
    for(count = 0; count <= x; count++)
    {
        if(array[count] == ch)
        {
            return;
        }
    }
    array[x++] = ch;
}
```

Output:



```
C:\Users\Arjun Vankani\Desktop\CE SEM 7\ASS\CD\Lab5\follow.exe
Enter Total Number of Productions:      8
Value of Production Number [1]: E=TD
Value of Production Number [2]: D=+TD
Value of Production Number [3]: D=$
Value of Production Number [4]: T=FS
Value of Production Number [5]: S=*FS
Value of Production Number [6]: S=$
Value of Production Number [7]: F=(E)
Value of Production Number [8]: F=a
Enter production Value to Find Follow:  D
Follow Value of D:      { $ ) }
To Continue, Press Y:   Y
Enter production Value to Find Follow:  E
Follow Value of E:      { ) }
To Continue, Press Y:   Y
```