**Exp. No. 9**

**Write a C program to find FOLLOW( )** **- predictive parser for the given grammar**

**Program:**

**#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("\nEnter Total Number of Productions:\t");**

**scanf("%d", &limit);**

**for(count = 0; count < limit; count++)**

**{**

**printf("\nValue of Production Number [%d]:\t", count + 1);**

**scanf("%s", production[count]);**

**}**

**do**

**{**

**x = 0;**

**printf("\nEnter production Value to Find Follow:\t");**

**scanf(" %c", &ch);**

**find\_follow(ch);**

**printf("\nFollow 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:**

