

18CSC304J Compiler Design Lab

Exercise 5:

Write a program to perform FIRST AND FOLLOW computation and upload the code with output screenshot

Submitted To:-

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CODE For Left Recursion :-

```
#include<stdio.h>
#include<string.h>
#include<ctype.h>
int n,m=0,p,i=0,j=0;
char a[10][10],f[10];
void follow(char c);
void first(char c);
int main(){
    int i,z;
    char c,ch;
    printf("Enter the number of productions:\n");
    scanf("%d",&n);
    printf("Enter the productions:\n");
    for(i=0;i<n;i++)
        scanf("%s%c",a[i],&ch);
    do{
        m=0;
        printf("Enter the elements whose first & follow is to be found:");
        scanf("%c",&c);
        first(c);
        printf("First(%c)={",c);
        for(i=0;i<m;i++)
            printf("%c",f[i]);
        printf("}\n");
        strcpy(f," ");
        m=0;
        follow(c);
        printf("Follow(%c)={",c);
```

```

        for(i=0;i<m;i++)
            printf("%c",f[i]);
        printf("}\n");
        printf("Continue(0/1)?");
        scanf("%d%c",&z,&ch);
    }while(z==1);
    return(0);
}

void first(char c){
    int k;
    if(!isupper(c))
        f[m++]=c;
    for(k=0;k<n;k++){
        if(a[k][0]==c){
            if(a[k][2]=='$')
                follow(a[k][0]);
            else if(islower(a[k][2]))
                f[m++]=a[k][2];
            else first(a[k][2]);
        }
    }
}

void follow(char c){
    if(a[0][0]==c)
        f[m++]='$';
    for(i=0;i<n;i++){
        for(j=2;j<strlen(a[i]);j++){
            if(a[i][j]==c){
                if(a[i][j+1]!='\0')
                    first(a[i][j+1]);
                if(a[i][j+1]!='\0' && c!=a[i][0])
                    follow(a[i][0]);
            }
        }
    }
}

```

```
}  
}  
}
```

OUTPUT:-

```
}  
Enter the number of productions:  
8  
Enter the productions:  
E=TD  
D+=TD  
D=$  
T=FS  
S=*FS  
S=$  
F=(E)  
F=a  
Enter the elements whose first & follow is to be found:E  
First(E)={(a}  
Follow(E)={$)}  
Continue(0/1)?
```