

FIRST AND FOLLOW

PROGRAM

```
#include<stdio.h>

#include<string.h>

#include<ctype.h>

#include<stdlib.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 no. of productions:");

    scanf("%d",&n);

    printf("Enter the productions");

    for(i=0;i<n;i++)

        scanf("%s%c",a[i],&ch);

    do{

        m=0;

        printf("Enter the elements whose first and follow is to be found");

        scanf("%c",&c);

        first(c);

        printf("first(%c)={",c);

        for(i=0;i<m;i++)

            printf("%c",f[i]);
```

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    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];

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```

        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 no. of productions:5
Enter the productions
E=TR
R=+TR/#
T=FY
Y=*FY/#
F=(E)/i
Enter the elements whose first and follow is to be found
E
first(E)={ ( }
Follow(E)={ $ ) }
Continue(0/1)?0
```