

IMPLEMENTATION OF PREDECTIVE PARSING
TABLE (LL(1))

(02/03/2022)

Aim: To Find the Predictive parsing table for given Grammar

Algo:

Grammar

$$\begin{aligned} E &\rightarrow TE' \\ E' &\rightarrow +TE' \\ T &\rightarrow FT' \\ T' &\rightarrow *FT' \\ F &\rightarrow (E) \end{aligned}$$
$$\begin{aligned} \text{First}(E) &= \{(\} \\ \text{First}(E') &= \{+\} \\ \text{First}(T) &= \{(\} \\ \text{First}(T') &= \{*\} \\ \text{First}(F) &= \{(\} \end{aligned}$$

Predictive parsing table:-

Nonterminal	TLP Symbol			
	()	+	*
E	$E \rightarrow TE'$			
E'			$E' \rightarrow +TE'$	
T	$T \rightarrow FT'$			
T'				$T' \rightarrow *FT'$
F	$F \rightarrow (E)$			

CODE:

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

```

char gram[10][10],first[10];
int k=0,n;
void funcfirst(char g,int n)
{
    int i,j;
    if(!(isupper(g)))
        first[k++]=g;
    else
    {
        for(i=0;i<n;i++)
        {
            if(gram[i][0]==g)
            {
                if(islower(gram[i][3]))
                    first[k++]=gram[i][3];
                else
                    funcfirst(gram[i][3],n);
            }
        }
    }
}
int main()
{
    char nt;
    printf("Enter No of Productions ");
    scanf("%d",&n);
    printf("Enter the Productions");
    for(int i=0;i<n;i++)
    {
        scanf("%s",gram[i]);
    }
    printf("...PREDECTIVE PARSING TABLE LL(0)...\n");
    for(int i=0;i<n;i++)

```

```

{
    k=0;

    funcfirst(gram[i][0],n);

    printf("%s--->",gram[i]);

    for(int j=0;j<k;j++)
    {
        printf("{%c,%c}",gram[i][0],first[j]);
    }

    printf("\n");
}

return 0;
}

```

OUTPUT:

```

29 scanf("%d",&n);
30 printf("Enter the Productions");
31 for(int i=0;i<n;i++)
32 {
33     scanf("%s",gram[i]);
34 }
35 printf("...PREDECTIVE PARSING TABLE LL(0)...\n");
36 for(int i=0;i<n;i++)
37 {
38     ...
39 }

```

Enter No of Productions 5
Enter the ProductionsE->TR
R->+TR
T->*FY
Y->*(E)
F->(E)
...PREDECTIVE PARSING TABLE LL(0)...

E->TR	---	{E, (
R->+TR	---	{R, +
T->*FY	---	{T, (
Y->*(E)	---	{Y, *
F->(E)	---	{F, (

...Program finished with exit code 0
Press ENTER to exit console.

RESULT: Hence Predective Parsing Table is Constructed For Given Grammar