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Top Down Parsing in Complier Design Source Code Programming

First include the package and Necessary variable. I use the following function int parse::scannt(char a), void parse::input(),int parse::scant(char b), void parse::process(),void parse::input(), To perform the operation Processing.

Compiler Design Source code Programming

```
#include<iostream.h>
#include<conio.h>
#include<string.h>
class parse
{
int nt,t,m[20][20],i,s,n,p1,q,k,j;
char p[30][30],n1[20],t1[20],ch,b,c,f[30][30],fl[30][30];
public:
int scant(char);
int scannt(char);
void process();
void input();
};

int parse::scannt(char a)
{
int c=-1,i;
for(i=0;i<nt;i++)
{
if(n1[i]==a)
{
return i;
}
}
return c;
}

int parse::scant(char b)
{
int c1=-1,j;
for(j=0;j<t;j++)
{
if(t1[j]==b)
{
return j;
}
}
return c1;
}


void parse::input()

{
cout<<"Enter the number of productions:";
cin>>n;
cout<<"Enter the productions one by one"<<endl;
for(i=0;i<n;i++)
cin>>p[i];
nt=0;
t=0;
}

void parse::process()
{
for(i=0;i<n;i++)
{
if(scannt(p[i][0])==-1)
n1[nt++]=p[i][0];
}
for(i=0;i<n;i++)
{
for(j=3;j<strlen(p[i]);j++)
{
if(p[i][j]!='e')
{
if(scannt(p[i][j])==-1)
{
if((scant(p[i][j]))==-1)
t1[t++]=p[i][j];
```

no greater love than this

if you have find any error/fault on my program/article, Please write it back to me(swstudenton@gmail.com).I will try to fix it.

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```
}
}
}
}
t1[t++]='$';
for(i=0;i<nt;i++)
{
for(j=0;j<t;j++)
m[i][j]=-1;
}
for(i=0;i<nt;i++)
{
cout<<"Enter first["<<n1[i]<<"]:";
cin>>f[i];
}

for(i=0;i<nt;i++)
{
cout<<"Enter follow["<<n1[i]<<"]:";
cin>>fl[i];
}
for(i=0;i<n;i++)
{
p1=scannt(p[i][0]);
if((q=scant(p[i][3]))!=-1)
m[p1][q]=i;
if((q=scannt(p[i][3]))!=-1)
{
for(j=0;j<strlen(f[q]);j++)
m[p1][scant(f[q][j])]=i;
}
if(p[i][3]=='e')
{
for(j=0;j<strlen(fl[p1]);j++)
m[p1][scant(fl[p1][j])]=i;
}
}
for(i=0;i<t;i++)
cout<<"\t"<<t1[i];
cout<<endl;
for(j=0;j<nt;j++)
{
cout<<n1[j];
for(i=0;i<t;i++)
{
cout<<"\t"<<" ";
if(m[j][i]!=-1)
cout<<p[m[j][i]];
}
cout<<endl;
}
}

void main()
{
clrscr();
parse p;
p.input();
p.process();
getch();
}
```

Top Down Parsing in Complier Design output

```
Enter the number of productions:8
Enter the productions one by one
E->TA
A->+TA
A->e
T->FB
B->e
B->*FB
F->(E)
F->i

Enter first[E]: (i
Enter first[A]: +e
Enter first[T]: (i
Enter first[B]: *e
Enter first[F]: (i
Enter follow[E]: $)
Enter follow[A]: $)
Enter follow[T]: +)$
Enter follow[B]: +)$
Enter follow[F]: +*)$
+ ( ) i * $
E E->TA E->TA
A A->+TA A->e A->e
T T->FB T->FB
```

```
B B->e B->e B->*FB B->e
F F->(E) F->i
```

Top down Parsing in Compiler Design Output

```
Enter the no of productions:
8
Enter the production one by one:
E->TX
X->+TX
X->e
T->FY
Y->*FY
Y->e
F->(E)
F->i
Enter FIRST[E](i
Enter FIRST[X]+e
Enter FIRST[T](i
Enter FIRST[Y]*e
Enter FIRST[F](i
Enter FOLLOW[E])$
Enter FOLLOW[X])$
Enter FOLLOW[T]+)$
Enter FOLLOW[Y]+)$
Enter FOLLOW[F]*+)$
+ * ( ) i $
E E->TX E->TX
X X->+TX X->e X->e
T T->FY T->FY
Y Y->e Y->*FY Y->e Y->e
F F->(E) F->i
```

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