

```

#include<iostream>
#include<string>
using namespace std;
int main()
{
    string ip,op1,op2,temp;
    int sizes[10] = {};
    char c;
    int n,j,l;
    cout<<"Enter the Parent Non-Terminal : ";
    cin>>c;
    ip.push_back(c);
    op1 += ip + "\"'->";
    ip += "->";
    op2+=ip;
    cout<<"Enter the number of productions : ";
    cin>>n;
    for(int i=0;i<n;i++)
    {
        cout<<"Enter Production "<<i+1<<" : ";
        cin>>temp;
        sizes[i] = temp.size();
        ip+=temp;
        if(i!=n-1)
            ip += "|";
    }
    cout<<"Production Rule : "<<ip<<endl;
    for(int i=0,k=3;i<n;i++)
    {
        if(ip[0] == ip[k])
        {
            cout<<"Production "<<i+1<<" has left recursion."<<endl;
            if(ip[k] != '#')
            {
                for(l=k+1;l<k+sizes[i];l++)
                    op1.push_back(ip[l]);
                k=l+1;
                op1.push_back(ip[0]);
                op1 += "\"'|";
            }
        }
        else
        {
            cout<<"Production "<<i+1<<" does not have left recursion."
<<endl;
            if(ip[k] != '#')
            {
                for(j=k;j<k+sizes[i];j++)
                    op2.push_back(ip[j]);
                k=j+1;
                op2.push_back(ip[0]);
                op2 += "\"'|";
            }
            else
            {
                op2.push_back(ip[0]);
                op2 += "\"'";
            }
        }
    }
}

```

```
op1 += "#";  
cout<<op2<<endl;  
cout<<op1<<endl;  
return 0;}
```