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import java.io.\*;

import java.util.\*;

public class LeftRecursion{

public static void main(String args[]){

Scanner sc=new Scanner(System.in);

System.out.println(" Enter the number of production rules:");

int n=sc.nextInt();

String rule;

int k=0;

String alpha=new String();

while(k<n){

int flag=0;

rule=sc.next();

String [] arr = rule.split("->"); //S -> Sa|b

String left = arr[0];

String [] right = arr[1].split("\\|"); //Sa|b

for(int i=0;i<right.length;i++){

if(right[i].startsWith(left)){

alpha = right[i].substring(1); flag=1;

}

System.out.println("After Left Recursion Removal");

if(flag==1){

System.out.println(left+"->"+right[1]+left+"'");

System.out.println(left+"->"+alpha+left+"'|e");

}

else{

System.out.println(left+"->"+right[i]);

break;

}

System.out.println();

}

k++;

}

}

}

**OUTPUT**

/\*

students@celab6-19:~$ javac LeftRecursion.java

students@celab6-19:~$ java LeftRecursion

Enter the number of production rules:

2

S->Sa|b

After Left Recursion Removal

S->bS'

S->aS'|E

E->E+T|T

After Left Recursion Removal

E->TE'

E->+TE'|E

\*/