



CS 306 Compiler Design Lab

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CSE

Program 1

Q.1) Write a program to remove left recursion from the grammar.

```
import java.io.*;
public class LeftRecursion {
    public static void main(String args[]) throws IOException {
        BufferedReader br = new BufferedReader(new
        InputStreamReader(System.in));
        System.out.println("Enter the no. of Production Rules: ");
        int n = Integer.parseInt(br.readLine());
        System.out.println("Enter the production rules in the form
        'E->EA|A' : ");
        String s[] = new String[n];
        for(int i=0; i<n; i++){
            s[i] = br.readLine();
        }
        System.out.println("Grammar after removing left recursion if
        any: ");
        for(int i=0; i<n; i++){
            String p = s[i];
            if(p.indexOf('|')== -1 ){
                System.out.println(p);
            }else{
                String[] q = p.split("\\|");
                String a = q[0];
                String b = q[q.length-1];
                if(a.charAt(0) == a.charAt(3)){
                    String x = a.substring(4);
                    char y = a.charAt(0);
                    System.out.println(y + "->" + b + y + "");
                    System.out.print(y + ""->" + x + y + "");
                }
            }
        }
    }
}
```

