6. Implement a C program to eliminate left recursion.

#include<stdio.h>

#include<string.h>

#define SIZE 10

  int main () {

       char non\_terminal;

       char beta,alpha;

       int num;

       char production[10][SIZE];

       int index=3; /\* starting of the string following "->" \*/

       printf("Enter Number of Production : ");

       scanf("%d",&num);

       printf("Enter the grammar as E->E-A :\n");

       for(int i=0;i<num;i++){

            scanf("%s",production[i]);

       }

       for(int i=0;i<num;i++){

            printf("\nGRAMMAR : : : %s",production[i]);

            non\_terminal=production[i][0];

            if(non\_terminal==production[i][index]) {

                 alpha=production[i][index+1];

                 printf(" is left recursive.\n");

                 while(production[i][index]!=0 && production[i][index]!='|')

                      index++;

                 if(production[i][index]!=0) {

                      beta=production[i][index+1];

                      printf("Grammar without left recursion:\n");

                      printf("%c->%c%c\'",non\_terminal,beta,non\_terminal);

                      printf("\n%c\'->%c%c\'|E\n",non\_terminal,alpha,non\_terminal);

                 }

                 else

                      printf(" can't be reduced\n");

            }

            else

                 printf(" is not left recursive.\n");

            index=3;

       }

  }

