2CS701 Compiler Construction

Lab-4 Task

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<u>Aim:</u> To implement the leftmost derivation removal algorithm

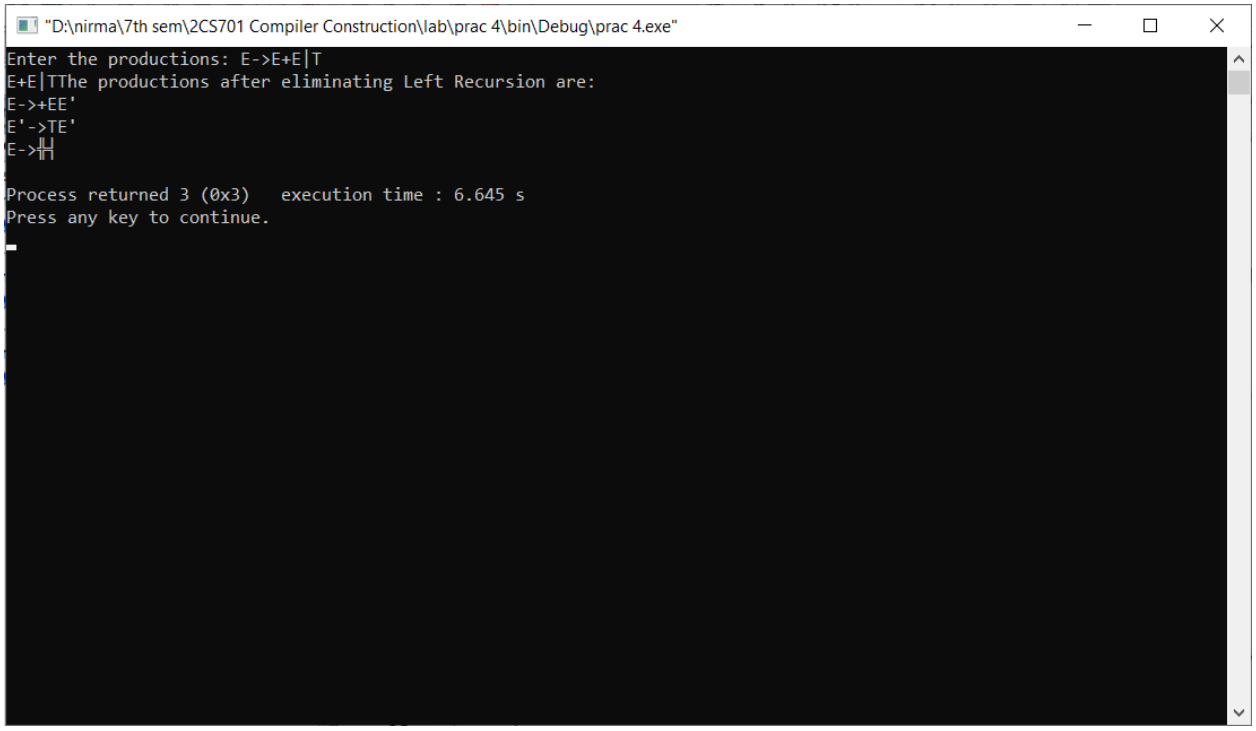
Code:

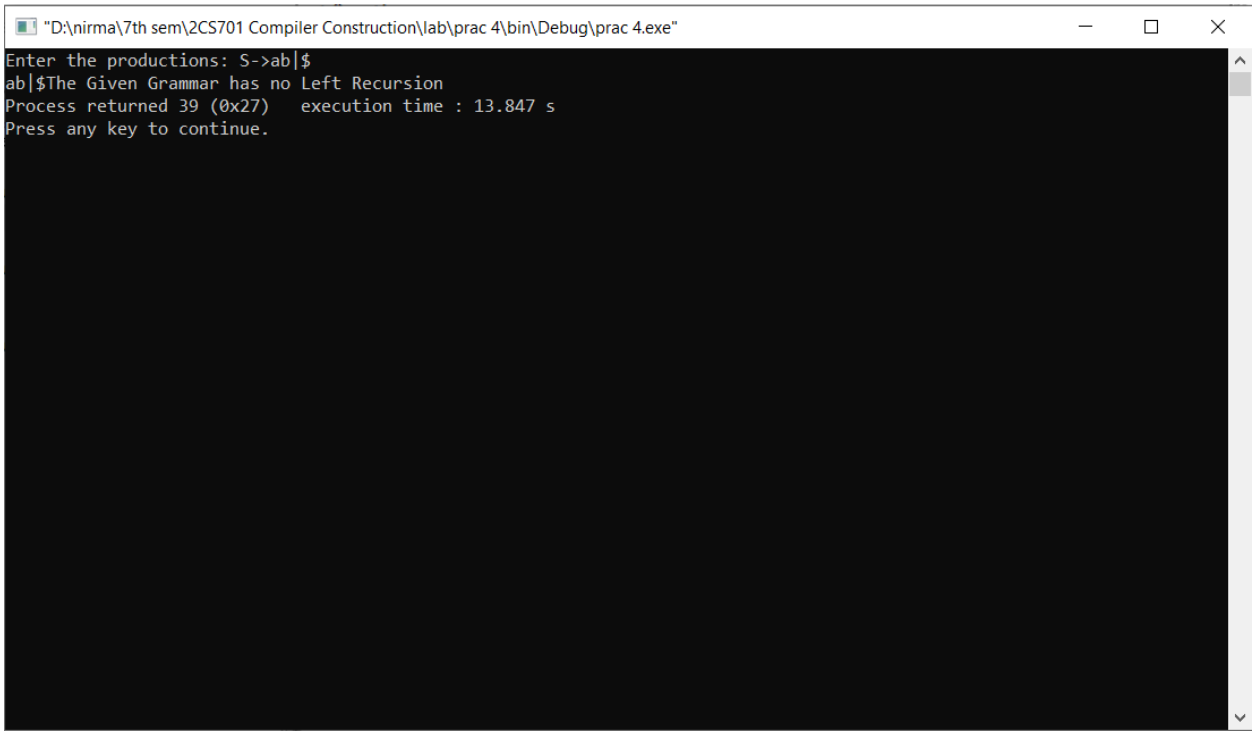
```
#include<stdio.h>
#include<string.h>

void main()  {
    char
input[100],l[50],r[50],temp[10],tempprod[20],productions[25][50]
;
    int i=0,j=0,flag=0,consumed=0;
    printf("Enter the productions: ");
    scanf("%1s->%s",l,r);
    printf("%s",r);
    while(sscanf(r+consumed,"%[^|]s",temp) == 1 && consumed <=
strlen(r))  {
        if(temp[0] == l[0])  {
            flag = 1;
            sprintf(productions[i++],"%s->%s%s'\0",l,temp+1,l);
        }
        else
            sprintf(productions[i++],"%s'->%s%s'\0",l,temp,l);
        consumed += strlen(temp)+1;
    }
```

```
    if(flag == 1)  {
        sprintf(productions[i++],"%s->ε\0",l);
        printf("The productions after eliminating Left Recursion
are:\n");
        for(j=0;j<i;j++)
            printf("%s\n",productions[j]);
    }
    else
        printf("The Given Grammar has no Left Recursion");
}
```

Output:


"D:\nirma\7th sem\2CS701 Compiler Construction\lab\prac 4\bin\Debug\prac 4.exe"
Enter the productions: E->E+E|T
E+E|TThe productions after eliminating Left Recursion are:
E->+EE'
E'->TE'
E->╬
Process returned 3 (0x3)   execution time : 6.645 s
Press any key to continue.


"D:\nirma\7th sem\2CS701 Compiler Construction\lab\prac 4\bin\Debug\prac 4.exe"
Enter the productions: S->ab|$
ab|$The Given Grammar has no Left Recursion
Process returned 39 (0x27)   execution time : 13.847 s
Press any key to continue.