

Dept. of Computer Science & Engineering



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الجامعة الإسلامية شيتا فونغ
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Course Code: CSE-3528

Course Title: Compiler Lab

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OBJECTIVE:

Implement left factoring elimination from a grammar.

RESOURCE:

Code-blocks .

PROGRAM LOGIC:

1. Firstly we will include required directives.
2. Then we will declare the required variables.
3. Then we will enter the terminal & non-terminal both input .
4. If we have the left-factoring pair of productions, then we can eliminate left factoring by replacing the pair of productions.
5. Then we have converted the grammar into a right factoring grammar and we have done the elimination of left factoring .

PROCEDURE:

Go to debug -> run or press CTRL + F9 to run the program.

PROGRAM:

```
#include <bits/stdc++.h>

using namespace std;

int main(){

    char gram[20],part1[20],part2[20],modifiedGram[20],newGram[20],tempGram[20];

    int i,j=0,k=0,l=0,pos;

    cout<<"Enter Production : A->";

    cin>>gram;

    for(i=0;gram[i]!='\0';i++,j++)

        part1[j]=gram[i];

    part1[j]='\0';

    for(j=++i,i=0;gram[j]!='\0';j++,i++)

        part2[i]=gram[j];

    part2[i]='\0';

    for(i=0;i<strlen(part1)||i<strlen(part2);i++) {
```

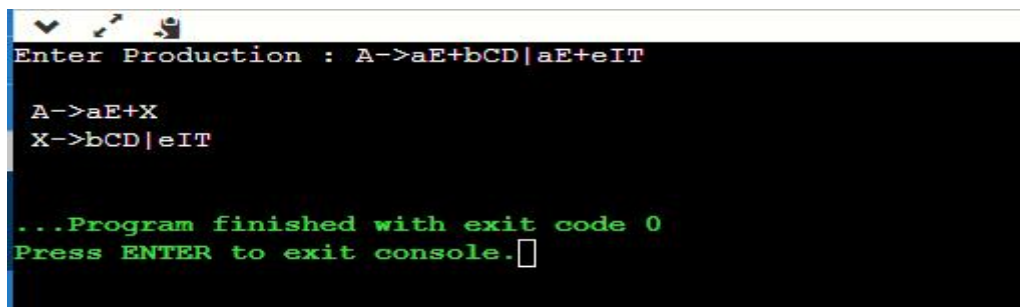
```

    if(part1[i]==part2[i]) {
        modifiedGram[k]=part1[i];
        k++;
        pos=i+1; }
}
for(i=pos,j=0;part1[i]!='\0';i++,j++){
    newGram[j]=part1[i];
}
newGram[j++]='|';
for(i=pos;part2[i]!='\0';i++,j++){
    newGram[j]=part2[i]; }
modifiedGram[k]='X';
modifiedGram[++k]='\0';
newGram[j]='\0';
cout<<"\n A->"<<modifiedGram;
cout<<"\n X->"<<newGram;
cout<<"\n";

return 0;
}

```

INPUT & OUTPUT:



```

Enter Production : A->aE+bCD|aE+eIT

A->aE+X
X->bCD|eIT

...Program finished with exit code 0
Press ENTER to exit console.

```

OUTCOMES:

The implementation is done successfully.