

Dept. of Computer Science & Engineering



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الجامعة الإسلامية بنى فونز
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Course Code: CSE-3528

Course Title: Compiler Lab

Spring-22

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Submission Date: 30.10.22

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]!='|';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.