

PROGRAM

```
#include <stdio.h>
#include <string.h>
int k=0,z=0,i=0,j=0,c=0;
char a[16],ac[20],stk[15],act[10];
void check();
void main()
{
    printf("GRAMMAR is E->E+E\nE->E*E\nE->(E)\nE->id\n");
    puts("Enter input string");
    gets(a);
    c=strlen(a);
    strcpy(act,"SHIFT->");
    puts("stack\tInput\taction");
    for(k=0,i=0;j<c;k++,i++,j++)
    {
        if(a[j]=='i' && a[j+1]=='d')
        {
            stk[i]=a[j];
            stk[i+1]=a[j+1];
            stk[i+2]='\0';
            a[j]=' ';
            a[j+1]=' ';
            printf("\n%s\t%s\t%s\t%sid",stk,a,act);
            check();
        }
        else
        {
            stk[i]=a[j];
            stk[i+1]='\0';
            a[j]=' ';
            printf("\n%s\t%s\t%s\t%symbols",stk,a,act);
            check();
        }
    }
}

void check()
{
    strcpy(ac,"REDUCE TO E");
    for(z=0;z<c;z++)
    if(stk[z]=='i' && stk[z+1]=='d')
    {
        stk[z]='E';
        stk[z+1]='\0';
        printf("\n%s\t%s\t%s\t%s",stk,a,ac);
        j++;
    }
    for(z=0;z<c;z++)
    if(stk[z]=='E' && stk[z+1]=='+' && stk[z+2]=='E')
    {
        stk[z]='E';
```

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    stk[z+1]='\0';
    stk[z+2]='\0';
    printf("\n%s\t%s\t%s",stk,a,ac);
    i=i-2;
}
for(z=0;z<c;z++)
if(stk[z]=='E'&&stk[z+1]=='*'&&stk[z+2]=='E')
{
    stk[z]='E';
    stk[z+1]='\0';
    stk[z+2]='\0';
    printf("\n%s\t%s\t%s",stk,a,ac);
    i=i-2;
}
for(z=0;z<c;z++)
if(stk[z]=='('&&stk[z+1]=='E'&&stk[z+2]=='))'
{
    stk[z]='E';
    stk[z+1]='\0';
    stk[z+2]='\0';
    printf("\n%s\t%s\t%s",stk,a,ac);
    i=i-2;
}
}
}

```

OUTPUT

```

asd@asd-desktop: ~/Desktop
asd@asd-desktop:~/Desktop$ ./a.out
GRAMMAR is E->E+E
E->E*E
E->(E)
E->id
Enter input string
id+id*id
stack  Input  action
$id    +id*id$    SHIFT->id
$E     +id*id$    REDUCE TO E
$E+    id*id$    SHIFT->symbols
$E+id  *id$       SHIFT->id
$E+E   *id$       REDUCE TO E
$E     *id$       REDUCE TO E
$E*    id$       SHIFT->symbols
$E*id  $          SHIFT->id
$E*E   $          REDUCE TO E
$E     $          REDUCE TO E
Easd@asd-desktop:~/Desktop$

```