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#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();
int main()
{
    puts("GRAMMAR is E->E+E \n E->E*E \n E->(E) \n E->id");
    puts("enter input string ");
    scanf("%s",a);
    c=strlen(a);
    strcpy(act,"SHIFT->");
    puts("stack \t input \t action");
    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$\t%sid",stk,a,act);
            check();
        }
        else
        {
            stk[i]=a[j];
            stk[i+1]='\0';
            a[j]=' ';
            printf("\n%s\t%s$\t%ssymbols",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$\t%s",stk,a,ac);
            j++;
        }
        for(z=0; z<c; z++)
        {
            if(stk[z]=='E' && stk[z+1]=='+' && stk[z+2]=='E')
            {
                stk[z]='E';
                stk[z+1]='\0';
                stk[z+2]='\0';
                printf("\n%s\t%s$\t%s",stk,a,ac);
                i=i-2;
            }
        }
        for(z=0; z<c; z++)
        {
            if(stk[z]=='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;
    }
}
```