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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 ");
    gets(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')
        {

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        stk[z] = 'E';
        stk[z + 1] = '\\0';
        stk[z + 1] = '\\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 + 1] = '\\0';
        printf("\\n$%s\\t%s$\\t%s", stk, a, ac);
        i = i - 2;
    }
}

```