C++ CODE

```
#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 \n E->E+E|E*E|(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')
      {
        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;
      }
}
```

IMPLEMENTATION

```
GRAMMAR is
 E->E+E|E*E|(E)|id
enter input string
(id+id)
stack    input   action

$(       id+id)$        SHIFT->symbols
$(id       +id)$        SHIFT->id
$(E        +id)$        REDUCE TO E
$(E+        id)$        SHIFT->symbols
$(E+id        )$        SHIFT->id
$(E+E         )$        REDUCE TO E
$(E           )$        REDUCE TO E
$(E)           $        SHIFT->symbols
$E             $        REDUCE TO E

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

RESULT

Code was successfully implemented and the output was verified.