```c
/*
Name - Amod Dhopavkar
Roll No - 33304
Batch - K11
Problem Statement - RDP

The grammar on which recursive descent parsing is performed is:
E -> E+T | T
T -> T*F | F
F -> (E) | id
*/

#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <ctype.h>
#define SIZE 10

char input[SIZE];
int error, i;
void EFunc();
void EDashFunc();
void TFunc();
void TDashFunc();
void FFunc();

int main() {
    error = 0;
    i = 0;
    printf("\n---Recursive Descent Parser---\n");
    printf("\nEnter an expression:");
    gets(input);
    EFunc();
    if (strlen(input) == i && error == 0) {
        printf("\nACCEPTED...");
    }
    else {
        printf("\nREJECTED...");
    }
}

void EFunc() {
    TFunc();
    EDashFunc();
}
```

```
void EDashFunc() {
   if (input[i] == '+') {
      i++;
      TFunc();
      EDashFunc();
   }
}

void TFunc() {
   FFunc();
   TDashFunc();
}

void TDashFunc() {
   if (input[i] == '*') {
      i++;
      FFunc();
      TDashFunc();
   }
}

void FFunc() {
   if (isalnum(input[i]))i++;

   else if (input[i] == '(') {
      i++;
      EFunc();

      if (input[i] == ')') {
         i++;
      }

      else error = 1;
   }
   else error = 1;
}
```

Output→

```
[amoddhopavkar@Amods-MacBook-Air Documents % gcc RDP.c -o RDP
[amoddhopavkar@Amods-MacBook-Air Documents % ./RDP

---Recursive Descent Parser---

warning: this program uses gets(), which is unsafe.
Enter an expression:a+a*a

ACCEPTED...%
amoddhopavkar@Amods-MacBook-Air Documents %
```