#include <stdio.h>

#include <string.h>

#define SUCCESS 1

#define FAILED 0

int E(), Edash(), T(), Tdash(), F();

const char \*cursor;

char string[64];

int main()

{

puts("CFG for implementing Recursive Descent Parser:\nE -> T E'\nE' -> + T E' | e\nT -> F T'\nT' -> \* F T' | e\nF ->( E ) | i \nEnter the string");

scanf("%s", string);

cursor = string;

puts(string);

puts("Input Action");

puts("--------------------------------");

if (E() && \*cursor == '\0') {

puts("--------------------------------");

puts("String is successfully parsed");

return 0;

} else {

puts("--------------------------------");

puts("Error in parsing String");

return 1;

}

}

int E()

{

printf("%-16s E -> T E'\n", cursor);

if (T()) {

if (Edash())

return SUCCESS;

else

return FAILED;

} else

return FAILED;

}

int Edash()

{

if (\*cursor == '+') {

printf("%-16s E' -> + T E'\n", cursor);

cursor++;

if (T()) {

if (Edash())

return SUCCESS;

else

return FAILED;

} else

return FAILED;

} else {

printf("%-16s E' -> $\n", cursor);

return SUCCESS;

}

}

int T()

{

printf("%-16s T -> F T'\n", cursor);

if (F()) {

if (Tdash())

return SUCCESS;

else

return FAILED;

} else

return FAILED;

}

int Tdash()

{

if (\*cursor == '\*') {

printf("%-16s T' -> \* F T'\n", cursor);

cursor++;

if (F()) {

if (Tdash())

return SUCCESS;

else

return FAILED;

} else

return FAILED;

} else {

printf("%-16s T' -> $\n", cursor);

return SUCCESS;

}

}

int F()

{

if (\*cursor == '(') {

printf("%-16s F -> ( E )\n", cursor);

cursor++;

if (E()) {

if (\*cursor == ')') {

cursor++;

return SUCCESS;

} else

return FAILED;

} else

return FAILED;

} else if (\*cursor == 'i') {

cursor++;

printf("%-16s F ->i\n", cursor);

return SUCCESS;

} else

return FAILED;

}