**Assignment -5**

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Q: Implement a Recursive Descent Parser for the following grammar in C or PYTHON.

E → TE’

E’ → +TE’ |ε

T → F T’

T’→ ∗F T’ |ε

F → (E)|id

Verify the program with the following input statement: (id + (id ∗ id))

A: Code is written in C Programming Language.

#include <stdio.h>

#include <string.h>

char inp[10];

char l;

int i, error;

void E();

void T();

void E1(); //corresponds to E'

void F();

void T1(); //corresponds to T'

void main()

{

    i = 0;

    error = 0;

    printf("Enter the expression :  ");

    gets(inp);

    E();

    if (error == 0)

        printf("Parse Succesful\n");

    else

        printf("Parse Failed\n");

}

void E()

{

    T();

    E1();

}

void T()

{

    F();

    T1();

}

void E1()

{

    if (inp[i] == '+')

    {

        i++;

        T();

        E1();

    }

}

void T1()

{

    if (inp[i] == '\*')

    {

        i++;

        F();

        T1();

    }

}

void F()

{

    if (inp[i] == '(')

    {

        i++;

        E();

        if (inp[i] == ')')

        {

            i++;

        }

        else

        {

            error=1;

        }

    }

    else if (inp[i]== 'i'&&inp[i+1]== 'd')

        i=i+2;

    else

    {

        printf("Error: ");

        error = 1;

    }

}

Verification: (id+(id\*id))

