



**NOTRE DAME UNIVERSITY**  
**BANGLADESH**

**CSE-3104 LAB Report-06**

**Course Title: Compiler Design Lab**

**Course Code: CSE-3104**

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**Lab Task Topic: Compiler Problem Solving using Lex**

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## **Problem:**

Write a C Program to implement Recursive Decent Parser for Grammar:-

$E \rightarrow E+T/T$

$T \rightarrow TF/F*$

$F \rightarrow id.$

## **Solution:**

### **Code : –**

```
//The Recursive Decent Parser is implemented Using C++
#include<string.h>
#include <iostream>
using namespace std;
int i,err;
char inp[10];
void E();
void E1();
void T();
void T1();
void F();
int main(){
    i=0,err=0;
    cout << "Enter String: ";
    cin >> inp;
    E();
    if(strlen(inp)==i && err==0)
        cout << "STRING ACCEPTED...!!\n" << endl;
    else
        cout << "STRING NOT ACCEPTED...!!\n" << endl;
}
void E(){
    T();
    E1();
}
void E1(){
    if(inp[i]=='+'){
        i++;
        T();
        E1();
    }
}
void T(){
    F();
    T1();
}
void T1(){
    if(inp[i]=='*'){
        i++;
        F();
        T1();
    }
}
void F(){
    if(isalnum(inp[i]))
        i++;
    else if(inp[i]=='('){
        i++;
        E();
        if(inp[i]==')')
            i++;
        else
            err=1;
    }
    else
        err=1;
}
}
```

## Recursive Decent Parser Output:

```
"H:\Compiler design\RecursiveDecentParser.exe"  
Enter String: 5*(6+8)  
STRING ACCEPTED...!!  
  
Process returned 0 (0x0)   execution time : 3.522 s  
Press any key to continue.
```

*Output*