**Compiler Design Lab**

**Assignment-4**

**Recursive Descent Parser using C**

**Name : Vikraman S**

**Reg No. : 185001195**

**Code:**

#include<stdio.h>

#include<string.h>

#include<stdlib.h>

#include<ctype.h>

int flag=0;

typedef struct

{

char input[20];

int in;

}string;

int E(string a);

int Eprime(string a);

int T(string a);

int Tprime(string a);

int F(string a);

int E(string a)

{

a.in=T(a);

a.in=Eprime(a);

return a.in;

}

int Eprime(string a)

{

if(a.input[a.in]=='+')

{

a.in++;

a.in=T(a);

a.in=Eprime(a);

}

else if(a.input[a.in]=='-')

{

a.in++;

a.in=T(a);

a.in=Eprime(a);

}

return a.in;

}

int T(string a)

{

a.in=F(a);

a.in=Tprime(a);

return a.in;

}

int Tprime(string a)

{

if(a.input[a.in]=='\*')

{

a.in++;

a.in=F(a);

a.in=Tprime(a);

}

else if(a.input[a.in]=='/')

{

a.in++;

a.in=F(a);

a.in=Tprime(a);

}

return a.in;

}

int F(string a)

{

if(isdigit(a.input[a.in]))

a.in++;

else if(a.input[a.in]=='(')

{

a.in++;

a.in=E(a);

if(a.input[a.in]==')')

{

a.in++;

}

else

flag=1;

}

else

flag=1;

return a.in;

}

void main()

{

string a;

a.in=0;

printf("Enter the string : ");

scanf(" %s",a.input);

printf("\nInput : %s\n",a.input);

a.in=E(a);

if(a.input[a.in]=='$' && flag==0)

printf("\nSuccess\n");

else

printf("\nError\n");

}

**Output:**

