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RECURSIVE PREDICTIVE PARSER - COMPILER LAB - C PROGRAM

Aim:

Parse the following grammar.

$E \rightarrow E + T / T$

$T \rightarrow T * F / F$

$F \rightarrow (E) / id$

Program:

```
#include<stdio.h>
#include<ctype.h>
#include<stdlib.h>
#include<string.h>
void err(const char* s)
{
    perror(s);
    exit(0);
}
int factor()
{
    int val,i;
    char ch[0];
    scanf("%s",ch);
    switch(ch[0])
    {
        case '(':
            val=expr();
            scanf("%s",ch);
            if(ch[0]!='')
                err("Missing closing paranthesis in factor.");
            break;
        default :{
            for(i=0;i<strlen(ch);i++)
            {
                if((ch[i]>'0')&&(ch[i]<='9'))
                    continue;
                else
                    err("Illegal character sequence in place of factor.");
            }
            val=atoi(ch);
        }
    }
    return val;
}
int term()
{
    int val;
    char ch[10];
    val=factor();
    while(1)
    {
        scanf("%s",ch);
        if(ch[0]=='*')
        {
```

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```

val=val*factor();
}
else
break;
}
ungetc(ch[0],stdin);
return val;
}
int expr()
{
int val;
char ch[10];
val=term();
while(1)
{
scanf("%s",ch);
if(ch[0]=='+')
val=val+term();
else
break;
}
ungetc(ch[0],stdin);
return val;
}
main()
{
printf("\nEnter the expression: ");
printf("\n Result: %d\n",expr());
}

```

Output:

```

nn@linuxmint ~ $ gcc rec.c
nn@linuxmint ~ $ ./a.out
Enter the expression: 5 * ( 3 + 1 )
;
Result: 20
nn@linuxmint ~ $

```

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Assignment-II

Korose & Ross - S6 DCCN Application layer slide-

Select Lines Starting with 'm' - Lex Program - Com...

Count The Number of Lines,Words and Characters - L...

Remove All The Occurrences of a Word or Letter - L...

Count The Number of Occurrences of a Particular Wo...

Replace Sequences of White Spaces by a Single Blan...

Comment Removal - Lex Program - Compiler Design

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