Exp. No. 33

Write a LEX program to implement basic mathematical operations.

Program: (cal.l)

```
%{
#undef yywrap
#define yywrap() 1
int f1=0,f2=0;
char oper;
float op1=0,op2=0,ans=0;
void eval();
%}

DIGIT [0-9]
NUM {DIGIT}+(\.{DIGIT}+)?
OP [*|+-]

%%

{NUM} {
        if(f1==0)
        {
                op1=atof(yytext);
                f1=1;
        }

        else if(f2==-1)
        {
                op2=atof(yytext);
                f2=1;
        }

        if((f1==1) && (f2==1))
        {
                eval();
                f1=0;
                f2=0;
```

```
        }
}

{OP} {

        oper=(char) *yytext;
        f2=-1;
}

[\n] {

        if(f1==1 && f2==1)
        {
                eval;
                f1=0;
                f2=0;
        }
}

%%


int main()
{
        yylex();
}


void eval()
{
        switch(oper)
        {
                case '+':
                        ans=op1+op2;
                        break;

                case '-':
```

```
                ans=op1-op2;
                break;

        case '*':
                ans=op1*op2;
                break;

        case '/':
                if(op2==0)
                {
                        printf("ERROR");
                        return;
                }
                else
                {
                        ans=op1/op2;
                }
                break;
        default:
                printf("operation not available");
                break;
    }
    printf("The answer is = %lf",ans);
}
```

INPUT:

20+30
50*2
50-25
50/2

OUTPUT:

```
Microsoft Windows [Version 10.0.22621.2715]
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C:\Users\Deepak>d:

D:\>cd Slots

D:\Slots>cd Compiler Design

D:\Slots\Compiler Design>flex Ex18mathOpt.l

D:\Slots\Compiler Design>gcc lex.yy.c

D:\Slots\Compiler Design>a.exe
20+30
The answer is = 50.000000
50*2
The answer is = 100.000000
50-25
The answer is = 25.000000
50/2
The answer is = 25.000000
```