

**Ex No: 4**

**Date:**

## **DESIGN A DESK CALCULATOR USING LEX TOOL**

**AIM:**

To create a calculator that performs addition, subtraction, multiplication and division using lex tool.

**ALGORITHM:**

- In the headers section declare the variables that is used in the program including header files if necessary.
- In the definitions section assign symbols to the function/computations we use along with REGEX expressions.
- In the rules section assign dig() function to the dig variable declared.
- In the definition section increment the values accordingly to the arithmetic functions respectively.
- In the user defined section convert the string into a number using atof() function.
- Define switch case for different computations.
- Define the main () and yywrap() function.

**PROGRAM:**

```
% {
int op = 0,i;
float a, b;
% }
dig [0-9]+|([0-9]*)."([0-9]+)
add "+"
sub "-"
mul "*"
div "/"
pow "^"
ln \n
%%
{dig} {digi();}
{add} {op=1;}
{sub} {op=2;}
{mul} {op=3;}
{div} {op=4;}
{pow} {op=5;}
{ln} {printf("\n The Answer :%f\n\n",a);}
%%
digi(){
if(op==0)
a=atof(yytext);
else{
b=atof(yytext);
```

```

switch(op){
case 1:a=a+b;
break;
case 2:a=a-b;
break;
case 3:a=a*b;
break;
case 4:a=a/b;
break;
case 5:for(i=a;b>1;b--)
a=a*i;
break;
}
op=0; } }
main(int argv,char *argc[])
{
yylex();}
yywrap()
{
return 1;
}

```

### OUTPUT:

```

[root@localhost live 210701277]# vi ex4.1
[root@localhost-live 210701277]# lex ex4.1
[root@localhost-live 210701277]# cc lex.yy.c
[root@localhost-live 210701277]# ./a.out
5*4

The Answer: 20.000000

2+3

The Answer: 5.000000

8-2

The Answer: 5.000000

6/3

The Answer: 2.000000

```

### RESULT: