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(y
ytext);
switch(op){ ca
se 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 210701261]# vi ex4.1
[root@localhost-Live 210701261]# lex ex4.1
[root@localhost-live 210701261]# cc lex.yy.c
[root@localhost-live 210701261]#./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: