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 210701317]# vi ex4.1
[root@localhost-live 210701317]# lex ex4.1
[root@localhost-live 210701317]# cc lex-yy-c
[root@localhost-live 210701317]# -/a.out

5*4

 The Answer : 20.000000

2+3

The Answer : 5.000000

8-2

The Answer : 6.000000

6/3

The Answer : 2.000000
```

RESULT: