Ex No: 4
Date: 05/03/24

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 210701515]# vi exp4.l
[root@localhost-live 210701515]# lex exp4.l
[root@localhost-live 210701515]# cc lex.yy.c
[root@localhost-live 210701515]# ./a.out
6*2

 The Answer : 12.000000

5+5

 The Answer : 10.000000

6-3

 The Answer : 3.000000

8/2

 The Answer : 4.000000
```

RESULT:

Thus to create a calculator that performs addition, subtraction, multiplication and division using lex tool has been executed.

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