

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 210701304]# vi exp4.l
[root@localhost-live 210701304]# lex exp4.l
[root@localhost-live 210701304]# cc lex.yy.c
[root@localhost-live 210701304]# ./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.

