Exp 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:

1. Initialize variables and declare a function prototype.
2. Define patterns for digits, arithmetic operations, and line breaks.
3. Implement lexical rules to perform actions based on matched patterns.
4. Define a function to convert tokens to floats and perform arithmetic operations.
5. Invoke lexical analysis in the main function.
6. Indicate the end of input with the yywrap() function.

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PROGRAM:

```
%{
int op = 0,i;
float a, b; int
digi();
%}

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);}

%%
int digi()
{
if(op==0)

/* atof() is used to convert
        - the ASCII input to float */ 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;
}
}

int main(int argv,char *argc[])
```

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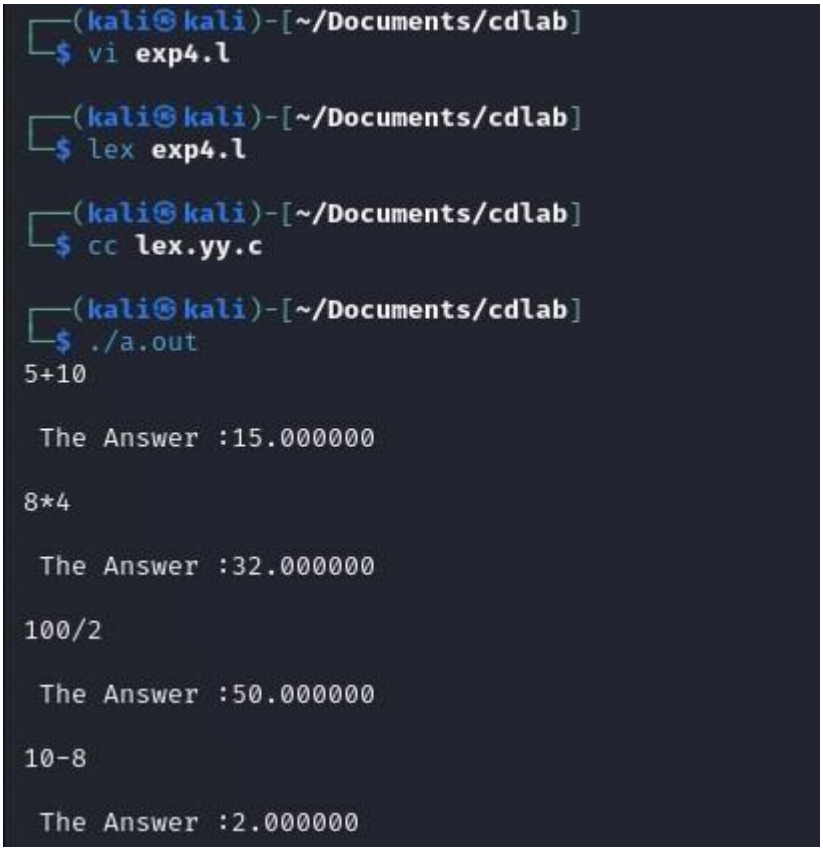
```
{ yylex();
}

int yywrap()
{ return
1; }
```

OUTPUT:



RESULT:

Thus, a calculator that performs addition, subtraction, multiplication and division using lex tool is implemented.