OUTPUT:

```
┌──(kali㉿kali)-[~/Documents/cdlab]
└─$ vi exp2.l

┌──(kali㉿kali)-[~/Documents/cdlab]
└─$ lex exp2.l

┌──(kali㉿kali)-[~/Documents/cdlab]
└─$ gcc lex.yy.c

┌──(kali㉿kali)-[~/Documents/cdlab]
└─$ ./a.out
int a = b + c;
int keywords
 a Identifier
 = Relational Operators
 b Identifier
 + Arithmetic Operators
 c Identifier
; others
float t = 0.5 * a;
float keywords
 t Identifier
 = Relational Operators
 1741780218 Numbers
. others
1741780220 Numbers
 * Arithmetic Operators
 a Identifier
; others
```

RESULT:

Thus, a c program is implemented to identify C keywords, identifiers, operators, end statements like [], {} using LEX tool.

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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.

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[])
{  yylex();  }  int yywrap()
   {  return 1;
}
```

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