

# Practical 1.

## Aim:

Implement lexical analyzer to recognize all distinct token class (using Lex).

## Code:

### pract1.l

```
%{
    int count = 0;
}%
digit [0-9]
letter [a-zA-Z]
eof [;]
operator [+|-|=|/|*|%]
%%
bool|int|float|char { printf("\n<keyword , %s >",yytext);}
{letter}({letter}|{digit})* { printf("< id %d , %s >",++count,yytext);}
{eof} { printf("\n punctuation %s",yytext);}
{operator} { printf("\n<opertor , %s >",yytext);}
{digit}({digit})* { printf("\n<number , %s >",yytext);}
%%
int yywrap()
{return 1;}
int main(int argc, char **argv)
{

    FILE *f1;
    f1 = fopen("sample.c","r");
    yyin = f1;
    yylex();
    printf("Total number of identifier : %d",count);
    return 0;

}
```

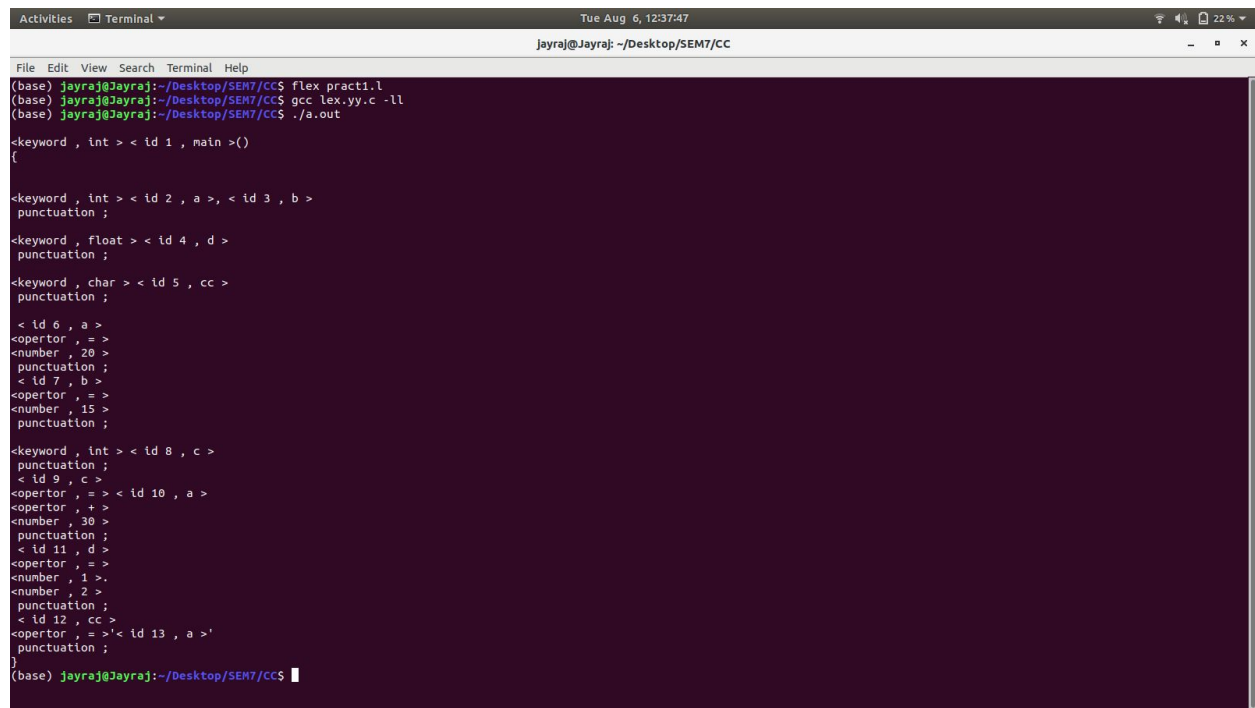
## Input:

```
int main()
{

    int a, b;
    float d;
    char cc;

    a = 20;
    b = 15;
    int c;
    c = a + 30;
    d=1.2;
    cc='a';
}
```

## Output:



```
Activities Terminal Tue Aug 6, 12:37:47
jayraj@Jayraj: ~/Desktop/SEM7/CC

File Edit View Search Terminal Help
(base) jayraj@Jayraj:~/Desktop/SEM7/CC$ flex pract1.l
(base) jayraj@Jayraj:~/Desktop/SEM7/CC$ gcc lex.yy.c -ll
(base) jayraj@Jayraj:~/Desktop/SEM7/CC$ ./a.out

<keyword , int > < id 1 , main >()
(

<keyword , int > < id 2 , a > , < id 3 , b >
punctuation ;

<keyword , float > < id 4 , d >
punctuation ;

<keyword , char > < id 5 , cc >
punctuation ;

< id 6 , a >
<operator , = >
<number , 20 >
punctuation ;
< id 7 , b >
<operator , = >
<number , 15 >
punctuation ;

<keyword , int > < id 8 , c >
punctuation ;
< id 9 , c >
<operator , = > < id 10 , a >
<operator , + >
<number , 30 >
punctuation ;
< id 11 , d >
<operator , = >
<number , 1.2 >
punctuation ;
< id 12 , cc >
<operator , = > < id 13 , a >
punctuation ;
)
(base) jayraj@Jayraj:~/Desktop/SEM7/CC$
```

## Analysis:

Here the syntaxes that include operators, data types, numbers, etc. have been identified from the input c program. The corresponding identifier/operand/keyword is printed in a structured format, a screenshot of which has been attached here. Regular expressions were used for this purpose.