

A)Write a lex program to count no. of characters, words, lines, spaces.

CODE:

```
%{
#include<stdio.h>
int words = 0;
int space = 0;
int characters = 0;
int lines = 0;
}%

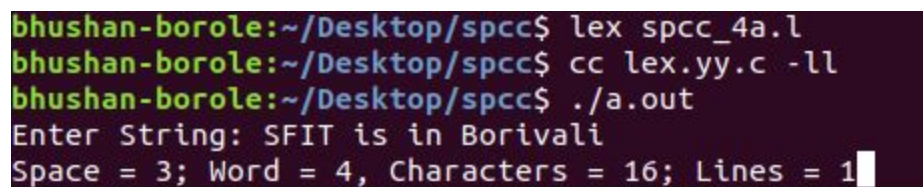
%%
[ ]+ {space++; words++;}
[^\t\n] {characters++;}
[\n] {lines++; words++;printf("Space = %d; Word = %d, Characters = %d;
Lines = %d", space, words, characters, lines);}

%%

int yywrap(){
    return 1;
}

int main(){
    printf("Enter String: ");
    yylex();
    return 0;
}
```

OUTPUT:



```
bhushan-borole:~/Desktop/spcc$ lex spcc_4a.l
bhushan-borole:~/Desktop/spcc$ cc lex.yy.c -ll
bhushan-borole:~/Desktop/spcc$ ./a.out
Enter String: SFIT is in Borivali
Space = 3; Word = 4, Characters = 16; Lines = 1
```

B) Write a lex program to implement a Calculator.

CODE:

```
%option noyywrap
```

```
%{  
#include <stdio.h>  
int op = 0;  
float a,b;  
%}
```

```
dig [0-9]+|([0-9]*)."([0-9]+)  
add "+"  
sub "-"  
mul "*"  
div "/"  
ln \n
```

```
%%
```

```
{dig} {digi();}  
{add} {op = 1;}  
{sub} {op = 2;}  
{mul} {op = 3;}  
{div} {op = 4;}  
{ln} {printf("\n Result = %2f", a);}
```

```
%%
```

```
int digi(){  
    if (op == 0){  
        a = atof(yytext);  
    }  
    else{
```

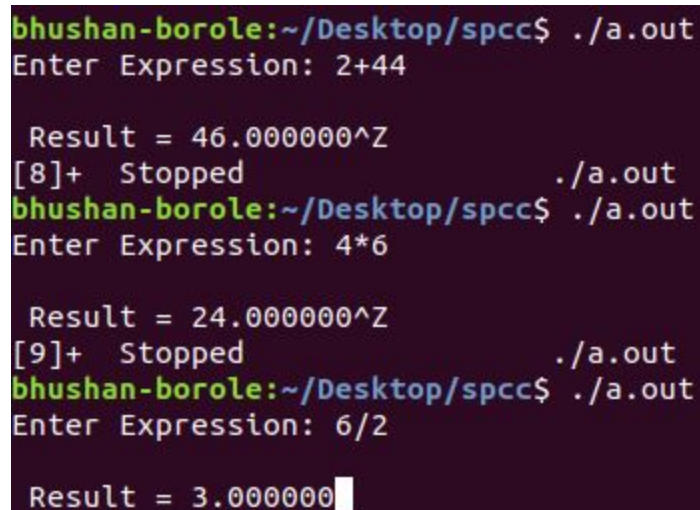
```

        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;
        }
        op = 0;
    }
}

int main(){
    printf("Enter Expression: ");
    yylex();
    return 0;
}

```

OUTPUT:



```

bhushan-borole:~/Desktop/spcc$ ./a.out
Enter Expression: 2+44

Result = 46.000000^Z
[8]+ Stopped ./a.out
bhushan-borole:~/Desktop/spcc$ ./a.out
Enter Expression: 4*6

Result = 24.000000^Z
[9]+ Stopped ./a.out
bhushan-borole:~/Desktop/spcc$ ./a.out
Enter Expression: 6/2

Result = 3.000000

```