

## CC LAB 03 | Lex Program

**Aim:** Count number of words starting with 'A'

**Implementation:**

```
%option noyywrap
%{
    #include <stdio.h>
    int a_count =0;
%}

alpha    [a-zA-Z]
digit    [0-9]
space    [ \t\n]
start    ^a

%%

{start} {a_count++;}
{space}[a|A][{alpha}|{digit}]* {a_count++;}
end return 0;

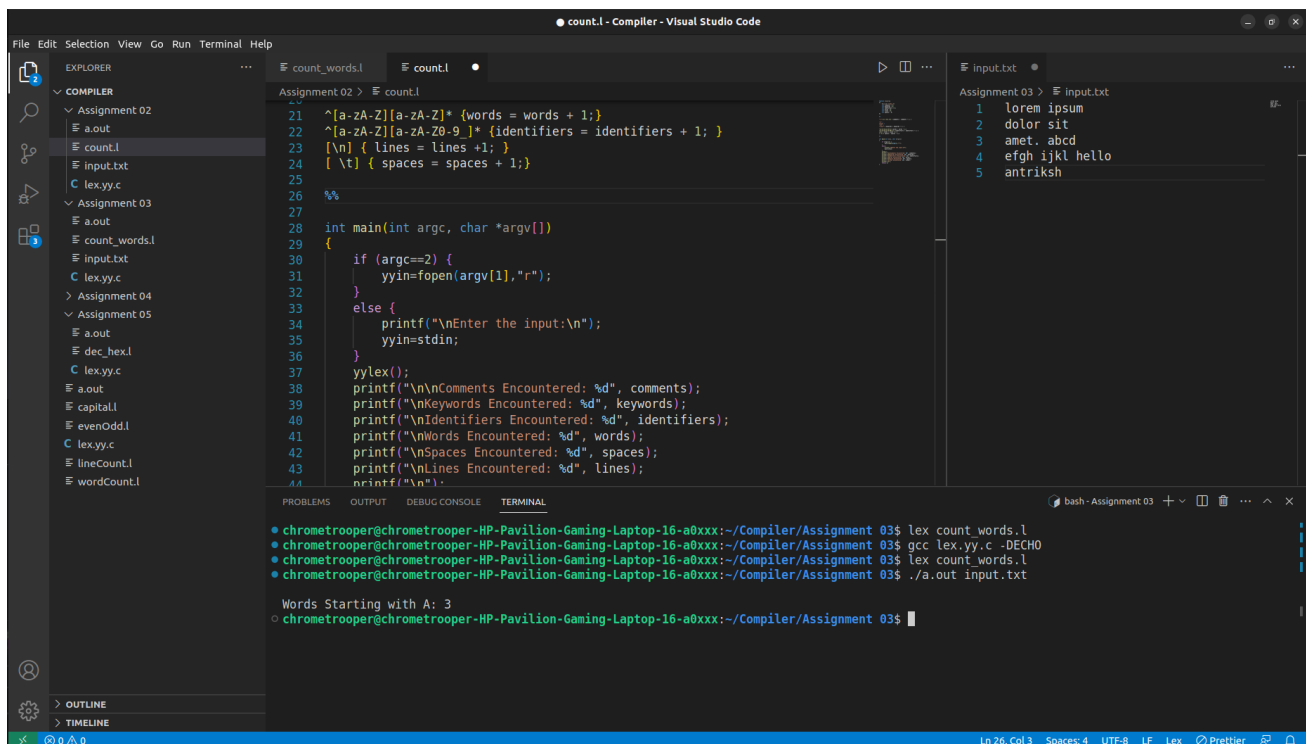
%%

int main(int argc, char *argv[])
{
    if (argc==2) {
        yyin=fopen(argv[1], "r");
    }
    else {
        printf("\nEnter the input:\n");
        yyin=stdin;
    }
    yylex();
    printf("\nWords Starting with A: %d\n", a_count);
    return 0;
}
```

## Input File:

```
input.txt
Assignment 03 > input.txt
1  lorem ipsum
2  dolor sit
3  amet. abcd
4  efgh ijkl hello
5  antriksh
```

## Output:



The screenshot shows a Visual Studio Code editor with a C program in `count.c` and its output in the terminal. The program uses a lexer to process the input file `input.txt` and counts various tokens.

```
count.c
21 ^[a-zA-Z][a-zA-Z]* {words = words + 1;}
22 ^[a-zA-Z][a-zA-Z0-9]* {identifiers = identifiers + 1;}
23 [\n] { lines = lines + 1; }
24 [\t] { spaces = spaces + 1; }
25
26 %%
27
28 int main(int argc, char *argv[])
29 {
30     if (argc==2) {
31         yyin=fopen(argv[1],"r");
32     }
33     else {
34         printf("\nEnter the input:\n");
35         yyin=stdin;
36     }
37     yylex();
38     printf("\nComments Encountered: %d", comments);
39     printf("\nKeywords Encountered: %d", keywords);
40     printf("\nIdentifiers Encountered: %d", identifiers);
41     printf("\nWords Encountered: %d", words);
42     printf("\nSpaces Encountered: %d", spaces);
43     printf("\nLines Encountered: %d", lines);
44     printf("\n");
45 }
```

```
terminal
chrometrooper@chrometrooper-HP-Pavilion-Gaming-Laptop-16-a0xxx:~/Compiler/Assignment 03$ lex count_words.l
chrometrooper@chrometrooper-HP-Pavilion-Gaming-Laptop-16-a0xxx:~/Compiler/Assignment 03$ gcc lex.yy.c -DECHO
chrometrooper@chrometrooper-HP-Pavilion-Gaming-Laptop-16-a0xxx:~/Compiler/Assignment 03$ lex count_words.l
chrometrooper@chrometrooper-HP-Pavilion-Gaming-Laptop-16-a0xxx:~/Compiler/Assignment 03$ ./a.out input.txt

Words Starting with A: 3
chrometrooper@chrometrooper-HP-Pavilion-Gaming-Laptop-16-a0xxx:~/Compiler/Assignment 03$
```