Name: Sangeet Agrawal, PRN: 21070122140, CS-B3 (2021-25)

Practical No-3

* Title: Count number of words starting with 'A'.

* Objectives: Students will learn and implement
  → Lex as a scanner
  → Count number of words starting with specific letter.

* Description:

i) Create a LEX file ~~that~~ first.

ii) Initialize count variables as a zero

iii) Write RE for ~~all~~ alphabets, digits, spaces and start.

iv) In Rules section, write rules for start condition and for words starting with 'A'.

v) Counting variables needs to be incremented in the rules section too.

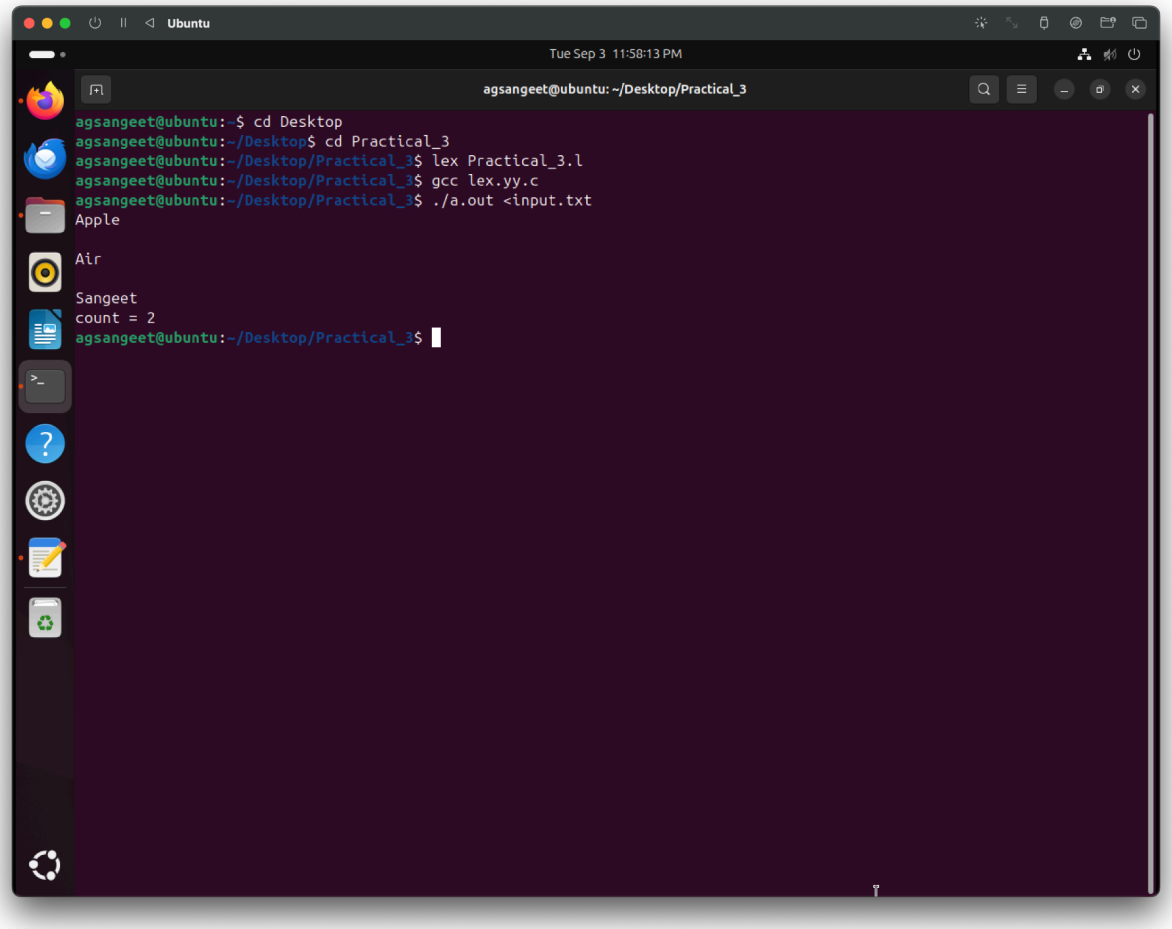
vi) In the main body call yylex() and print the required count.

* Conclusion: Thus, we have implemented a ~~lex~~ scanner to count the number of words starting with a specific letter.

Code:

```
%{
#include <stdio.h>
int count = 0;
%}

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

%%
^[aA][a-zA-Z0-9]*    {
    printf("%s\n", yytext);
    count++;
}
{space}([aA][a-zA-Z0-9]*)    {
    printf("%s\n", yytext);
    count++;
}
%%

int main() {
    yylex();
    printf("count = %d\n", count);
    return 0;
}

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

Output:


Ubuntu
Tue Sep 3 11:58:13 PM
agsangeet@ubuntu: ~/Desktop/Practical_3
agsangeet@ubuntu:~$ cd Desktop
agsangeet@ubuntu:~/Desktop$ cd Practical_3
agsangeet@ubuntu:~/Desktop/Practical_3$ lex Practical_3.l
agsangeet@ubuntu:~/Desktop/Practical_3$ gcc lex.yy.c
agsangeet@ubuntu:~/Desktop/Practical_3$ ./a.out <input.txt
Apple
Air
Sangeet
count = 2
agsangeet@ubuntu:~/Desktop/Practical_3$