

Fidel Soto  
Lab 1  
January 24, 2020

### Changes:

- Added a variable (numCounter) to count the number of Numbers for a given input.
- Added a lex directive that will increment numCounter if a number (defined by the regex [0-9]+) is detected.
- Added a print statement to the yywrap() function that will tell the user how many numbers there are in the input

### Modified Lex Routine:

```
/* This lex routine uses a counting array to match
alphanumeric strings
and make a frequency count.
```

```

The real item to notice is that yywrap() is called at EOF
and then is run
to do what we need to do. yywrap() returns true when we
have a successful
end to the program. We may want to return false (0) if we
want to lexing process
to fail
```

Shaun Cooper  
January 2015

Modified by: Fidel Soto  
Date: January 24, 2020  
Changes:

\*Added a variable (numCounter) to count the number of  
Numbers for a given input.

\*Added a lex directive that will increment numCounter  
if a number ( defined by the regex [0-9]+ ) is detected.

\*Added a print statement to the yywrap() function  
that will tell the user how many numbers there are in the input

```
*/
    int lgths[100];
    int numCounter = 0;
%%
[a-zA-Z]+ lgths[yyval]++;
[0-9]+      { numCounter++; }
.          |
\n         ;
%%
int yywrap()
{
```

```

    int i;
    printf("Length  No. words\n");

    //Print the number of words of length i
    for (i=1; i<100; i++) {
        if (lgths[i] > 0) {
            printf("%5d%10d\n",i,lgths[i]);
        }
    }

    //Print the number of numbers
    printf("\nThere are %d numbers\n\n in this input", numCounter);
    return(1);
}

int main()
{   yylex();

}
`

```

### Makefile:

```

#
#
#   Makefile for Lab1
#   Fidel Soto
#   January 24, 2020
#
#

#Produces the final output. Dependent on lab1
all: lab1

#Compiles lex.yy.c and produces the lab1 object file. Dependent on
lex.yy.c
lab1:    lex.yy.c
        gcc -o lab1 lex.yy.c

#Lexes wordlengthlab1.l and produces the lexed c file (lex.yy.c).
Dependent on wordlengthlab1.l
lex.yy.c: wordlengthlab1.l
        lex wordlengthlab1.l

```

### Output Screenshot:

```

fsoto@lappy18:~/CS_370/Lab_1> ./lab1 < /etc/passwd
Length  No. words
1       43
2       24
3       111
4       59
5       41
6       39
7       53
8        9
10      7
11      4
12      1
14      2
15      1

There are 82 numbers
in this inputfsoto@lappy18:~/CS_370/Lab_1>

```