

Jeffrey Lansford
Lab 1
January 18, 2018

The changes I made is that I added a count variable countNum. In the Lex directives, I added where it increments countNum when it sees a string of numbers from the input. Then in the C function yywrap(), it prints countNum which is the total number of numbers in the file.

Lex routine:

```
/*
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This lab is to help us learn how to use and write Lex programs. The purpose of this lab
was to change the already provide file wordlengthlab1.l to have it additionally count
numbers. The file has already had code that count the number of words in a file. What
I added was some count variables for counting numbers and new lines and in the lex
directives, when the input sees a string of numbers, it increments the count variable
countNum. It also throws anything else that is not a letter or a number. The C function
yywrap prints the total number of words and numbers in the file.
This program does require a input file and the output is the the total number of words and number of
the file.
*/

// array for count the word lengths
int lgths[100];
// count variables for Numbers and New Lines
int countNum = 0;

%%
[a-zA-Z]+    { lgths[yyldleng]++; // counts words at different lengths
              }
[0-9]+       { countNum++; // counts numbers in file
              }
. | \n      { ; // throws out all other characters
              }
%%
yywrap()
{
    // prints total number of words at different lengths, already written
    int i;
    printf("Length No. words\n");
    for (i=1; i<100; i++) {
        if (lgths[i] > 0) {
            printf("%5d%10d\n",i,lgths[i]);
        }
    }
}
```

```

        // prints the variables to show number of numbers and number of Lines
        printf("Number of Numbers:%3d\n",countNum);
        return(1);
    }

main()
{ yylex();

}

```

MakeFile:

```

# Jeffrey Lansford
# Makefile for Lab1
# January 18, 2019
all:
    # two commands for compiling the lex file and the produced C file to get
    # executable lab1
    lex wordlengthlab1.l
    gcc -o lab1 lex.yy.c

```

```

CS370-master/Lab1> lab1 < /etc/passwd
Length  No. words
  1         43
  2          4
  3        111
  4         58
  5         43
  6         38
  7         56
  8          7
 10          7
 11          4
 12          1
 14          2
 15          1
Number of Numbers: 82
CS370-master/Lab1> 

```