Complier Design 19CSE401

Experiment 1b

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Aim:

Program to count the number of characters, words, spaces, end of lines in a given input file.

Procedure:

- Start the Lex tool.
- Write the Lex program (count.l):
- Include necessary headers.
- Define global variables for counting (char_count, word_count, etc.).
- Write Lex rules to match:
    - Words ([a-zA-Z0-9]+)
    - Spaces ([\t]+)
    - Newlines (\n)
    - Any other characters (.)

- Save the program as count.l.
- Open terminal and navigate to the directory containing count.l.
- Compile the Lex program:
  lex count.l
  gcc lex.yy.c -o count –ll
  - Create an input text file, e.g., input.txt, with sample content.
  - Run the compiled program with the input file:
    ./count input.txt
- Observe the output, which displays:
  Number of characters
  Number of words
  Number of spaces
  Number of lines

Program Code:

%{ #include <stdio.h>

int char_count = 0; int word_count = 0; int space_count = 0; int line_count = 0; %}

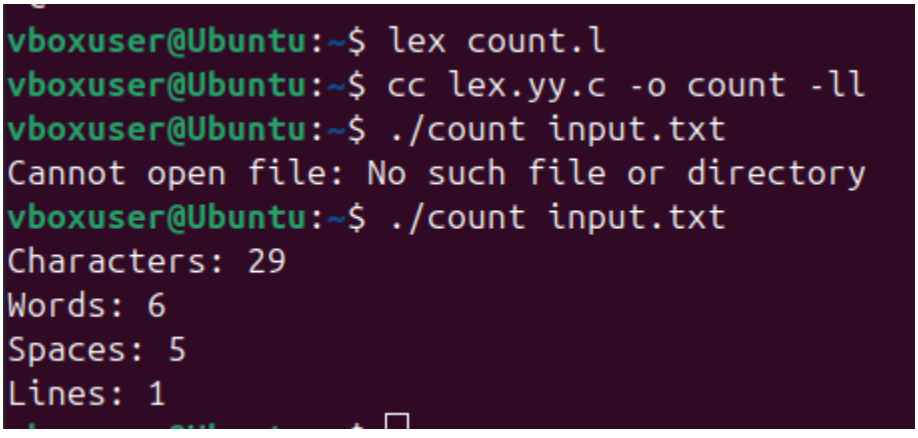
%%

[\t]+ { space_count += yyleng;

```
char_count += yyleng;
} \n
{
line_count++; char_count++;
} [a-zA-Z0-9]+ {
word_count++;
char_count += yyleng;
} . {
 char_count++;
}
%%
int main(int argc, char **argv) {
if (argc > 1) { FILE *file = fopen(argv[1], "r");
if (!file) { perror("Cannot open file"); return 1; }
yyin = file;
}
yylex();
```

```
printf("Characters: %d\n", char_count);
printf("Words: %d\n", word_count);
printf("Spaces: %d\n", space_count);
printf("Lines: %d\n", line_count);

return 0;


}

int yywrap() {

return 1;

}
```

Output:



Result:

Hence, we have successfully found out the number of spaces, end of line and words present in a given string using lex program.