AIM: Write a lex program to count the number of lines, tabs, characters, spaces, and words from the input C program. (Note: It is compulsory to read the input from the file and display the results in another file)

CODE:

Practical_2.c

```
#include <stdio.h>

// Function to calculate factorial
int factorial(int number) {
    int fact = 1, i;
    if (number < 0) {
        return -1;
    } else {
        for (i = number; i >= 1; i--) {
            fact *= i;
        }
        return fact;
    }
}
```

Cd_Practical_2.l

```
#include <ctype.h>

int lines = 0;
int tabs = 0;
int chars = 0;
int spaces = 0;
int words = 0;
%}

%%
\n          { lines++; }
\t          { tabs++; }
[ \t]       { spaces++; }
[a-zA-Z]+   { words++; }
.           { chars++; }
%%

int main(int argc, char **argv) {
    if (argc != 3) {
        fprintf(stderr, "Usage: %s <input file> <output file>\n", argv[0]);
        return 1;
    }

    FILE *infile = fopen(argv[1], "r");
    FILE *outfile = fopen(argv[2], "w");
```

```
    if (!infile || !outfile) {
        perror("File error");
        return 1;
    }

    yyin = infile;
    yyout = outfile;

    yylex();

    fprintf(outfile, "Lines: %d\n", lines);
    fprintf(outfile, "Tabs: %d\n", tabs);
    fprintf(outfile, "Characters: %d\n", chars);
    fprintf(outfile, "Spaces: %d\n", spaces);
    fprintf(outfile, "Words: %d\n", words);

    fclose(infile);
    fclose(outfile);

    return 0;
}
```

OUTPUT:

```
[21012021001@linuxserv ~]$ cat p2.c
#include <stdio.h>

// Function to calculate factorial
int factorial(int number) {
    int fact = 1, i;
    if (number < 0) {
        return -1;
    } else {
        for (i = number; i >= 1; i--) {
            fact *= i;
        }
        return fact;
    }
}
```

```
[21012021001@linuxserv ~]$ lex cd_p2.l
[21012021001@linuxserv ~]$ gcc lex.yy.c -o p2 -ll
[21012021001@linuxserv ~]$ ./p2 p2.c output.txt
[21012021001@linuxserv ~]$ cat output.txt
Lines: 15
Tabs: 0
Characters: 41
Spaces: 90
Words: 27
```