Practical – 3

Q1. Write a Lex program to print out all numbers from the given file.

numbers.l

File Edit View

```
%{
#include <stdio.h>

int yywrap(void);
%}

%%
[0-9]+(\.[0-9]+)?    { printf("Number: %s\n", yytext); }
.|\n                 { /* Ignore other characters */ }
%%

int yywrap() {
    return 1;
}

int main(int argc, char **argv) {
    if (argc > 1)
        yyin = fopen(argv[1], "r");
    yylex();
    return 0;
}
```

Ln 1, Col 1 | 313 characters | Plain text | 100% | Windows (CRLF) | UTF-8

Windows PowerShell

```
PS C:\Users\Jay\Desktop\IMP\Jay\lex> .\numbers.exe
Abc123Def456Ghi789
Number: 123
Number: 456
Number: 789
```

Q2. Write a Lex program to printout all HTML tags in file.

htmltags.l

File Edit View

```
%{
#include <stdio.h>

int yywrap(void);
%}

%%

\<[^>]+\>       { printf("HTML Tag: %s\n", yytext); }
.|\n            { /* Ignore all other characters */ }

%%

int yywrap(void) {
    return 1;
}

int main(int argc, char **argv) {
    if (argc > 1)
        yyin = fopen(argv[1], "r");

    if (!yyin) {
        perror("Cannot open input file");
        return 1;
    }

    yylex();
    return 0;
}
```

Windows PowerShell

```
PS C:\Users\Jay\Desktop\IMP\Jay\lex> .\htmltag.exe .\sample.html
HTML Tag: <html>
HTML Tag: <body>
HTML Tag: <h1>
HTML Tag: </h1>
HTML Tag: </body>
HTML Tag: </html>
PS C:\Users\Jay\Desktop\IMP\Jay\lex>
```

Q3. Write a Lex program to count the number of comment lines in a given C program. Also eliminate them and copy that program into separate file.

CommentRemover.l

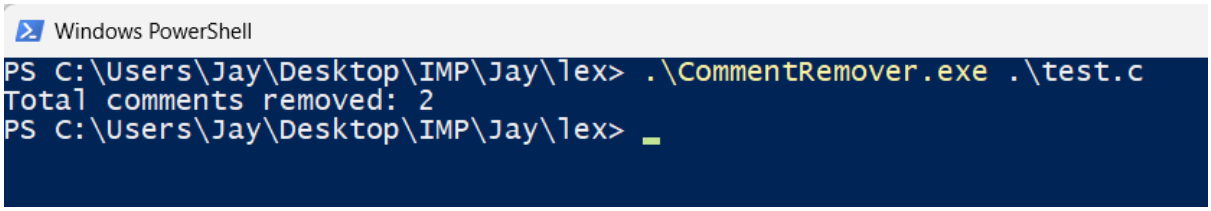
File Edit View

```
%{
#include <stdio.h>

int comment_count = 0;
FILE *out;

int yywrap(void);
%}

%%

\/\/.*                    { comment_count++; } // Remove // comments
\/\*([^*]|\*+[^*/])*\*\/ { comment_count++; } // Remove /* */ comments
.|\n                      { fputc(yytext[0], out); } // Copy everything else

%%

int yywrap(void) {
    return 1;
}

int main(int argc, char **argv) {
    if (argc < 2) {
        printf("Usage: %s input.c\n", argv[0]);
        return 1;
    }

    yyin = fopen(argv[1], "r");
    if (!yyin) {
        perror("Cannot open input file");
        return 1;
    }

    out = fopen("output.c", "w");
    if (!out) {
        perror("Cannot open output file");
        fclose(yyin);
        return 1;
    }

    yylex();

    fclose(yyin);
    fclose(out);

    printf("Total comments removed: %d\n", comment_count);
    return 0;
}
```

Sample test.c:

```
#include stdio.h
int main {
	//First Comment
	//Second Comment
	printf("Comments Removed");
	return 0;
}
```

Output:



Output.c file is generated after running the program: