

Name: Munna Chauhan

Reg No.: CH.EN.U4CSE22176

Date: 21-07-2025

LAB – 2

Aim: To implement Lexical Analyzer Using Lex Tool

Code:

Scanner.l

```
% { #include <stdio.h> int COMMENT = 0; % }

identifier [a-zA-Z_][a-zA-Z0-9_]* %%

#.* { printf("\n%s is a preprocessor directive", yytext); }

/*" { COMMENT = 1; printf("\n%s is a COMMENT", yytext); }

**/" { COMMENT = 0; printf("\n%s is a COMMENT", yytext); }

"int" | "float" | "char" | "double" | "while" | "for" | "struct" | "typedef" | "do" | "if"
| "break" | "continue" | "void" | "switch" | "return" | "else" | "goto" { if
(!COMMENT) printf("\n%s is a keyword", yytext); }

{identifier}( { if (!COMMENT) printf("\nFUNCTION\n\t%s", yytext); }

{ { if (!COMMENT) printf("\nBLOCK BEGINS"); }

} { if (!COMMENT) printf("\nBLOCK ENDS"); }

{identifier}([0-9]*)? { if (!COMMENT) printf("\n%s is an IDENTIFIER",
yytext); }

"([^\"]|\\.)*" { if (!COMMENT) printf("\n%s is a STRING", yytext); }

[0-9]+ { if (!COMMENT) printf("\n%s is a NUMBER", yytext); }

= { if (!COMMENT) printf("\n%s is an ASSIGNMENT OPERATOR",
yytext); }
```

```

"<=" | ">=" | "<" | ">" | "==" { if (!COMMENT) printf("\n%s is a
RELATIONAL OPERATOR", yytext); }

( { if (!COMMENT) ECHO; }

) { if (!COMMENT) ECHO; }

[ \t\n]+ { /* skip whitespace */ }

. { if (!COMMENT) printf("\nUnrecognized character: %s", yytext); }

%%

int main(int argc, char **argv) { FILE *file; file = fopen("var.c", "r");

if (!file) {
    printf("Could not open the file\n");
    return 1;
}

yyin = file;
yylex();
fclose(file);
return 0;}

int yywrap() { return 1; }

```

Output:

```

asecomputerlab@asecomputerlab-HP-ProDesk-400-G7-Microtower-PC:~/Desktop/22077$ flex scanner.l
asecomputerlab@asecomputerlab-HP-ProDesk-400-G7-Microtower-PC:~/Desktop/22077$ gcc lex.yy.c -o scanner
asecomputerlab@asecomputerlab-HP-ProDesk-400-G7-Microtower-PC:~/Desktop/22077$ ./scanner

#include<stdio.h> is a preprocessor directive
#include<conio.h> is a preprocessor directive
void is a keyword
FUNCTION
    main()
BLOCK BEGINS
int is a keyword
a is an IDENTIFIER
Unrecognized character: ,
b is an IDENTIFIER
Unrecognized character: ,
c is an IDENTIFIER
Unrecognized character: ;
a is an IDENTIFIER
= is an ASSIGNMENT OPERATOR
1 is a NUMBER
Unrecognized character: ;
b is an IDENTIFIER
= is an ASSIGNMENT OPERATOR
2 is a NUMBER
Unrecognized character: ;
c is an IDENTIFIER
= is an ASSIGNMENT OPERATOR
a is an IDENTIFIER
Unrecognized character: +
b is an IDENTIFIER
Unrecognized character: ;
FUNCTION
    printf(
"Sum: %d" is a STRING
Unrecognized character: ,
c is an IDENTIFIER)
Unrecognized character: ;
BLOCK ENDSasecomputerlab@asecomputerlab-HP-ProDesk-400-G7-Microtower-PC:~/Desktop/22077$ █

```