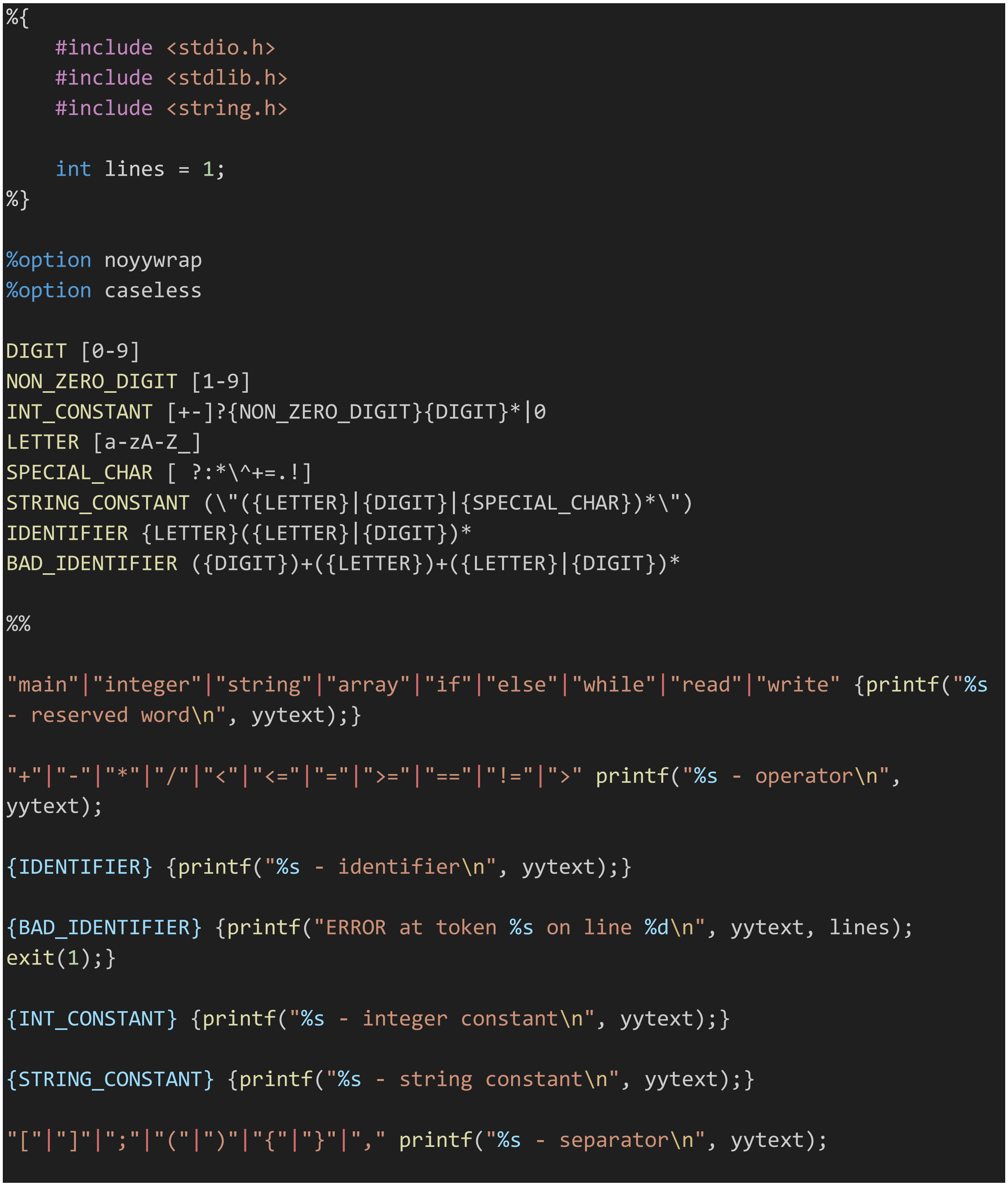
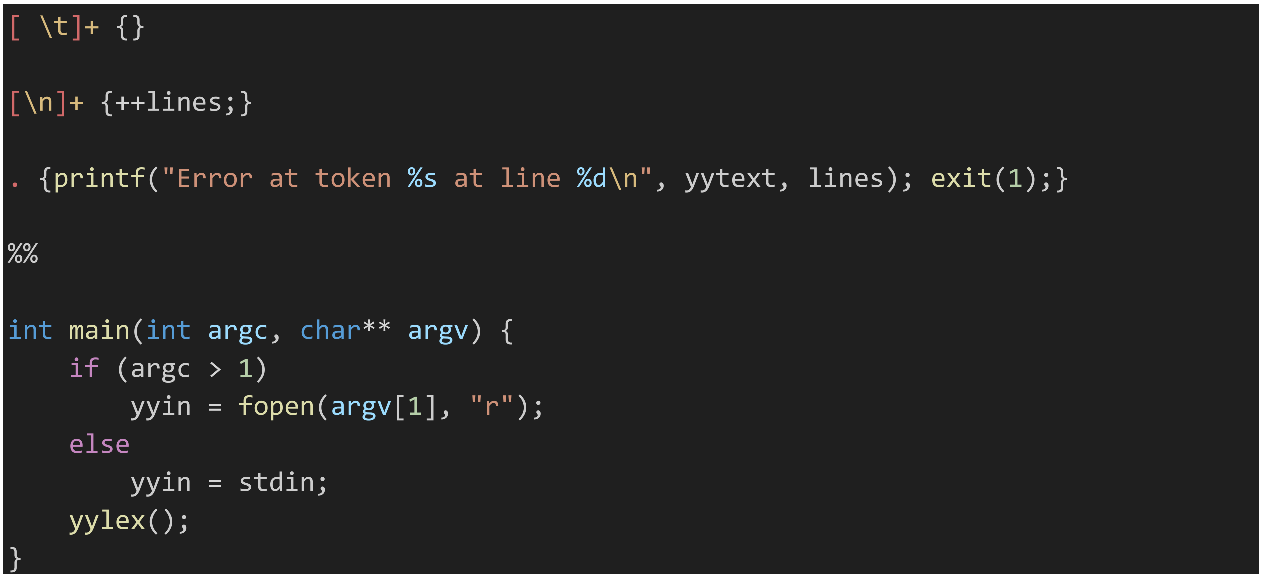
[Formal-Languages-and-Compiler-Design/Lab8 at main · krisztinahorvath/Formal-Languages-and-Compiler-Design (github.com)](https://github.com/krisztinahorvath/Formal-Languages-and-Compiler-Design)

Lang.l



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

    int lines = 1;
%}

%option noyywrap
%option caseless

DIGIT [0-9]
NON_ZERO_DIGIT [1-9]
INT_CONSTANT [+-]?{NON_ZERO_DIGIT}{DIGIT}*|0
LETTER [a-zA-Z_]
SPECIAL_CHAR [ ?:*\^+=.!]
STRING_CONSTANT (\"({LETTER}|{DIGIT}|{SPECIAL_CHAR})*\")
IDENTIFIER {LETTER}({LETTER}|{DIGIT})*
BAD_IDENTIFIER ({DIGIT})+({LETTER})+({LETTER}|{DIGIT})*

%%

"main"|"integer"|"string"|"array"|"if"|"else"|"while"|"read"|"write" {printf("%s
- reserved word\n", yytext);}

"+"|"-"|"*"|"/"|"<"|"<="|"="|">="|"=="|"!="|">" printf("%s - operator\n",
yytext);

{IDENTIFIER} {printf("%s - identifier\n", yytext);}

{BAD_IDENTIFIER} {printf("ERROR at token %s on line %d\n", yytext, lines);
exit(1);}

{INT_CONSTANT} {printf("%s - integer constant\n", yytext);}

{STRING_CONSTANT} {printf("%s - string constant\n", yytext);}

"["|"]"|";"|"("|")"|"{"|"}"|"," printf("%s - separator\n", yytext);
```

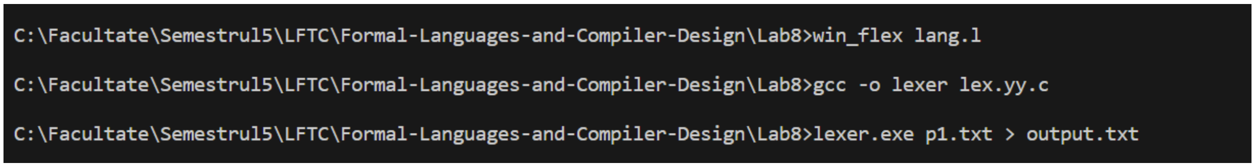


```
[ \t]+ {}

[\n]+ {++lines;}

. {printf("Error at token %s at line %d\n", yytext, lines); exit(1);}

%%

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

Demo:

Prerequisites: have WinFlexBison installed on your Windows machine

1. Generate flex code
2. Compile the generated code
3. Run the the code



```
C:\Facultate\Semestrul5\LFTC\Formal-Languages-and-Compiler-Design\Lab8>win_flex lang.l

C:\Facultate\Semestrul5\LFTC\Formal-Languages-and-Compiler-Design\Lab8>gcc -o lexer lex.yy.c

C:\Facultate\Semestrul5\LFTC\Formal-Languages-and-Compiler-Design\Lab8>lexer.exe p1.txt > output.txt
```

After running all programs with the scanner these are the outputs:

Formal-Languages-and-Compiler-Design/Lab8/output.txt at main · krisztinahorvath/Formal-Languages-and-Compiler-Design (github.com)