

<https://github.com/andreea-buiga/flcd/tree/main/lab8>

```
%{
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
int numberOfLine = 0;
}%

%option noyywrap

IDENTIFIER  [a-zA-Z_][a-zA-Z0-9_]*
INTEGER    0|[+|-]?[1-9][0-9]*([.][0-9]*)?|[+|-]?0[.][0-9]*
STRING     ["'][a-zA-Z0-9_]+["']
CHAR       [\'][a-zA-Z0-9_][\']

%%

"HELLO"|"BYE"|"func"|"read"|"write"|"if"|"endif"|"else"|"for"|"from"|"to"|"endwhile"|"while"|"
int"|"string"|"char"|"bool"|"var"    {printf("Reserved word: %s\n", yytext);}
"+"|"-"|"*"|"/"|"%"|"<="|">="|"="|"!="|"<"|">"|"&&"|"||"    {printf("Operator: %s\n", yytext);}
"{"|"}"|"["|"]"|"("|")"|"["|"]|":"|","|";"|"'"|"#"|"\"    {printf("Separator: %s\n", yytext);}
{IDENTIFIER}    {printf("Identifier: %s\n", yytext);}
{INTEGER}    {printf("Integer: %s\n", yytext);}
{STRING}    {printf("String: %s\n", yytext);}
{CHAR}    {printf("Char: %s\n", yytext);}

[ \t]+ {}
[\n]+ {numberOfLine++;}

[0-9][a-zA-Z0-9_]* {printf("Invalid identifier at line %d\n", numberOfLine);}
[+|-]0 {printf("Invalid integer at line %d\n", numberOfLine);}
[+|-]?0[0-9]*([.][0-9]*)? {printf("Invalid integer at line %d\n", numberOfLine);}
[\'][a-zA-Z0-9_]{2,}[\']|[\'][a-zA-Z0-9_][a-zA-Z0-9_][\'] {printf("Invalid char at line %d\n",
numberOfLine);}
["'][a-zA-Z0-9_]+|[a-zA-Z0-9_]+["'] {printf("Invalid string at line %d\n", numberOfLine);}
. {printf("ERROR! Invalid symbol: %s at line: %d\n", yytext, numberOfLine+1);}

%%

int main( argc, argv )
int argc;
char **argv;
{
    ++argv, --argc; /* skip over program name */
    if ( argc > 0 )
```

```

    yyin = fopen( argv[0], "r" );
else
    yyin = stdin;
yylex();
}

```

## DEMO

Run these commands first.

```

C:\Users\andre\Documents\GitHub\flcd\lab8>flex lang.lxi
C:\Users\andre\Documents\GitHub\flcd\lab8>gcc lex.yy.c

```

Run the executable with the filename you want to test. This is a successful case:

```

C:\Users\andre\Documents\GitHub\flcd\lab8>a.exe p1.txt
Reserved word: HELLO
Reserved word: int
Identifier: a
Separator: ,
Identifier: b
Separator: ,
Identifier: c
Separator: ,
Identifier: max
Separator: ;
Reserved word: read
Identifier: a
Separator: ,
Identifier: b
Separator: ,
Identifier: c
Separator: ;
Reserved word: if
Identifier: a
Operator: >
Identifier: b
Separator: :
Identifier: max
Operator: =
Identifier: a
Separator: ;
Reserved word: else
Separator: :
Identifier: max
Operator: =
Identifier: b
Separator: ;
Reserved word: endif
Reserved word: if
Identifier: max
Operator: <
Identifier: c
Separator: :
Identifier: max
Operator: =
Identifier: c
Separator: ;
Reserved word: endif
Reserved word: write
Identifier: max

```

This is an error case:

```
C:\Users\andre\Documents\GitHub\flcd\lab8>a.exe p1_err.txt
Reserved word: HELLO
Reserved word: int
Identifier: a
Separator: ,
Identifier: b
Separator: ,
Identifier: c
Separator: ,
Identifier: max
Separator: ;
Invalid identifier at line 2
Operator: =
Invalid identifier at line 2
Separator: ;
Reserved word: read
Identifier: read
```