https://github.com/roxanazachman01/FLCD

Documentation:

Finished yacc:

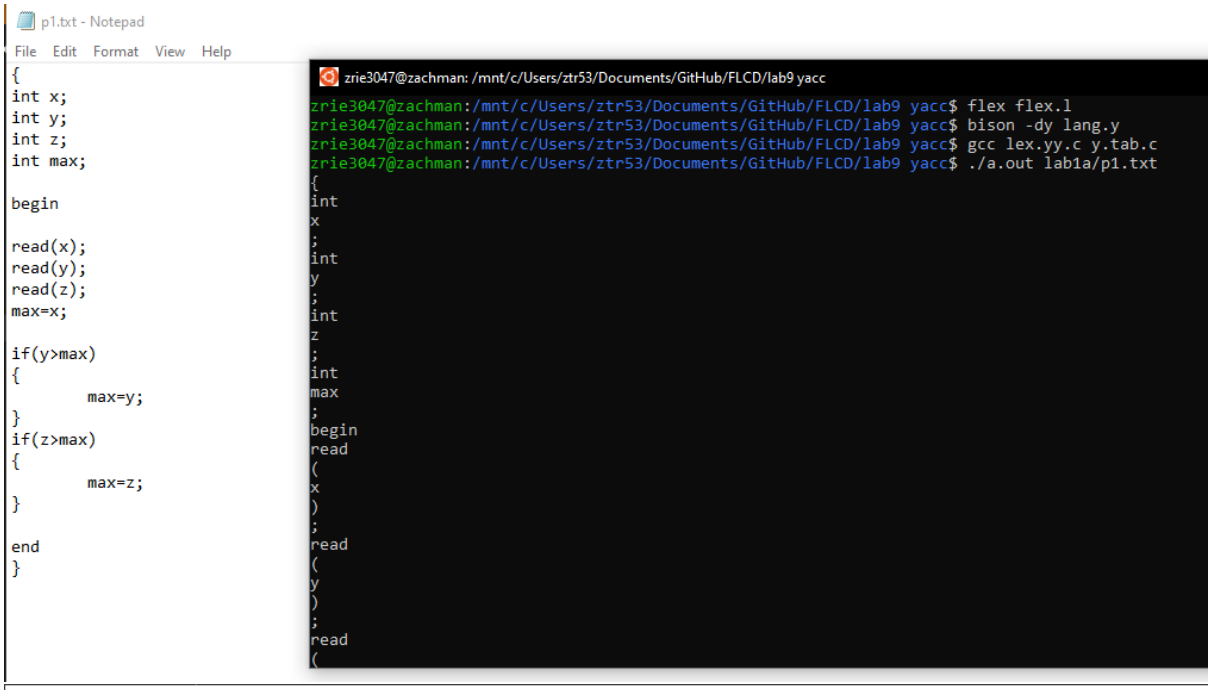
```
%{
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#define YYDEBUG 1

int yylex();
void yyerror();
int indexes[5000],n=0;
void add_index(int index){
	indexes[n]=index;
	n++;
}

void print_indexes(){
	for(int i=0;i<n;i++)
		printf("%d ",indexes[i]);
}
%}

%token CHAR STRING INT IF ELSE READ WRITE WHILE BEGINN END
%token ROP RCP SOB SCB COB CCB COLON
%token PLUS MINUS MULTIPLY DIV LE LT GE GT NE EQ ASSIGN MOD

%token IDENTIFIER
```

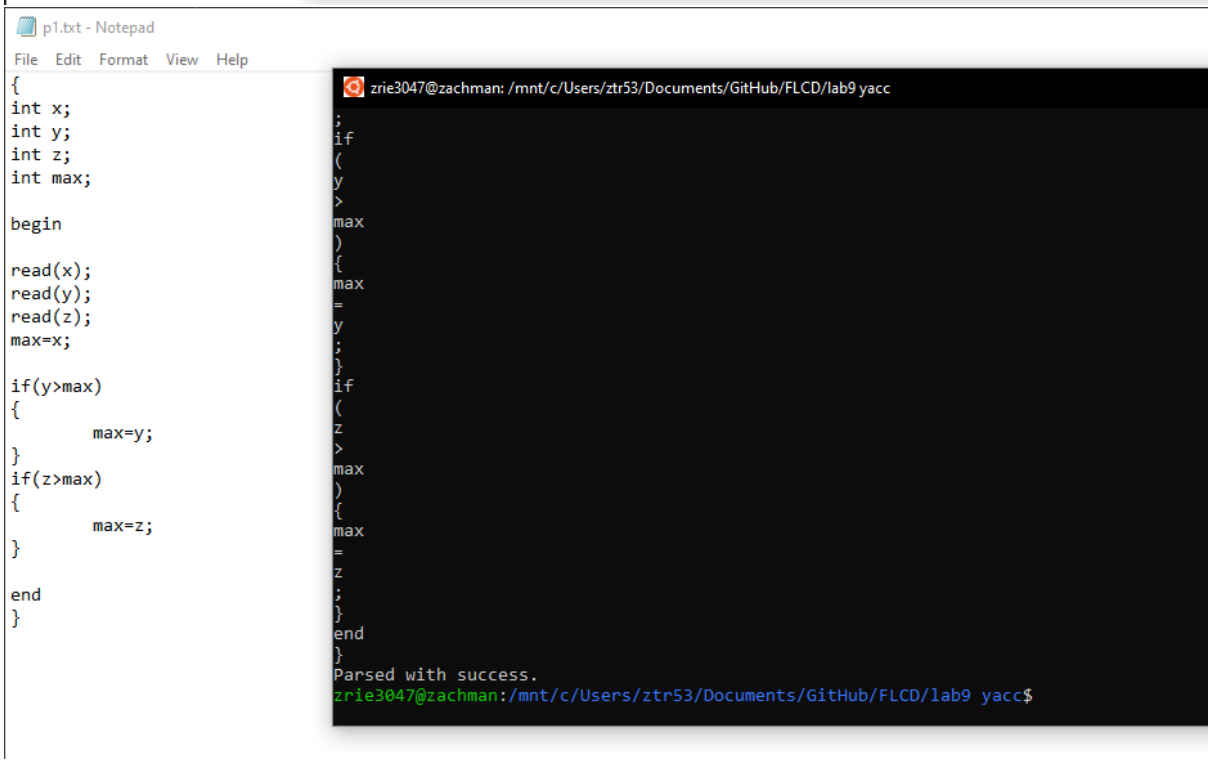
```
%token CONSTNR
%token CONSTCHAR
%token CONSTSTRING

%%

program: COB decllist cmpdstmt CCB
                ;

decllist: declaration decllistlala
                ;
decllistlala: decllist
                |
                ;
declaration: type IDENTIFIER COLON
                ;
type: type1 arraydecl
                ;
type1: INT
                | CHAR
                | STRING
                ;
arraydecl: CONSTNR SCB
                |
                ;
cmpdstmt: BEGINN stmtlist END
                ;
stmtlist: stmt stmtlistlala
                ;
stmtlistlala: stmtlist
                |
```

```
;
stmt: simplstmt COLON
                    | structstmt
;
simplstmt: assignstmt
                    | iostmt
;
assignstmt: IDENTIFIER assignstmtlala ASSIGN expression
;
assignstmtlala: SOB assignstmtlala2 SCB
                    |
;
assignstmtlala2: CONSTNR
                    | IDENTIFIER
;
expression: term expression1
;
expression1: PLUS expression1
                    | MINUS expression1
                    | expression
                    |
;
term: factor term1
;
term1: MULTIPLY term1
                    | MOD term1
                    | DIV term1
                    |
;
factor: ROP expression RCP
                    | IDENTIFIER assignstmtlala
```

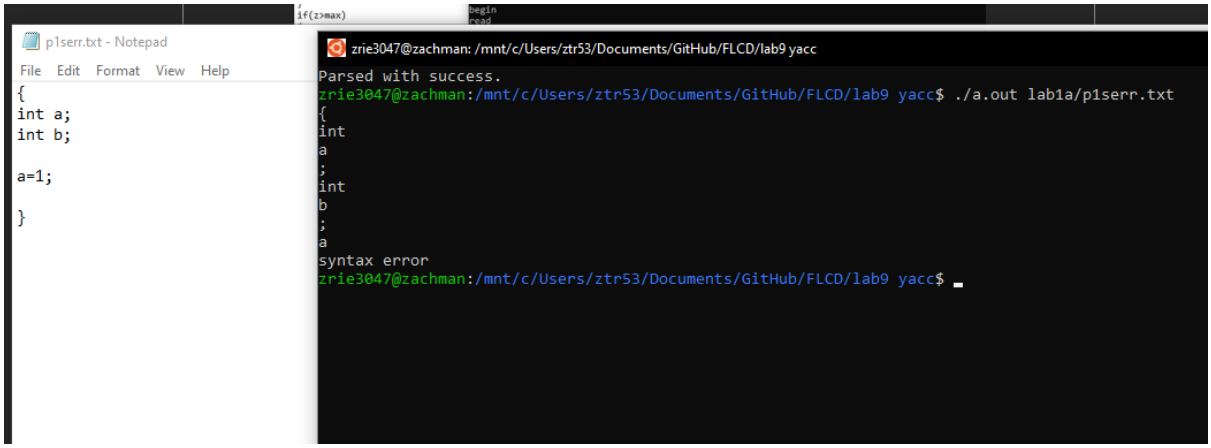
```
                | CONSTNR
;
iostmt: READ ROP IDENTIFIER assignstmtlala RCP
                | WRITE ROP writeitem RCP
;
writeitem: lalaitem
                | IDENTIFIER assignstmtlala
;
lalaitem: CONSTNR
                | CONSTCHAR
                | CONSTSTRING
;
structstmt: ifstmt
                | whilestmt
;
ifstmt: IF ROP condition RCP COB stmtlist CCB elsestmt
;
elsestmt: ELSE COB stmtlist CCB
                |
;
whilestmt: WHILE ROP condition RCP COB stmtlist CCB
;
condition: expression relation expression
;
relation: LT
                | LE
                | GE
                | GT
                | EQ
                | NE
;
```

```
%%

void yyerror(char *s)
{
  printf("%s\n", s);
}

extern FILE *yyin;

int main(int argc, char **argv)
{
  if(argc>1) yyin = fopen(argv[1], "r");
  if((argc>2)&&(!strcmp(argv[2],"-d"))) yydebug = 1;
  if(!yyparse()) {
            fprintf(stderr,"Parsed with success.\n");
            print_indexes();
  }
}
```


p1.txt - Notepad
File Edit Format View Help
{
int x;
int y;
int z;
int max;
begin
read(x);
read(y);
read(z);
max=x;
if(y>max)
{
max=y;
}
if(z>max)
{
max=z;
}
end
}
zrie3047@zachman: /mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc
zrie3047@zachman:/mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc$ flex flex.l
zrie3047@zachman:/mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc$ bison -dy lang.y
zrie3047@zachman:/mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc$ gcc lex.yy.c y.tab.c
zrie3047@zachman:/mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc$ ./a.out lab1a/p1.txt
{
int
x
;
int
y
;
int
z
;
int
max
;
begin
read
(
x
)
;
read
(
y
)
;
read
(


p1.txt - Notepad
File Edit Format View Help
{
int x;
int y;
int z;
int max;
begin
read(x);
read(y);
read(z);
max=x;
if(y>max)
{
max=y;
}
if(z>max)
{
max=z;
}
end
}
zrie3047@zachman: /mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc
;
if
(
y
>
max
)
{
max
=
y
;
}
if
(
z
>
max
)
{
max
=
z
;
}
end
}
Parsed with success.
zrie3047@zachman:/mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc$

Errors:


p1serr.txt - Notepad
File Edit Format View Help
{
int a;
int b;
a=1;
}
zrie3047@zachman: /mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc
Parsed with success.
zrie3047@zachman:/mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc$ ./a.out lab1a/p1serr.txt
{
int
a
;
int
b
;
a
syntax error
zrie3047@zachman:/mnt/c/Users/ztr53/Documents/GitHub/FLCD/lab9 yacc$