**User’s Guide**

**Programming in PL/0**

PL/0 can handle constant definitions, variable declarations, statements as well as procedure declarations. PL/0 ignores whitespace and can handle comments in the following manner:

**/\*** comments are entered inside of the comment open and close comment symbols **\*/**

The following is a simple PL/0 program with comments.

**var x, y;  
begin**

**/\* this is a comment \*/**

**x := y + 56  
end.**

**Datatypes**

PL/0 has support for following datatypes.

* var (variables)
* const (constants)
* procedure (procedures)

\*Integers must be numbers only, identifiers must begin with a letter and can be followed by alphanumeric characters.

**Variables**

Integers must be declared at the top of the program and may have a value assigned to them multiple times throughout the life cycle of the program. PL/0 uses the := symbol as it’s assignment operator.

var x, y, z;

var a := 8;

**Constants**

Constants may only be assigned a value once during a program. You can assign multiples constants at once.

const a := 4, b := 0;

**Procedures**

A procedure acts as a sort of subroutine within your program.

PROCEDURE times10;

procedure times10;

var a, b;

begin

b := 0;

while b < 10 do

begin

a := a + a;

b := b + 1;

end;

end;

**Code Examples**

**if statement**

if a < 0 then b := b + 1

else if a > 0 then c := c + 2

**assignments**

var b := 7;

const x := 5;

**loops**

while x <= 10 do

begin

call foo;

x := x + x

end

**Compilation Instructions**

* All source files as well as input files must be in same directory.
* Navigate to directory where all files reside, including input.txt.
  + Run “gcc -o parser parser.c” to compile
  + Run “./parser” followed by directives “-l”, “-a”, “-v” or no directives.
* The program will prompt the user for the name of the input file.
* Two outcomes are possible:
  + No syntactical errors are found and a message stating the program is syntactically correct will be printed to the screen.
  + The program will encounter a syntax error and will print an error message to the screen along with a brief error description.