

CARLETON UNIVERSITY

Department of Systems and Computer Engineering SYSC 3101 Programming Languages

Lab 0: Introduction to the tools

Date: January 9

Background

In this offering of SYSC 3101, we will use a variety of tools to explore the wonderful world of programming languages. All of these tools are free and run on Windows, Linux and MacOSX (and maybe some other wierd and wonderful operating systems....)

Part 1 - Scheme

Step 1: Locate (or install) DrRacket.

Step 2: Choose the language “pretty big” under the **Language** menu item.

Step 3: Write a program to print “hello world”. (See Section 15.5.5 Output Functions in the text book for help).

Part 2 - Prolog

Step 1: Locate (or install) SWI-Prolog.

Step 2: Write a program to print “hello world”.

- Hint: Go to [http://en.literateprograms.org/Hello_World_\(Prolog\)](http://en.literateprograms.org/Hello_World_(Prolog)) for help.
- Note that **CaSe** is **very important** in Prolog.

Part 3 - Parsing with Bison (Yacc) and Flex (Lex)

This part may be a little bit more tricky than parts 1 and 2.

Step 1: Copy the following three files from the web site:

1. <http://www.sce.carleton.ca/courses/sysc-3101/w12/yacc-lex/gram.y>
2. <http://www.sce.carleton.ca/courses/sysc-3101/w12/yacc-lex/scan.l>
3. <http://www.sce.carleton.ca/courses/sysc-3101/w12/yacc-lex/main.c>

Step 2: Run:

```
bison -dt -o gram.c gram.y
flex -t scan.l > scan.c
cc -c -o gram.o gram.c
cc -c -o scan.o scan.c
cc -c -o main.o main.c
cc -o add main.o gram.o scan.o -lfl
```

- flex and bison are installed in C:\Program Files\GnuWin32\bin on the lab machines.
- Use your favourite C compiler to make the program. The sample above was run on a Unix-based machine. Cygwin works on Windows.

Step 4: Run all.exe. Try 2 + 3.