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**Programming languages**

**Project 2**

**User's Manual**

**Setup and Compilation**

1. Download and unzip the submission from eLearning on a Linux box in the multi-platform lab.

2. The submission includes:

* symbol.c
* parser.c
* lexer.c
* symbol.h
* parser.h
* lexer.h
* Makefile
* run.sh (script to run the program 8 times)
* main.c
* a1.in, a2.in, a3.in, a4.in, a5.in, a6.in, a7.in, a8.in (the test programs to be compiled)
* UsersManual.docx (this file)

3. Environment: This program has been tested in the multi-platform lab and will run there.

4. Compiling. This program includes a **Makefile**. At the command line in Linux, type **make**. The

program produces an executable entitled **main**.

**Running the program**. Be sure a1.in, a2.in, a3.in, a4.in, a5.in, a6.in, a7.in and a8.in are in the same

directory as the executable. Issue the command **./run.sh** to run the program.

**User input**: no user interaction with the program is required.

**Output**: All output goes to the console. Output will be similar to this:

Compiling a1.in

Success

R0 = b

a = R0

\*\*\*\*\*[b]\*\*\*\*\*

R0 = b

R1 = 2

R0 = R0 + R1

a = R0

\*\*\*\*\*[b,2,+]\*\*\*\*\*

Compiling a2.in

Error - line 4 - Variable a is undefined

Compiling a3.in

Success

R0 = b

R1 = c

R0 = R0 + R1

R1 = d

R0 = R0 + R1

R1 = e

R0 = R0 + R1

R1 = f

R0 = R0 + R1

R1 = ghijk

R0 = R0 + R1

a = R0

\*\*\*\*\*[b,c,+,d,+,e,+,f,+,ghijk,+]\*\*\*\*\*

R0 = b

R1 = 2

R0 = R0 + R1

a = R0

\*\*\*\*\*[b,2,+]\*\*\*\*\*

R0 = c

R1 = hello

R0 = R0 + R1

R1 = a

R2 = 5

R1 = R1 - R2

R0 = R0 \* R1

b = R0

\*\*\*\*\*[c,hello,+,a,5,-,\*]\*\*\*\*\*

Compiling a4.in

Line 3 - variable 'b' already defined

Compiling a5.in

Success

R0 = b

R1 = c

R0 = R0 + R1

R1 = d

R0 = R0 + R1

R1 = e

R0 = R0 + R1

R1 = f

R0 = R0 + R1

R1 = ghijk

R0 = R0 + R1

a = R0

\*\*\*\*\*[b,c,+,d,+,e,+,f,+,ghijk,+]\*\*\*\*\*

R0 = c

R1 = hello

R0 = R0 + R1

R1 = a

R2 = 5

R1 = R1 - R2

R0 = R0 \* R1

R1 = e\_tt

R2 = 45678

R1 = R1 - R2

R0 = R0 \* R1

b = R0

\*\*\*\*\*[c,hello,+,a,5,-,\*,e\_tt,45678,-,\*]\*\*\*\*\*

Compiling a6.in

Line: 7 syntax error expected '='

Compiling a7.in

Success

R0 = b

R1 = c

R0 = R0 + R1

R1 = d

R0 = R0 - R1

R1 = e

R0 = R0 + R1

R1 = f

R0 = R0 \* R1

R1 = ghijk\_9876

R0 = R0 / R1

a = R0

\*\*\*\*\*[b,c,+,d,-,e,+,f,\*,ghijk\_9876,/]\*\*\*\*\*

R0 = b\_3

R1 = 2

R0 = R0 + R1

a = R0

\*\*\*\*\*[b\_3,2,+]\*\*\*\*\*

R0 = c

R1 = hello

R0 = R0 + R1

R1 = a\_sdf

R2 = 5

R1 = R1 - R2

R0 = R0 \* R1

R1 = 98765

R0 = R0 / R1

b = R0

\*\*\*\*\*[c,hello,+,a\_sdf,5,-,\*,98765,/]\*\*\*\*\*

Compiling a8.in

Line: 4 syntax error expected 'begin'