

COSC 230 Programming Assignment on Compiler Construction

Enhance the PL/0 compiler with at least two additional features of your choice, known or totally new. Possible features are

Type declaration: floating, char, etc.

Data types: arrays, pointers, records, etc.

Control structures: for, if-then-else, repeat, loop, go to, etc.

Procedures: procedure parameters, array parameters, etc.

Input statements:

Graphics commands:

Generation of machine instructions other than the PL/0 machine.

Present the following documents in print using word processing

Documentation of the new compiler including the syntax chart. (20)

Documentation of the enhanced PL/0 machine. (10)

Documentation of the sample program. (5)

Annotated object code of the sample program (5)

A snapshot of the stack in execution of the above program (5)

Source code of the compiler (40)

Source code of the sample program (5)

The execution result of the sample object code (5)

What could have been done in this assignment project, but not done due to time limit. (5)

Worth 16 %

Due date 26 April 2002

Note: Five versions of the PL/0 compiler are available from Prof. Takaoka's home page.

If you have not enhanced the PL/0 machine, document the existing one.

The sample program must demonstrate your new features.

Your sample program must be meaningful. A meaningful program performs some meaningful computation. If you are not sure about your sample program, ask lecturer or tutor.

Some indications for compiler source: if-then-else + repeat = 30 out of 40

if-then-else + array = 40 out of 40