

CSCE 531 Spring 2020 Project 2b Type Checking and Interpretation 2020-03-31

Project 2 is a combination of assignments 2 and 3 in [R] (pp.195-196). More complete descriptions are provided in Arne Ranta's website for [R], <http://www.grammaticalframework.org/ipl-book/assignments/assignment2/assignment2.html>. We will follow very closely the description by Dr. Ranta's colleague, Andreas Abel, at <http://www.cse.chalmers.se/edu/year/2018/course/DAT151/laborations/lab2/lab2.html>. Dr. Abel's 2018-2019 assignment includes both a Type Checker and an Interpreter; this makes sense, since the Interpreter is a "straightforward variant of the type checker" (section 5.6 [R]).

As noted in the last update for Project 1c (https://cse.sc.edu/~mgv/csce531sp20/pr/project1c_Update2.pdf), the grammar in section 2.10 [R] is (slightly) different from the ones on the book website. For this assignment, you must use the grammar of Dr. Abel's 2018-2019 assignment, which is a variation of CPP described in detail at <http://www.cse.chalmers.se/edu/year/2018/course/DAT151/laborations/lab2/lab2.html>, and found at the direct link <http://www.cse.chalmers.se/edu/year/2018/course/DAT151/laborations/lab2/ CPP.cf>.

For this assignment, you may use any language supported by BNFC, but I strongly recommend using either Haskell or Java. You may use one of Windows (as I do), Linux, and Mac OS. See tips in the project section of the course site, concerning the use of PowerShell, the installation of make, etc. More tips may be added.

You need to implement a type checker and interpreter for the CPP language. Follow the description at <http://www.cse.chalmers.se/edu/year/2018/course/DAT151/laborations/lab2/lab2.html>.

There are a few rather obvious site-specific instructions at <http://www.cse.chalmers.se/edu/year/2018/course/DAT151/laborations/lab2/lab2.html>; if in doubt, please ask. In particular, you will not submit your work through the Fire system. You will instead use the departmental dropbox and submit two items: (1) a tar package or a zip package, and (2) a pdf file showing the result of running your program on the test files in the test suite (direct link: <http://www.cse.chalmers.se/edu/year/2018/course/DAT151/laborations/lab2/testsuite/>). You do not need to automate running the test files (via, say, a script). You are allowed to modify the Makefile, which has to be included in your package.

This is a long project; you have two weeks to work on it. Start now.