

CSE 756, Project 1: simpleC Scanner

You need to build a scanner for a small subset of C, using JFlex. An initial version is available on the course web page under “Projects”. You need to extend this scanner to

- Add all necessary functionality described in all TODO comments in simpleC.flex
- Add all necessary functionality to successfully perform lexical analysis on two simple C programs (fft1.c and fft2.c, available on the course web page).

Before the deadline, you need to submit new versions of simpleC.flex and simpleC.cup. The project is due by **April 5 (Thursday)**, 11:59 pm.

Some Details

- Do your work on **stdsun**. One-time setup: run **subscribe**, subscribe to JDK-CURRENT, log out, log in again. Do not forget to set up your **CLASSPATH** (see web page, under “Resources”)
- Do **not** change MyLexer.java (the driver program) or MySymbol.java (a helper class, extension of Symbol). The output from MyLexer will be used for grading.
- The input will always be ASCII – you do not need to worry about Unicode characters (that is, you can ignore *universal-character-name* defined in Section 6.4.3 of the ANSI C document).
- You **must** use the terminal names that are already in simpleC.cup without any change, plus **exactly** the following new terminal names added by you: EXTERN for the keyword **extern** (and similarly for the other keywords that you will need to handle), PLUSASSGN for **+=**, LSHIFT for **<<**, LSHIFTASSGN for **<<=**, and RSHIFTASSGN for **>>=**.
- Read simpleC.flex very carefully: there are many important details in this file.
- One simplification to make life easier: consider the following input **32 456Last chance**. The implementation should generate the following sequence of tokens: INTEGER_LITERAL, INTEGER_LITERAL, IDENTIFIER with value 'ast', IDENTIFIER with value 'chance', EOF. Of course, this is not what a real-world C language implementation would do, but for this assignment it makes the scanner a little simpler.

Project Submission

On or before 11:59 pm on the due date, you should submit two files: simpleC.flex and simpleC.cup. On **stdsun** do **“cd dir”** where **dir** is the directory containing your files. Submit your project using

```
submit c756aa lab1 simpleC.flex simpleC.cup
```

If the timestamp on your electronic submission is **12:00 am on the next day or later**, you will receive 10% reduction per day, for up to three days. If your submission is later than 3 days after the deadline, it will not be accepted and you will receive zero points for this project. If you resubmit your project, this will override any previous submissions and only **the latest** submission will be considered – **resubmit at your own risk**.

Academic Integrity

The project you submit must be your own work. Minor consultations with others in the class are OK. The work on the project should be entirely your own: all the design, programming, and testing should be done independently. Submissions that show excessive similarities will be taken as evidence of cheating and dealt with accordingly.