

EECS4302 Winter 2020  
Project Milestone 3  
(5% of your grade)  
A Working Compiler on Verifying Basic Programming Features

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SUBMISSION DUE **11:59pm, Thursday, March 19**~~Wednesday, March 18~~  
MEETING **Thursday, March 19**

## Firm Deadline

- The sole purpose of this deadline is to push you to deliver so that: **1)** you will still have sufficient time to improve (based on the feedback) and complete the more advanced features; and **2)** you need not rush through your development at the last minute.
- Therefore, there will be no extension for this milestone.
- ~~During the meeting, if~~ If your submission fails with respect to the grading criteria (Section 2):
  - You will be given an opportunity to ~~submit~~**meet** again a week later: March 26.
  - A **2%** penalty will be applied (from the 5%).
- ~~In either case, you are required to submit and attend the meeting, because the instructor wishes to know where you are in the project.~~

## 1 Submission ~~(Before the Meeting)~~

- By **11:59pm Thursday, March 19**~~Wednesday March 18~~, submit via command line:

```
submit 4302 Project milestone-3
```

where `milestone-3` is a folder that contains the Eclipse Java project for your compiler, which conforms to the following structure (name of the Java project may be different if you prefer):

```
milestone-3 /* top-level folder to submit */
|- EECS4302_W20_Project /* Eclipse Java Project */
|   |- src
|       |- antlr /* ANTLR4-related files */
|       |- docs /* doc-1.pdf, doc-2.pdf, doc-3.pdf stored in this folder */
|       ... /* other packages */
|       |- tests /* working test cases */
|           |- input-1.txt
|           |- input-2.txt
|           |- input-3.txt
|           |- input-4.txt
|           |- input-5.txt
|           |- output-1.txt /* output compiled from input-1.txt */
|           |- output-2.txt /* output compiled from input-2.txt */
|           |- output-3.txt /* output compiled from input-3.txt */
|           |- output-4.txt /* output compiled from input-4.txt */
|           |- output-5.txt /* output compiled from input-5.txt */
|       |- ... /* other folders in your project */
```

- **Do not submit the Eclipse project folder directly. It must be enclosed within the milestone-3 folder.**
- Punctual submission is required: the instructor ~~or TA will~~**may, before or during the meeting,** download your Java project, generate the ANTLR4 files from scratch, and then run your compiler on the input files to check if the generated outputs match.

## 2 Grading (~~During the Meeting~~)

### – 2%

These input files illustrate the **basic** features of the source programming language. Refer to the project instructions for the list of basic features.

**Submission:** Using up to one page (which must be in PDF format and named **doc-1.pdf**), summarize which programming features are illustrated in the input files.

### – 2%

By invoking your compiler, the generated output files can be loaded to the verification tool without any syntax or type errors. You will be asked to generate the ANTLR4 files from scratch, and then invoke your compiler from both Eclipse and command line. ~~Be ready for the illustration.~~

**Submission:** Using up to one page (which must be in PDF format and named **doc-2.pdf**), include detailed instruction on how to load/run the generated output files on the target verification tool. There is **no** need to include installation instructions of the tool.

### – 1%

Informally justify the source-to-target transformation (i.e., why you believe your transformation is semantics-preserving).

**Optional.** ~~If you wish to receive more detailed and precise feedback,~~

**Submission:** Using up to two pages (which must be in PDF format and named **doc-3.pdf**), go over how each basic feature of your programming language is transformed into the corresponding specification feature for verification. You will receive feedback on how you may write up the justification in the final user manual.