

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, 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 your submission fails with respect to the grading criteria (Section 2):
 - You will be given an opportunity to 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 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 */
      ... /* 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 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.

– **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.

– **1%**

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

Optional. If you wish to receive more detailed and precise feedback, prepare a draft writeup on the justification; submission of this is **not** required before the meeting.