

San José State University
Department of Computer Engineering

CMPE 152
Compiler Design
Spring 2018
Instructor: Ron Mak

Assignment #6

Assigned: Tuesday, April 3
Due: Monday, April 16 at 11:59 pm
Team assignment, 100 points max

ANTLR 4 grammar

Write the first draft of the grammar for your compiler project. This should be the grammar for a subset of your source language. Create a .g4 grammar file and use ANTLR 4 to generate a working parser and lexer (scanner) for your source language.

This assignment is the beginning of your team compiler project.

Syntax diagram and parse tree

Use the ANTLR Eclipse plug-in (or an ANTLR plug-in for any other IDE) to generate a syntax diagram for your grammar.

Use the ANTLR Eclipse plug-in (or an ANTLR plug-in for any other IDE) to generate a parse tree from a sample source program written in your language.

Compile your source program

Compile your sample source program using the ANTLR-generated compiler. The output from the compilation should be a text dump of all the tokens and a textual representation of the parse tree in Lisp format.

What to turn in

Submit to Canvas, **Assignment #6. ANTLR Grammar**, a zip file containing:

- The `.g4` grammar file for your language.
- A sample source program written in your language.
- The syntax diagram generated from the grammar. This can be a screen shot.
- The graphical parse tree generated from the grammar and the source program. This can be a screen shot.
- Output from compiling your source program with your ANTLR- generated compiler. This should be a dump of the token stream and the parse tree in the textual Lisp format.

Name the zip file after your team; for example: **SuperCoders.zip**

Rubric

Your program will be graded according to these criteria:

Criteria	Max points
• The <code>.g4</code> grammar file for your language.	• 20
• A source program written in your language.	• 10
• Syntax diagram generated from your grammar.	• 20
• Graphical parse tree generated from your grammar and source program.	• 20
• Compiler output consisting of a token stream dump and the parse tree in the textual Lisp format.	• 30