

San José State University
Department of Computer Engineering

CMPE 152 Compiler Design

Fall 2018

Instructor: Ron Mak

Assignment #6

Assigned: Thursday, Nov. 8
Due: Wednesday, Nov. 28 at 11:59 pm
Team assignment, 100 points max

Code generation

Begin code generation in your compiler for your team's chosen source language.

Write a simple sample source program in your language that contains:

- declarations (at least two data types)
- assignment statements
- expressions
- control statements (at least an if statement and a looping statement)

You should be able to:

- **compile** your sample program into Jasmin assembly code
- **assemble and run** the generated code
- produce runtime **printed output**, including the elapsed run time at the end

Follow the Pcl1 and Pcl2 examples of how to use ANTLR 4. Use the example Jasmin code given in class for printing runtime output using Java's `System.out.println()` and `System.out.printf()` functions.

For this assignment, your compiler does not have to do error handling (the input can be error-free).

To execute your sample program on the JVM, you will need to use the Pascal runtime library <http://www.cs.sjsu.edu/~mak/CMPE152/sources/PascalRTL.jar>

- Mac and Linux: `java -jar .:PascalRTL.jar MyProgram`
- Windows: `java -jar .;PascalRTL.jar MyProgram`

(Not `MyProgram.class`)

This assignment is the continuation of your team compiler project. ***Your compiler projects are due Monday, December 10.***

What to turn in

A zip file containing:

- The latest version of your `.g4` grammar file.
- The C++ file containing the main.
- The C++ files containing your overrides of the default visit methods.
- A simple sample program written in your source language that you can successfully compile.
- A text file containing the generated Jasmin object code for your sample program.
- A text file containing output from running the compiled sample program.

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

Rubric

Your program will be graded according to these criteria:

Criteria	Max points
• Latest version of your <code>.g4</code> grammar file.	• 15
• C++ file containing the main.	• 10
• C++ files containing overrides of the default visit functions.	• 25
• Sample source program written in your source language.	• 10
• Text file containing the generated Jasmin assembly code from compiling the sample program.	• 25
• Text file containing output from running the compiled sample program.	• 15