

San José State University
Department of Computer Science

CS 153

Concepts of Compiler Design

Fall 2023
Instructor: Ron Mak

Assignment #5

Assigned: Wednesday, October 11
Due: Monday, October 23 at 4:00 PM
Team assignment, 120 points max

Pascal to Java Converter

The purpose of this assignment is to give you more practice with ANTLR by writing a Pascal to Java converter.

Unzip file [Asgn05.zip](#) which contains a Pascal interpreter (visit methods in class `backend.interpreter.Executor`) and an incomplete Pascal to Java converter (visit methods in class `backend.converter.Converter`).

Invoke the interpreter with the `-execute` command-line option. Invoke the converter with the `-convert` command-line option. The converter should convert a Pascal program named `Foo.pas` to an equivalent Java program named `Foo.java`.

Complete the converter

The incomplete converter can convert Pascal assignment statements, **REPEAT** statements and expressions. Complete it by adding visit methods to convert

- **WHILE** statements
- **FOR** statements
- **IF** statements
- **CASE** statements
- Procedure definitions and calls
- Function definitions and calls

Test Pascal programs

Test your converter on the following test Pascal programs to generate the equivalent Java programs:

- `TestWhile.pas`
- `TestFor.pas`
- `TestIf.pas`
- `TestCase.pas`
- `TestProcedure.pas`
- `Newton3.pas`

Each generated Java program should produce similar runtime output as when you execute the original Pascal program with the interpreter.

What to submit to Canvas

A zip file that contains:

- All of your Java source files and your grammar file.
- For each test Pascal program, the runtime output from running the generated equivalent Java program.

Submit to **Assignment #5: Pascal to Java Converter**

Rubric

Your submission will be graded according to these criteria:

Criteria	Max points
TestWhile.pas: <ul style="list-style-type: none">• Generated Java program.• Runtime output from the Java program.	20 <ul style="list-style-type: none">• 10• 10
TestFOR.pas: <ul style="list-style-type: none">• Generated Java program.• Runtime output from the Java program.	20 <ul style="list-style-type: none">• 10• 10
TestIF.pas: <ul style="list-style-type: none">• Generated Java program.• Runtime output from the Java program.	20 <ul style="list-style-type: none">• 10• 10
TestCASE.pas: <ul style="list-style-type: none">• Generated Java program.• Runtime output from the Java program.	20 <ul style="list-style-type: none">• 10• 10
TestProcedure.pas: <ul style="list-style-type: none">• Generated Java program.• Runtime output from the Java program.	20 <ul style="list-style-type: none">• 10• 10
Newton3.pas: <ul style="list-style-type: none">• Generated Java program.• Runtime output from the Java program.	20 <ul style="list-style-type: none">• 10• 10