

San José State University  
Department of Computer Science

# CS 153

## Concepts of Compiler Design

Fall 2024  
Instructor: Ron Mak

### Assignment #5

**Assigned:** Thursday, October 10  
**Due:** Thursday, October 24 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
<b>TestWhile.pas:</b> <ul style="list-style-type: none"><li>• Generated Java program.</li><li>• Runtime output from the Java program.</li></ul>	<b>20</b> <ul style="list-style-type: none"><li>• 10</li><li>• 10</li></ul>
<b>TestFOR.pas:</b> <ul style="list-style-type: none"><li>• Generated Java program.</li><li>• Runtime output from the Java program.</li></ul>	<b>20</b> <ul style="list-style-type: none"><li>• 10</li><li>• 10</li></ul>
<b>TestIF.pas:</b> <ul style="list-style-type: none"><li>• Generated Java program.</li><li>• Runtime output from the Java program.</li></ul>	<b>20</b> <ul style="list-style-type: none"><li>• 10</li><li>• 10</li></ul>
<b>TestCASE.pas:</b> <ul style="list-style-type: none"><li>• Generated Java program.</li><li>• Runtime output from the Java program.</li></ul>	<b>20</b> <ul style="list-style-type: none"><li>• 10</li><li>• 10</li></ul>
<b>TestProcedure.pas:</b> <ul style="list-style-type: none"><li>• Generated Java program.</li><li>• Runtime output from the Java program.</li></ul>	<b>20</b> <ul style="list-style-type: none"><li>• 10</li><li>• 10</li></ul>
<b>Newton3.pas:</b> <ul style="list-style-type: none"><li>• Generated Java program.</li><li>• Runtime output from the Java program.</li></ul>	<b>20</b> <ul style="list-style-type: none"><li>• 10</li><li>• 10</li></ul>