

University of Puerto Rico
Mayagüez Campus
College of Engineering
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ICOM4029 – Compilers
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Laboratory 7 – Semantic Analysis

The function of the semantic analyzer in the compiler is to take an input abstract syntax tree (AST) produced by the parser, validate the semantics of the code, and output a type-annotated AST. We will not use any special tool in this stage, so you will be working on a complete Java source code environment.

I. Preparation

1. Cool JavaDoc

Download or browse to the CUP manual at: <http://amadeus.ece.uprm.edu/~rbadia/cooldoc/>

2. Lab files

The files used for the explanations in this lab are the same ones as PA4. You can do:

```
mkdir PA4  
cd PA4  
gmake -f ~icom4029/cool/assignments/PA4J/Makefile source
```

to get them.

II. Semantic Analysis

1. Class Hierarchy Tree
2. Symbol Table
3. Type Checking
 - a. Type Environments
 - b. Type Rules
4. Semantic Errors

III. PA3 Questions ?