

Project 3 Report

ECE 449

Peter CHINETTI

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Instructor: Professor Wang

1 Feature List

The features chosen for the initial release was essentially nothing. The test files were just module names.

This limited feature set was chosen for the initial release because it required the smallest modification from the original code.

The final release included parsing of all features

2 Test Case Design

The test cases are designed to check parsing of multiple modules per file. The only feature of the initial release was module recognition, so no further test could be written.

To test full functionality of the parser, the golden test files were used. The parser had no difficulty in parsing the smaller test files, but ran into significant difficulty when working on the larger test files (cpu32, cpu8, and s15850).

The difficulty was caused by a misunderstanding of how objects were passed in C++. I had forgotten that if vectors were passed whole, not by reference, they were copied. This caused the runtime to balloon to $O(n^2)$. Tellingly, parsing a single component in the cpu32 took 0.16 seconds!.

3 Implementation: Initial vs. Final

The initial release had no changes from the project two code, whereas the final code had a separate namespace NETLIST which contained two new objects: CompNet and PinNet, for components and pins, respectively. Generating the Nets involved iterating through the wires and components generated in project 2.