What is Mini-Java?

MiniJava is a subset of Java. The meaning of a MiniJava program is given by its meaning as a Java program. Overloading is not allowed in MiniJava. The MiniJava statement System.out.println(...); can only print integers. The MiniJava expression e.length only applies to expressions of type int [].

The Grammar link on the left has the formal BNF for MiniJava. You can also view some sample MiniJava programs under the Programs link. The Framework link provides a helpful interface to write a MiniJava Compiler. The software link has links to software and tools that may be helpful to write and test your compiler. The Java Reference is a helpful resource to learn the language. And the MiniJava Reference is a miniJava reference manual from the appendix of the book.

Sample MiniJava Programs

The following are some sample MiniJava programs that you may use to test the correctness of your compiler. All of these programs can be compiled with *javac* and output compared with your results.

- **Factorial.java**
- **BinarySearch.java**
- **BubbleSort.java**
- **TreeVisitor.java**
- **QuickSort.java**
- **LinearSearch.java**
- **LinkedList.java**
- **BinaryTree.java**

Framework

The links below provide a helpful framework for writing a MiniJava compiler, and are organized according to the chapters in the book.

1. **Introduction**
2. **Lexical Analysis**: javacc sablecc README
3. **Parsing**: README
4. **Abstract Syntax**: handcrafted README
5. **Type Checking** README
6. **Activation Records**: Temp Util README
7. **Translation to Intermediate Representation**: Tree README
8. **Canonical Trees**: Canon
9. **Instruction Selection**: Assem Canon README
10. **Dataflow Analysis** FlowGraph Graph RegAlloc README
11. **Register Allocation** README
12. **Putting It All Together**: runtime README

Here is a sample main program that could be used to link everything together.

Software

- **Java (tm) Developers Kit**
- **JavaCC** (a Java parser generator.)
- **Java Tree Builder** (a syntax tree builder to be used with JavaCC)
- **SableCC** (an LALR(1) parser and AST builder generator.)
- **Spim** (A MIPS R2000/R3000 Simulator)

Java Reference

The following links provide a good resource for learning Java:

- **Java Tutorial**
- **Java Documentation**
- **Java API**