Java 6 Decompiler

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Abstract

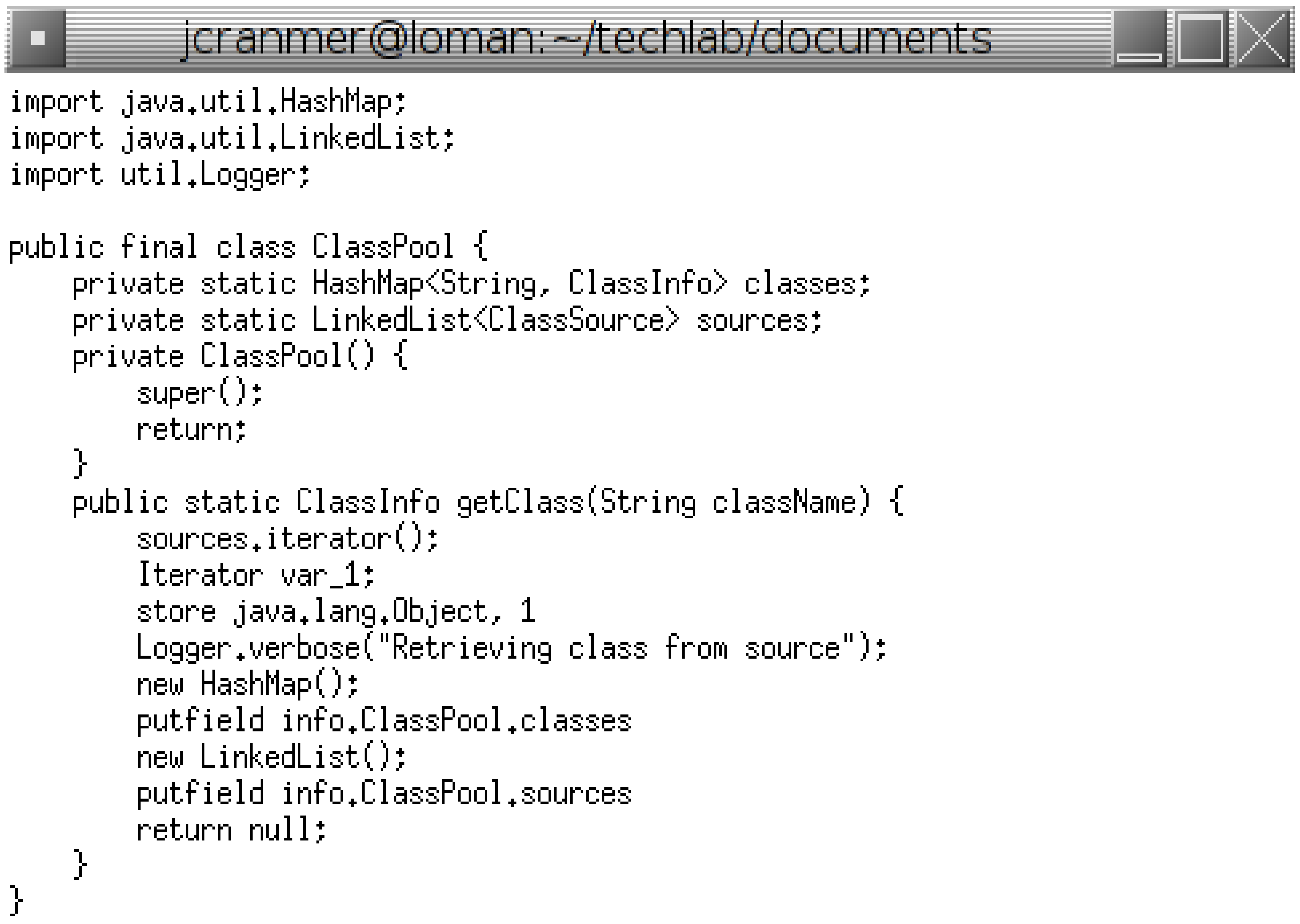
This project aims to create a decompiler capable of processing outputted Java 6 bytecode into fully-recompilable and functionally-equivalent source code.

Reasons for Decompilation

- Finding bugs in program
- Finding vulnerabilities
- Finding malware
- Compiler code verification
- Comprehending algorithms
- Creating interoperability
- Induce customizability
- Porting code
- Create maintainable source code
- Fixing bugs without patching binaries
- Add features to a program

Procedures and Methods

The decompiler works in a multi-phased approach. First, the class file is fully parsed and stored in memory. Then, the code execution bodies are processed through several transformation filters until readable source code is produced. Next, various filters are applied to make the source code more readable. Finally, everything is fully decoded and then printed out into class files.



```
import java.util.HashMap;
import java.util.LinkedList;
import util.Logger;

public final class ClassPool {
    private static HashMap<String, ClassInfo> classes;
    private static LinkedList<ClassSource> sources;
    private ClassPool() {
        super();
        return;
    }
    public static ClassInfo getClass(String className) {
        sources.iterator();
        Iterator var_1;
        store java.lang.Object, 1
        Logger.verbose("Retrieving class from source");
        new HashMap();
        putfield info.ClassPool.classes
        new LinkedList();
        putfield info.ClassPool.sources
        return null;
    }
}
```

Example screenshot of running code. Note the use of proper indentation and (not seen here) proper 80-character overflow.

Generic signatures are decompiled, as well as the recovery of new variables, and the decompilation of certain simple bytecodes.