HCMC University of Technology
Faculty of Computer Science & Engineering

Assignment 4

Code Generation

Author

Dr. Nguyen Hua Phung

November 21, 2017

Contents

Assignment 4

version 1.0

After completing this assignment, you will be able to

- explain the mechanism of some structures in a programming language.

- use Scala to implement a code generation phase for a stack-based machine like JVM.

- create a complete compiler for JVM.

1   Specification

In this assignment, you are required to write a code generation checker for a program written in MC. The code generation will generate Jasmin code from AST created from assignment 2. The Jasmin code then is transfered to Java bytecode which must be run correctly in a Java Virtual Machine (JVM). To complete this assignment, you need to:

- read carefully the specification of MC language

- Use the first initial.zip and replace all files in mc/utils, mc/parser/ and mc/checker with the files in the corresponding folders of assignment 1, 2 and 3.

- Modify CodeGenerator.scala and Emitter.scala in mc/codegen to implement the code generation. **Please fill in your id in the headers of these files**.

- Modify CodeGenSuite.scala to test your code.

2   Submissions

The operating system when cheking your submission is Linux. The Scala compiler version is 2.11.2.

- The deadline is **Tuesday, December 12th, 2017 at 16:30**.

- CodeGenerator.scala, Emitter.scala and CodeGenSuite.scala with the entry method **CodeGenerator/check**.

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3   Plagiarism

- You must complete the assignment by yourself and do not let your work seen by someone else.

- You just submit your code in your allocated account.

If you violate any requirement, you will be punished by the university rule for plagiarism.

4   Change Log