VIETNAM NATIONAL UNIVERSITY - HO CHI MINH CITY
HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY
**FACULTY OF COMPUTER SCIENCE AND ENGINEERING**


**PRINCIPLES OF PROGRAMMING LANGUAGES - CO3005**

# ASSIGNMENT 4

*Code Generator*

HO CHI MINH CITY, 07/2021

# 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 Python to implement a code generation phase for a stack-based machine like JVM.
- create a simple complete compiler for JVM.

## 1 Specification

In this assignment, you are required to write a code generation checker for a program written in MiniGo. 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 MiniGo language
- Download assignment4.zip and unzip it.
- Modify main/main/codegen/CodeGenerator.py and main/main/codegen/Emitter.py to implement this assignment.
- Modify test/CodeGenSuite.py to create 100 testcases to test your code. Note that the main method (entry of MiniGo program) should be in the class whose name is "MiniGoClass".

There is a limitation on testcases: no for each statement.

## 2 Submissions

- The deadline will be announced on the class website.
- You must submit three files: CodeGenerator.py, Emitter.py and CodeGenSuite.py.

## 3 Plagiarism

You must complete the assignment by yourself and do not let your work seen by someone else. If you violate any requirement, you will be punished by the university rule for plagiarism.

## 4 Change log