# Code Generation

## Question 1.

Download the files from this link into your computer. They are bcel-5.2.jar, jasmin.jar, JasminVisitor.java, and test.java. Open Command Prompt (Windows)/Terminal (MacOS) to use Java commands when performing the following tasks:

- Task 1: Compile JasminVisitor.java (use library bcel-5.2.jar). You must create JasminVisitor.class to complete this task
- Task 2: Compile test.java (don't need any library). The result is file test.class
- Task 3: Create jasmin file from a class file. Use JasminVisitor together with the library bcel-5.2.jar to create jasmin file for the test.class file. The result is file test.j.
- Task 4: Use a editor to open test.j and discuss in your group the jasmin code of each line in test.java
- Task 5: Run test.class
- Task 6: Use editor to change instruction **iconst_1** (after **.line 4**) in file test.j into **iconst_2**, save the file and type this instruction "java -jar jasmin.jar test.j" in Command Prompt/Terminal. Make sure that test.class is generated. Run this test.class and compare the result with the one of Task 5. Explain the reason?

Except Task 4 and 6, write the command in Command Prompt/Terminal you use to complete each Task.

## Question 2.

Download this file. Unzip it and change current folder into initial/src and try "python3 run.py gen". It should be succesful if you set up ANTLR_JAR correctly as in the assignments. If you use Windows, change ":" in line 186 of file initial/src/test/TestUtils.py into ";" and try "python3 run.py test CodeGenSuite". It should be successful before performing the following tasks:

- Change files BKOOL.g4, AST.py, Visitor.py, ASTGeneration.py and CodeGenerator.py to make it generate code for a floating-point number. Change CodeGenSuite.py to test your solution.
- Change the above files to make it generate code for a binary expression with operators +, -, *, / over integer and floating-point numbers. Change CodeGenSuite.py to test your solution.