# Coursework 4 (Strand 1)

This coursework is worth 6% and is due on 11 December at 18:00. You are asked to implement a compiler for the WHILE language that targets the assembler language provided by Jasmin or Krakatau (both have very similar syntax). You can do the implementation in any programming language you like, but you need to submit the source code with which you answered the questions, otherwise a mark of 0% will be awarded. You should use the lexer and parser from the previous courseworks. Please package *everything*(!) in a zip-file that creates a directory with the name YournameYourFamilyname on my end.

## Disclaimer

It should be understood that the work you submit represents your own effort. You have not copied from anyone else. An exception is the Scala code I showed during the lectures, which you can use. You can also use your own code from the CW 1, CW 2 and CW 3.

## Jasmin Assembler

The Jasmin assembler is available from

http://jasmin.sourceforge.net

There is a user guide for Jasmin

http://jasmin.sourceforge.net/guide.html

and also a description of some of the instructions that the JVM understands

http://jasmin.sourceforge.net/instructions.html

If you generated a correct assembler file for Jasmin, for example loops.j, you can use

```
java -jar jasmin-2.4/jasmin.jar loops.j
```

in order to translate it into Java Byte Code. The resulting class file can be run with

```
java loops
```

where you might need to give the correct path to the class file. For example:

```
java -cp . loops/loops
```

There are also other resources about Jasmin on the Internet, for example

http://www.ceng.metu.edu.tr/courses/ceng444/link/f3jasmintutorial.html

and

http:
//www.csc.villanova.edu/~tway/courses/csc4181/s2018/labs/lab4/JVM.pdf