

Coursework 3

This coursework is worth 4% and is due on 13 December at 16:00. You are asked to implement a compiler for the WHILE language which targets the assembler language provided by the Jasmin. This 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`

You need to submit a document containing the answers for the questions below. 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. However, the coursework will *only* be judged according to the answers. You can submit your answers in a txt-file or as pdf.

Question 1 (marked with 1%)

You need to lex and parse WHILE programs and submit the assembler instructions for the Fibonacci program and for the program you submitted in Coursework 2 in Question 3. The latter should be so modified that a user can input the upper bound on the console (in the original question it was fixed to 100).

Question 2 (marked with 2%)

Extend the syntax of your language so that it contains also for-loops, like

`for Id := AExp until AExp do Block`