Homework 8

Please submit your solutions via email. Please submit only ASCII text or PDFs. Every solution should be preceded by the corresponding question text, like:

> **Qn:**   **…a difficult question from me…**
> **A:**   **…an answer from you …**
> **Q$n+1$**   **…another difficult question…**
> **A:**   **…another brilliant answer from you…**

Solutions will only be accepted until 20th December! Please send only one homework per email.

1. Write a program in the WHILE-language that calculates the factorial function.

2. What optimisations could a compiler perform when compiling a WHILE-program?

3. What is the main difference between the Java assembler (as processed by Jasmin) and Java Byte Code?

4. Parser combinators can directly be given a string as input, without the need of a lexer. What are the advantages to first lex a string and then feed a sequence of tokens as input to the parser?

5. Explain what is meant by the terms lazy evaluation and eager evaluation.