

## Homework 8

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

**Q<sub>n</sub>:**     ...a difficult question from me...  
**A:**        ...an answer from you ...  
**Q<sub>n</sub> + 1**   ...another difficult question...  
**A:**        ...another brilliant answer from you...

**Solutions will only be accepted until 30th 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?