

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:

Q n : ...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.
6. **(Optional)** This question is for you to provide regular feedback to me: for example what were the most interesting, least interesting, or confusing parts in this lecture? Any problems with my Scala code? Please feel free to share any other questions or concerns.