Introduction to Program Synthesis (SS 2025) - Exercise Sheet 0

Fortran I Compiler and Code Optimization (Literature Discussion)

Based on the literature presented in the context of the first exercise unit, we will discuss the content that is relevant for the course in the next unit.

As already communicated in the exercise, this sheet is intended as a further introduction to topics relevant for the course and does not entail any mandatory submission.

More details about the procedure and structure of the exercise format will be announced in the next lecture.

> **Exercise 1: Fortran 1 Compiler Literature**
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> Familiarise yourself with the original Fortran Automatic Coding System paper[a] Backus et al. (1957) as well as with its recapitulation[b] Padua (2000).
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> [a] https://dl.acm.org/doi/pdf/10.1145/1455567.1455599
> [b] https://ucla-biostat-257-2020spring.github.io/readings/fortran.pdf

References

Backus, J. W., Beeber, R. J., Best, S., Goldberg, R., Haibt, L. M., Herrick, H. L., Nelson, R. A., Sayre, D., Sheridan, P. B., Stern, H., Ziller, I., Hughes, R. A., and Nutt, R. (1957). The fortran automatic coding system. In *Papers Presented at the February 26-28, 1957, Western Joint Computer Conference: Techniques for Reliability*, IRE-AIEE-ACM '57 (Western), page 188–198, New York, NY, USA. Association for Computing Machinery.

Padua, D. A. (2000). The fortran I compiler. *Comput. Sci. Eng.*, 2(1):70–75.