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Software Architectures
Exercises
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Exercise sheet 3

Exercise 3.1

Assume you are requested to develop a system in a modular form for calculating the inner product of two 3-dimensional vectors of integers.

- a) Give a formal specification of the requirements.
- b) What is in general one of the main flaws of following the waterfall model?

Exercise 3.2

- a) Give a corresponding architecture diagram of the system above in graphical syntax by using **general usability** constraints on interfaces of abstract data modules and functional modules. Use data abstraction to hide at design level details about the data structure used as storage for the input.
- b) Give a network of functional components for computing the desired functionality. Since a modular development is required, reuse of components is desired.

Exercise 3.2

- a) Give an implementation of the system above (Java/C/ada/pseudocode/other..).
- b) Describe in a few words what would mean to develop this system in a bottom-up way, compared to a top-down way?