

Assignment 12 — 08.12.2021 – v1.0

Architectural Styles for Concurrency

Deadline for exam questions (E02): Monday, 13.12.2021, 08:00 am

Otherwise we cannot guarantee that we'll be able to discuss them in the upcoming practical session.

Exercise 1 (10 pts)

Answer the following questions:

- a) What is a *Software Architecture*?
- b) What is the benefit of using a *Software Architecture*?
- c) Name a potential disadvantage when using layered architectures?
- d) Provide an example in which the pattern *Specialist Parallelism* could be a legitimate architectural choice. Justify your answer!
- e) The concepts *Result Parallelism*, *Specialist Parallelism* and *Agenda Parallelism* represent three ways of thinking about the problem. Can you tell on what they focus? Provide one sentence for each one of them.
- f) What is a *Flow Architecture*?
- g) What are *Blackboard Architectures*?
- h) Which blackboard style should be preferred when we have multiple processors? Why?
- i) What are Unix pipes?
- j) How can you use Unix pipes?

Exercise 2 (optional)

Now we change roles: It is your turn to send me questions of topics you are still not familiar with for the next practical session. The best questions will be presented in front of you. I will try my best to answer all the questions you submit. Important: You have to submit your questions before the regular assignment submission deadline, i.e., until Monday morning, 08:00am.