

Functional Programming – WT 2023 / 2024
Reading Guide 9: Time and Value (Theory)

Timeline: This unit should be completed by 11.12.2023.

1 Material

- Rich Hickey: Are We There Yet?
<https://www.infoq.com/presentations/Are-We-There-Yet-Rich-Hickey/>
- Rich Hickey: Clojure Concurrency https://youtu.be/nDAfZK8m5_8 (21:06 – 1:16:05 — first twenty minutes may be used as a revision)
- Learning Video: Epochal Time Model: <https://mediathek.hhu.de/watch/20e935c4-9934-4d4d-abe7-9bc3>

Note: This unit only deals with the theoretical foundations. In two additional reading guides, we will inspect the semantics of different implementations of this model in more detail (and code).

2 Learning Outcomes

After completing this unit you should be able to

- define and assign the terms identity, value observer and state.
- describe the epochal time-model and apply it to different implementations of state management.
- describe compare-and-swap (CAS)-semantics¹.
- describe the role of persistent data structure in a concurrent context.

3 Exercises

No practical exercises for a theoretical introduction. Proceed with the usual 4clojure exercises.

Questions

If you have any questions, please contact Philipp Körner (p.koerner@hhu.de) or post it to the Rocket.Chat group.

¹You may refer to a Wikipedia page on CAS.