

Functional Programming – WT 2023 / 2024
Reading Guide 12: Time and Value (Praxis) — Refs, Futures and Promises

Timeline: This unit should be completed by 15.01.2024.

1 Material

- Alternatives (note: not all books cover the write skew):
 - 26_refs.clj
 - The Joy of Clojure, chapter 10.1 + 10.2
- 27_future_promise.clj
- Clojure Reference: Refs and Transactions <https://clojure.org/reference/refs>
- Learning Video: Refs: <https://mediathek.hhu.de/watch/1134b0d5-32ea-4748-9c48-90c9f6bff394>

2 Learning Outcomes

After completing this unit you should be able to

- describe and compare the semantics of time management constructs.
- explain the conflict behaviour of refs.
- identify incorrect use of refs.
- identify use cases for refs.
- use refs in a consistent manner, including commutative operations.
- identify, describe and solve the problem of write skew.
- compare the expressiveness of atoms and refs.
- remember and compare the performance of refs and atoms.

3 Highlights

- refs
- Transactions
- write skew
- Macros: `dosync`
- Functions: `alter`, `ref-set`, `ensure`, `deref`

4 Exercises

No specific exercises this week. Feel free to tackle 4clojure problems or try your hand at the Advent of Code.

Questions

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