

# Session 4: Exercises

M2 MOSIG: Large-Scale Data Management and Distributed Systems

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## 1 About broadcast algorithms

**Question 1.1:** *The regular reliable broadcast algorithm presented in the course relies on a perfect failure detector  $\mathcal{P}$ . Assume that instead of strong accuracy, we have a failure detector that ensures weak accuracy. What would be the impact for the considered algorithm?*

**Question 1.2:** *Still considering the reliable broadcast algorithm presented in the course, if we have a failure detector that only ensures weak completeness, what would be the impact for the algorithm?*

**Question 1.3:** *Propose a regular reliable broadcast algorithm that does not rely on a failure detector.*

*Tip: A process should assume that the sender has crashed*

**Question 1.4:** *In the uniform reliable broadcast algorithm presented in the course, the set `delivered` grows infinitely. Propose a solution to remove messages from this set when possible.*