

Exercise Session 8

TRB, GM, VSC

Problem 1

Can we implement TRB with the eventually perfect failure detector $\diamond P$, if we assume that at least one process can crash?

Problem 2

Show that P is the weakest failure detector for Group Membership.

The failure detector D is weakest for solving some problem A (e.g., Consensus or NBAC) if D provides the smallest amount of information about failures that allows to solve A .

Problem 3

In this problem we will change the *view-synchronous communication* (VSC) abstraction in order to allow joins of new processes. Answer to the following questions:

1. Are the properties of VSC (as given in the class) suitable to accommodate the joins of new processes. Why / Why not?
2. Change the properties of VSC, so that they allow for implementations that support the joins of new processes. [Hint: focus on the properties of group membership]
3. Sketch the changes we need to perform on the Consensus-based (Algorithm II) implementation of VSC in order to support joins.