Solution to Exercise 5.1

Igor Zablotchi

EPFL, LPD

October 31, 2017
Binary Consensus

Some processes propose values (0 or 1) and eventually decide some values (0 or 1).

**Validity**  Every value decided is a value proposed

**Agreement**  No two processes decide different value

**Wait-freedom**  Every correct process that proposes a value eventually decides a value.
Binary Consensus from Write-Once Registers

We use a single write-once register $r$:

\[
\text{upon propose}(v) \\
r.\text{write}(v) \\
\text{return } r.\text{read}()
\]