

Exercise 2

Problem 1. Explain the difference between a regular register and an atomic register. Provide an example execution that is allowed for a regular register but not allowed for an atomic register.

Problem 2. Consider the transformation from SRSW regular to SRSW atomic registers given in class. Prove that if you replace the base registers (SRSW regular registers) by MRSW regular registers, your algorithm does *not* yield an MRSW atomic register (by providing a counterexample that breaks atomicity).

Problem 3. Consider the transformation from SRSW regular to SRSW atomic registers given in class. Prove that the transformation does not work for multiple readers (by providing a counterexample that breaks atomicity).

Problem 4. Consider the transformation from SRSW atomic to MRSW atomic registers given in class. Show that the transformation doesn't work with multiple writers.