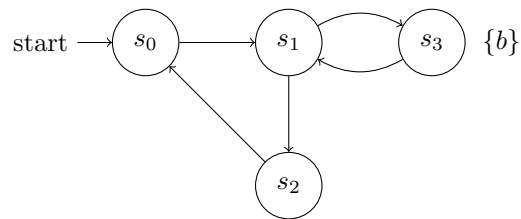


Exercise for Symbolic Model Checking without BDDs

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In the following Kripke structure you are asked to check if the LTL property $\mathbf{G}\neg b$ holds using bounded model checking:



1. Write the existential property that must be satisfied by the counterexample
2. Discover an infinite path that starts at the initial state and is a counterexample
3. Find the smallest prefix of the path from 2 that is also a counterexample
4. Write the satisfying clauses of the $\llbracket M \rrbracket_k$ formula for the prefix found in 3 (encode the relevant states of the Kripke structure as you like)
5. Write the satisfied formula for the appropriate looping or non-looping condition that holds for the prefix found in 3
6. Depending on your result in 5, write the satisfying clauses of the property found in 1 using the appropriate looping or non-looping translation