

Elective in Software and Services

(Complementi di software e servizi per la società dell'informazione)

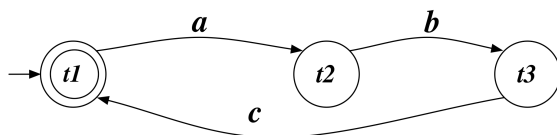
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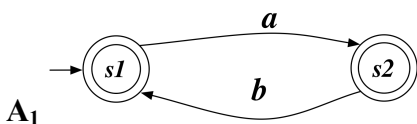
Time to complete the assignment: 2 hours

Part 1 (Composition Synthesis)

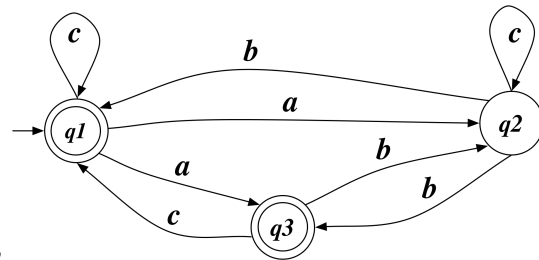
Given the following target **T** service and available services **A₁**, **A₂**, check whether a composition exists. If it does exist, produce the output relation of orchestrator generator. If not, single out the target state that cannot be simulated/ND-simulated, and propose a change to the available services so as to guarantee the composition.



T



A₁



A₂

Part 2 (Theoretical Question)

Prove that the following well-known theorem holds.

Theorem: If two states s, t of two finite transition systems satisfy (make true) the same formulas of HennessyMilner Logic, then there exists a bisimulation between s and t .