Automata on Infinite Structure
Fall 2018

Exercice Sheet 11

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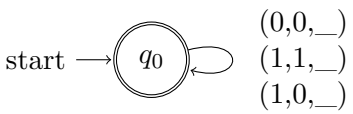
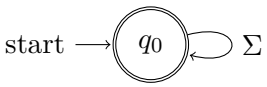
Exercise 1

$\exists x.(x \in Q_a \wedge x + 1 \in Q_b) =$
$\exists x.(x \in X_0 \wedge \neg(x + 1 \in X_0)) =$
$\exists X_1.(sing(X_1) \wedge X_1 \subseteq X_0 \wedge \exists X_2.(sing(X_2) \wedge succ(X_1, X_2) \wedge \neg(X_2 \subseteq X_0))) =$
$\exists X_1.\exists X_2.(X_1 \subseteq X_0 \wedge \neg(X_2 \subseteq X_0) \wedge succ(X_1, X_2))$

Automata for $X_1 \subseteq X_0$



Automata for $\neg(X_2 \subseteq X_0)$



Automata for $succ(X_1, X_2)$