Automata, Games & Verification

Summary #5

Today at 2:15pm in SR 016:
Seminar “Games, Synthesis, and Robotics”
Bounded Synthesis

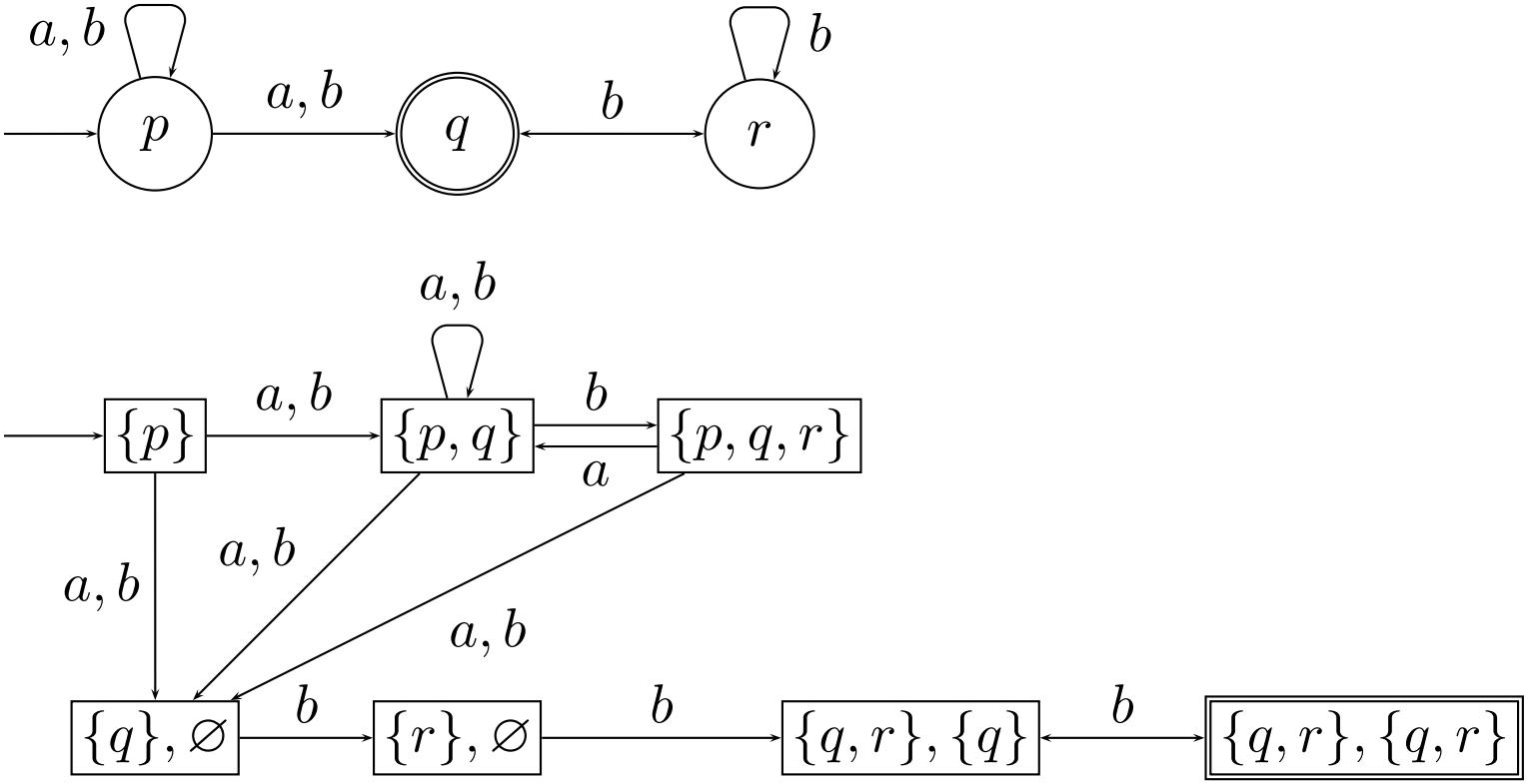
Determinization

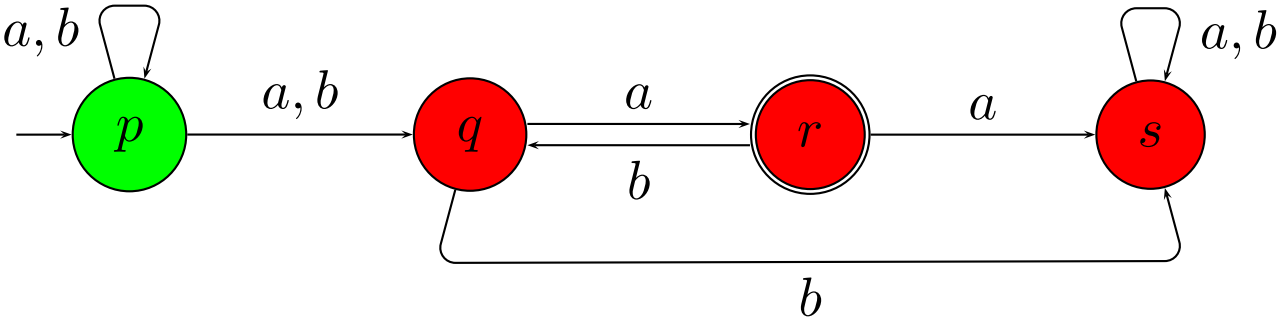
Theorem 1. [McNaughton's Theorem (1966)] *Every Büchi recognizable language is recognizable by a deterministic Muller automaton.*

Definition 1. *A Büchi automaton* (S, I, T, F) *is semi-deterministic if* $S = N \uplus D$ *is a partition of* S, $F \subseteq D$, $pr_3(T \cap (D \times \Sigma \times S)) \subseteq D$, *and* $(D, \{d\}, T \cap (D \times \Sigma \times D), F)$ *is deterministic for every* $d \in D$.

Lemma 1.

For every Büchi automaton $\mathcal{A}$ there exists a semi-deterministic Büchi automaton $\mathcal{A}'$ with $\mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{A}')$.

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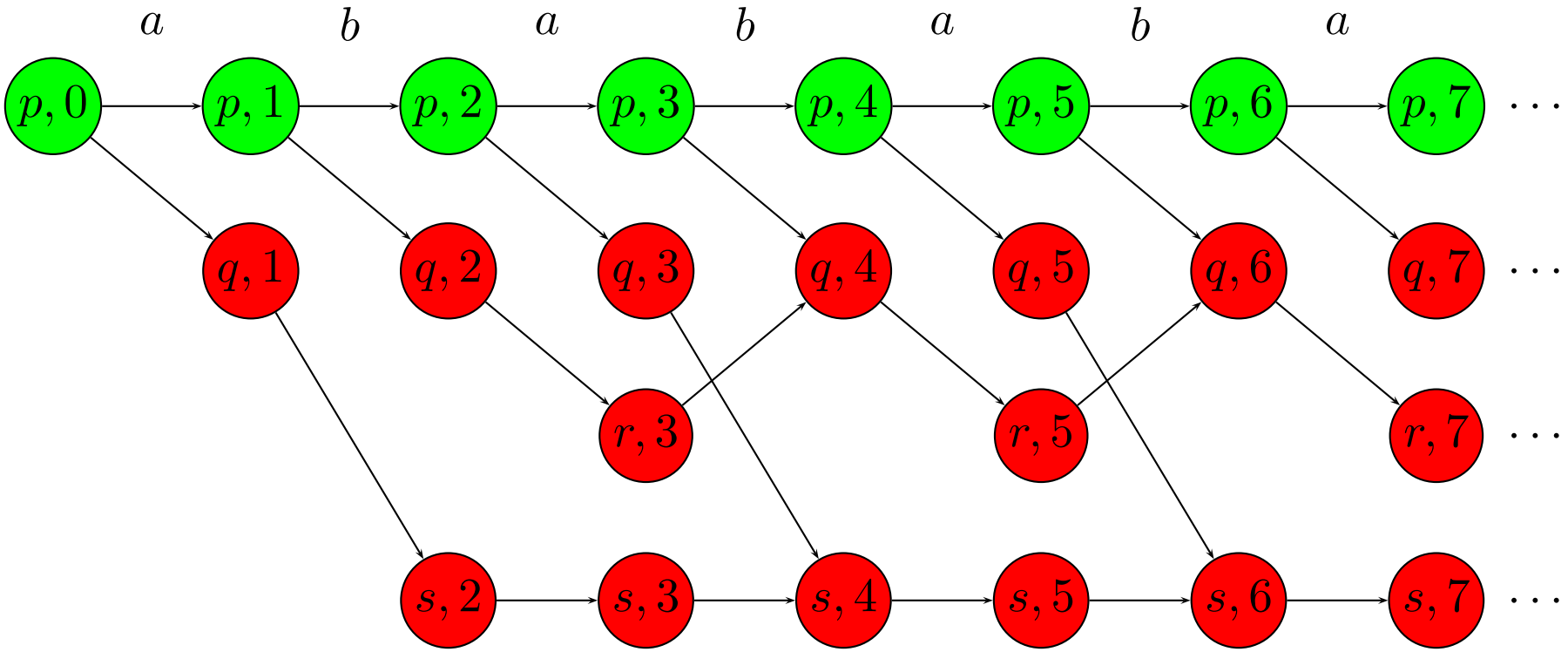
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