

Exercise 6

Samantha Hafner

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The finite automaton

$$(\{q_0, q_a, q_{ab}, q_{aba}\}, \{a, b\}, \delta, q_0, \{q_{aba}\})$$

where δ maps

$$\begin{aligned}(q_0, a) &\rightarrow q_a, (q_0, b) \rightarrow q_0, \\(q_a, a) &\rightarrow q_a, (q_a, b) \rightarrow q_{ab}, \\(q_{ab}, a) &\rightarrow q_{aba}, (q_{ab}, b) \rightarrow q_0, \\(q_{aba}, a) &\rightarrow q_a, \text{ and } (q_{aba}, b) \rightarrow q_{ab}.\end{aligned}$$

Recognizes the set of strings on the alphabet $\{a, b\}$ that end with the substring aba .