FSM

Definition (Finite State Machine)

A **finite state machine** is a tuple

$$\langle \Sigma, \Gamma, S, s_0, \delta, \omega \rangle ,$$

where

- Σ is an input alphabet,
- Γ is an out alphabet,
- S is a finite set of states,
- $s_0 \in S$ is an initial state,
- $\delta : S \times \Sigma \to S$ is a state-transition function,
- $\omega : S \times \Sigma \to \Gamma$ is an output function.