

A **Moore machine** is a six-tuple $M_o = (Q, \Sigma, \Pi, \delta, \lambda, q_0)$ where

Q, Σ, δ and q_0 are same as DFA,

Π is a set of **output symbols**, and

$\lambda: Q \rightarrow \Pi$ is a **output function**

Assume $x = a_1 a_2 \dots a_n \in \Sigma^*$ ($n \geq 0$).

if $n = 0 \rightarrow x = \varepsilon$,

| $n > 0 \rightarrow 1 \leq \forall i \leq n: a_i \in \Sigma, \delta(q_{i-1}, a_i) = q_i$.

fi

Output string of Moore machine M_o for input string $x = a_1 a_2 \dots a_n \in \Sigma^*$.

$\Lambda(M_o, x) = \lambda(q_0) \lambda(q_1) \dots \lambda(q_n) \in \Pi^*$.

$|\Lambda(M_o, x)| = |x| + 1$.

A **Mealy machine** is a six-tuple $M_e = (Q, \Sigma, \Pi, \delta, \lambda, q_0)$ where
 Q, Σ, Π, δ and q_0 are same as Moore machine and
 $\lambda: Q \times \Sigma \rightarrow \Pi$ is a **output function**.

Assume $x = a_1 a_2 \dots a_n \in \Sigma^* (n \geq 0)$.

if $n = 0 \rightarrow x = \varepsilon$,

$|n > 1 \rightarrow 1 \leq \forall i \leq n: a_i \in \Sigma, \delta(q_{i-1}, a_i) = q_i$.

fi

Output string of Mealy machine M_e for input string $x = a_1 a_2 \dots a_n \in \Sigma^*$.

$\Lambda(M_e, x) = \lambda(q_0, a_1) \lambda(q_1, a_2) \dots \lambda(q_{n-1}, a_n) \in \Pi^*$.

$|\Lambda(M_e, x)| = |x|$.