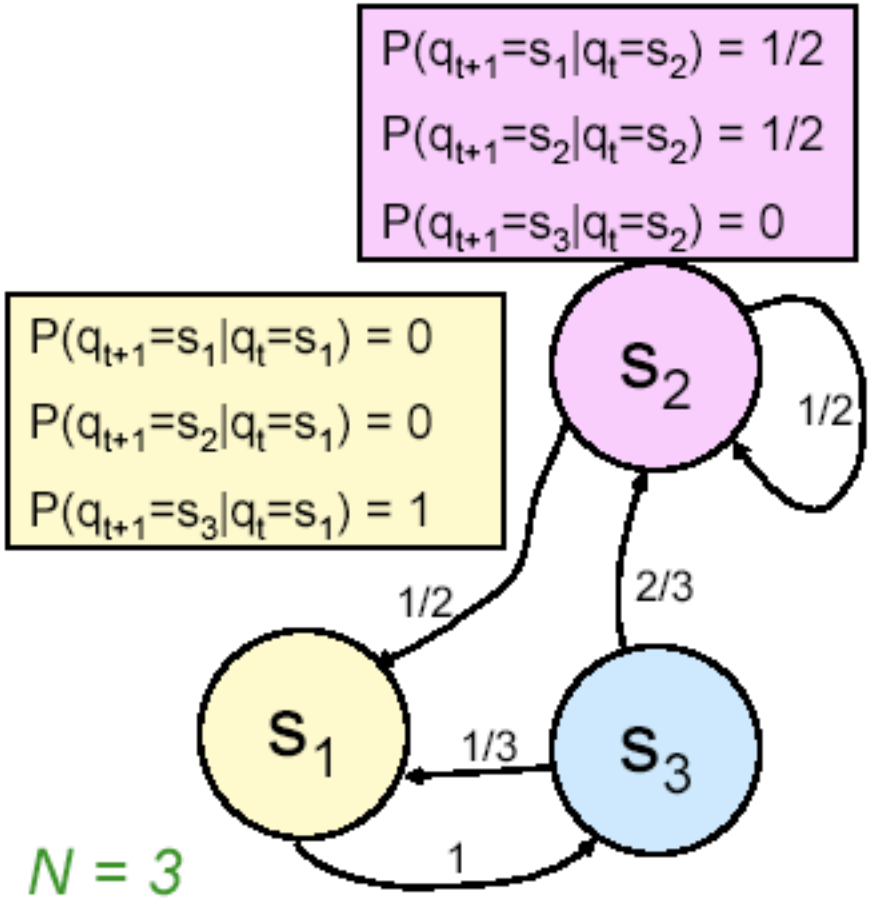
A Markov System



Has N states, called s_1, s_2 .. s_N

There are discrete timesteps, $t=0$, $t=1$, …

On the t'th timestep the system is in exactly one of the available states. Call it q_t

Note: $q_t \in \{s_1, s_2 .. s_N\}$

Between each timestep, the next state is chosen randomly.

The current state determines the probability distribution for the next state.

N = 3

t=1

$q_t=q_1=s_2$

Often notated with arcs between states