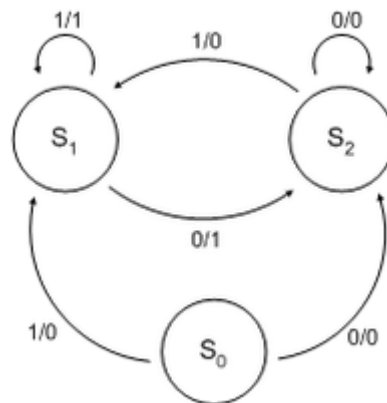


## Mealy machine

- A Mealy machine is a finite state transducer that generates an output based on its current state and input. This means that the state diagram will include both an input and output signal for each transition edge. In contrast, the output of a Moore finite state machine depends only on the machine's current state; transitions are not directly dependent upon input.
- The name Mealy machine comes from that of the concept's promoter, George H. Mealy, a state-machine pioneer who wrote "A Method for Synthesizing Sequential Circuits" in 1955.
- Mealy machines provide a rudimentary mathematical model for cipher machines. Considering the input and output alphabet the Latin alphabet, for example, then a Mealy machine can be designed that given a string of letters (a sequence of inputs) can process it into a ciphered string (a sequence of outputs). However, although you could use a Mealy model to describe the Enigma, the state diagram would be too complex to provide feasible means of designing complex ciphering machines.



## The state diagram of a simple Mealy machine

### Moore machine

- A Moore machine is a finite state transducer where the outputs are determined by the current state alone (and do not depend directly on the input). The state diagram for a Moore machine will include an output signal for each state. Compare with a Mealy machine, which maps transitions in the machine to outputs.

