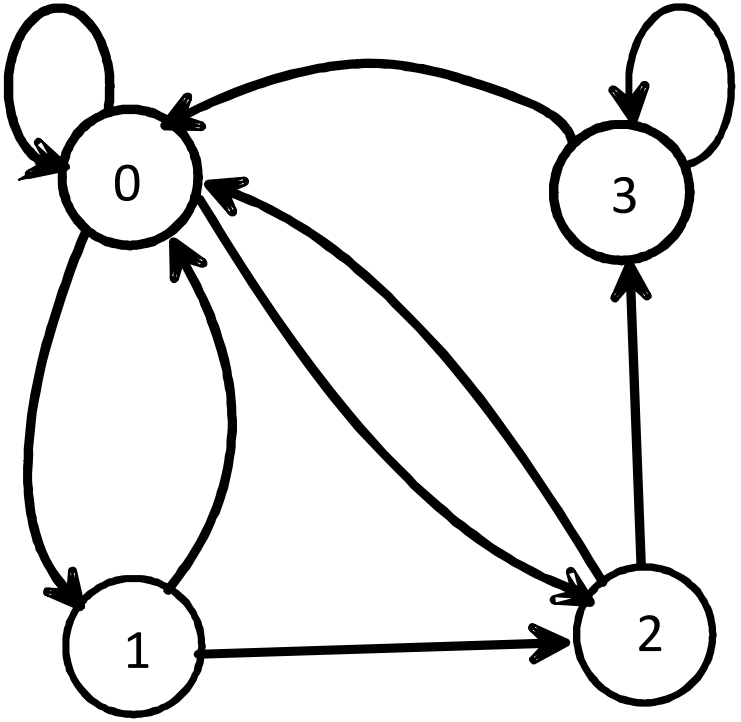
```
While True:
    ...
      if ( ):
            do1()
      elif ( ):
            do2()
      ...
```

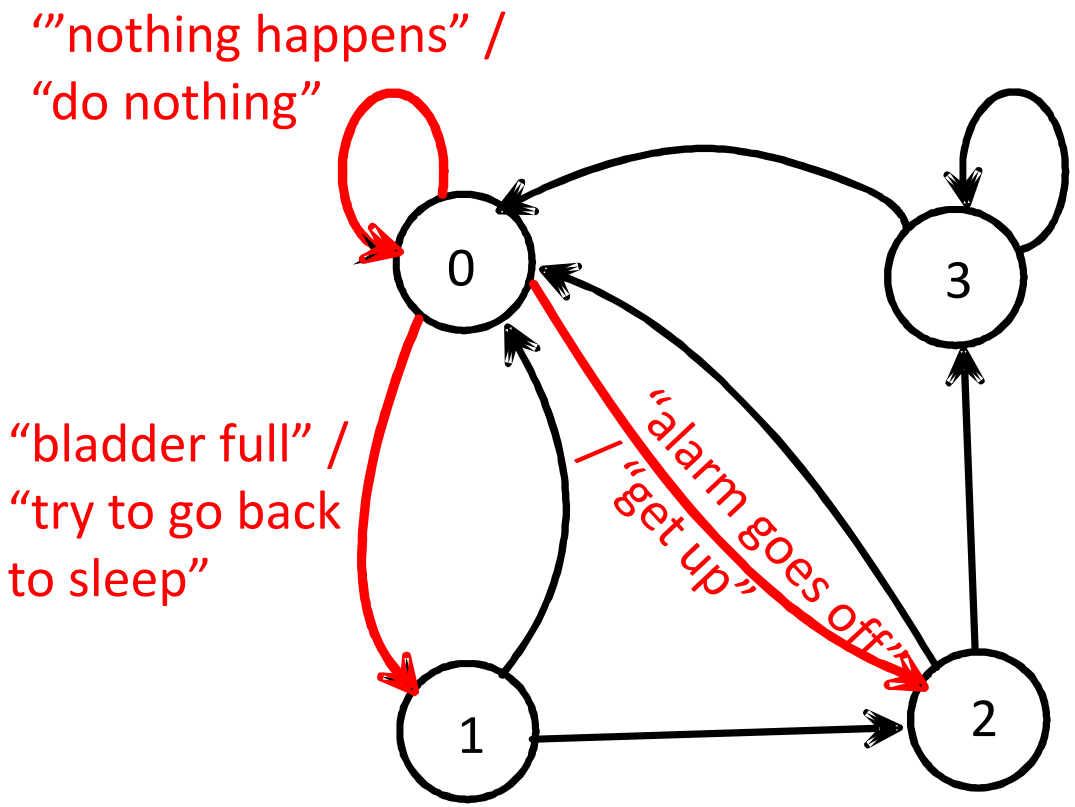
```
...

do1()
do2()

...
```

Finite State Machines (FSM)

Finite State Machine (FSM)

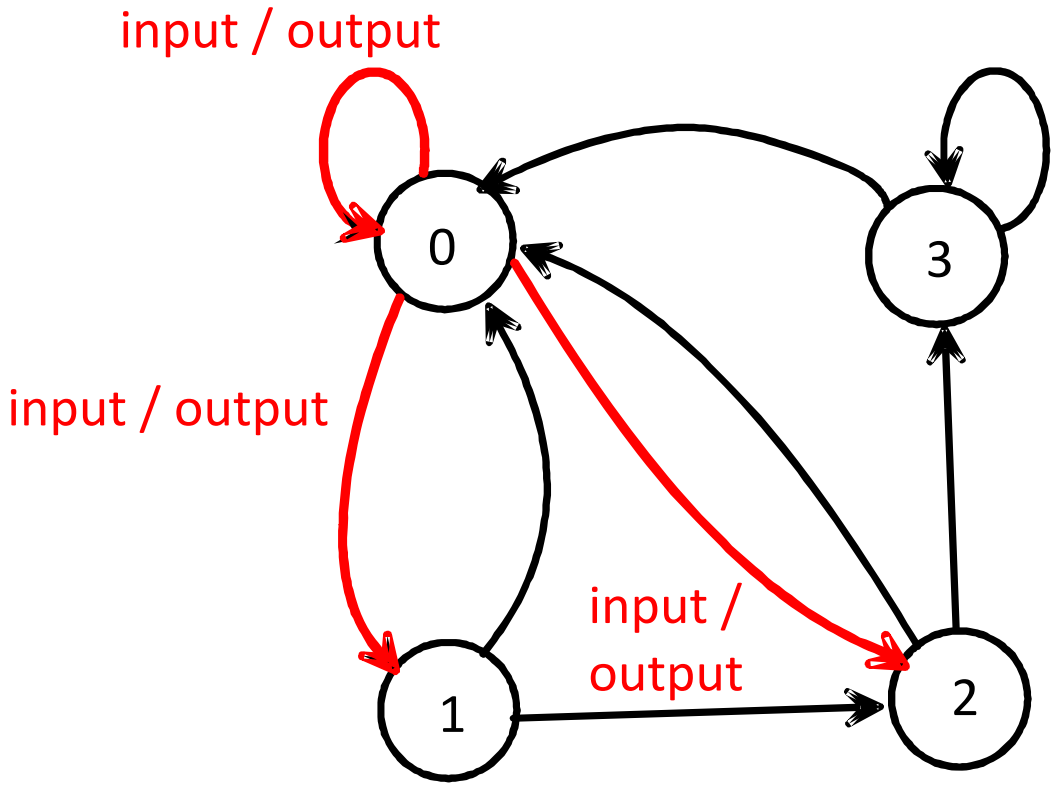


Finite State Machine (FSM)



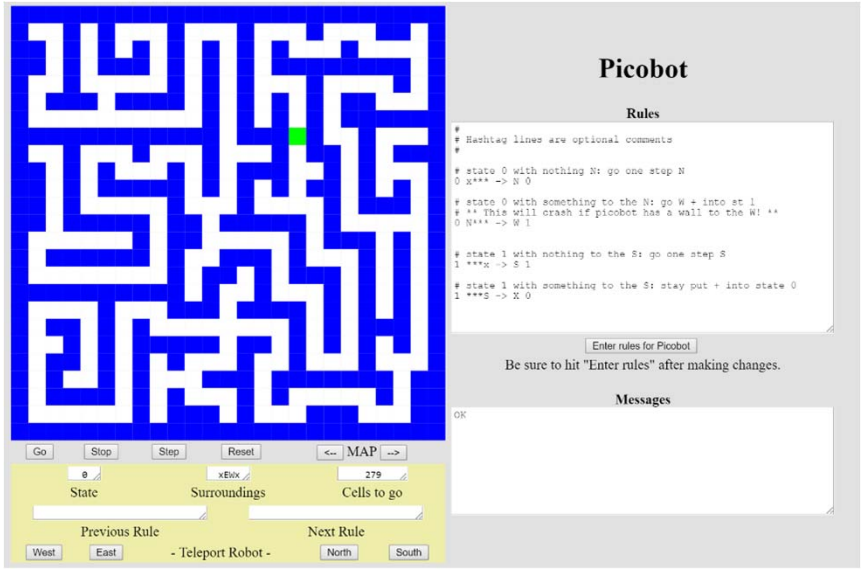
State 0: “in bed, asleep”
State 1: “in bed, awake”
State 2: “in the bedroom, out of bed”

Finite State Machine (FSM)

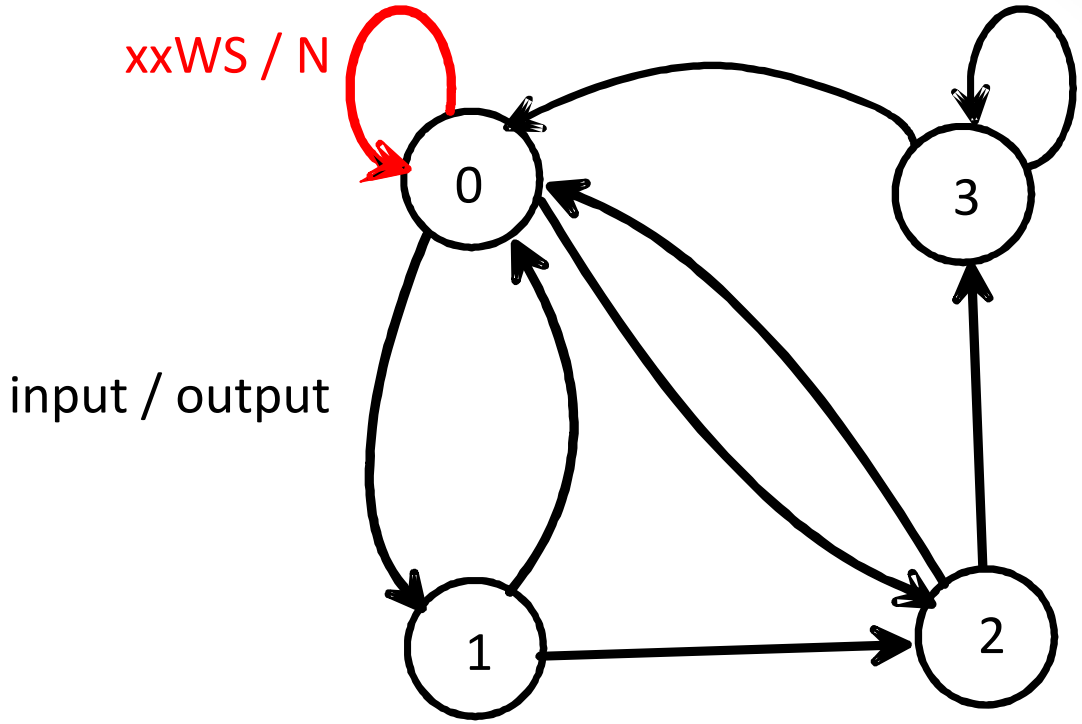


state input → output new state

Picobot



state	surroundings		direction	new state
0	xx**WS**	→	N	0



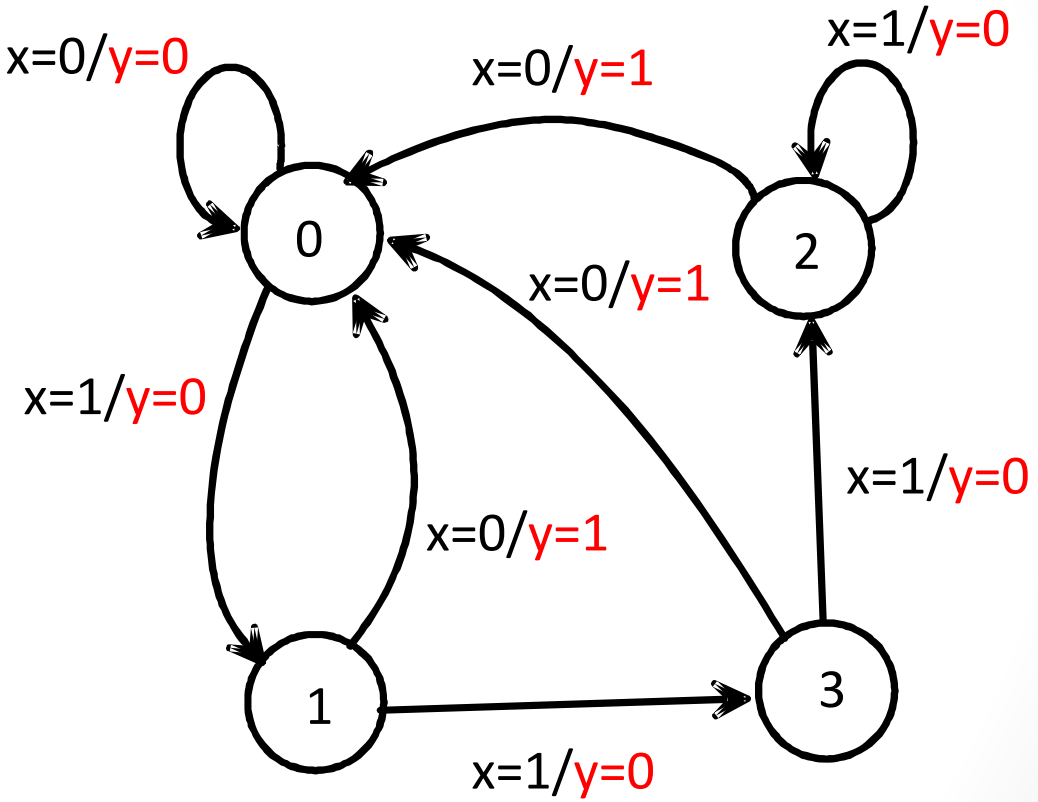
state	surroundings		direction	new state
0	xx**WS**	→	N	0

Finite State Machine (FSM)

State: s

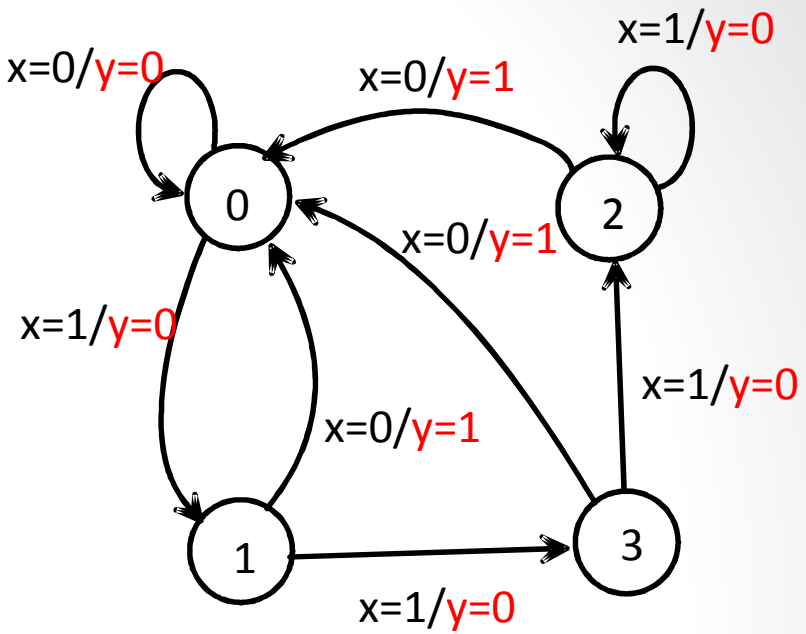
Input: x

Output: y



Mealy FSM

```
if (state == 0):
  if (x == 0):
      y = 0
      next_state = 0
  elif (x == 1):
      y = 0
      next_state = 1

elif (state == 1):
  if (x == 0):
      y = 1
      next_state = 0
  elif (x == 1):
      y = 0
      next_state = 3

…

state = next_state
```



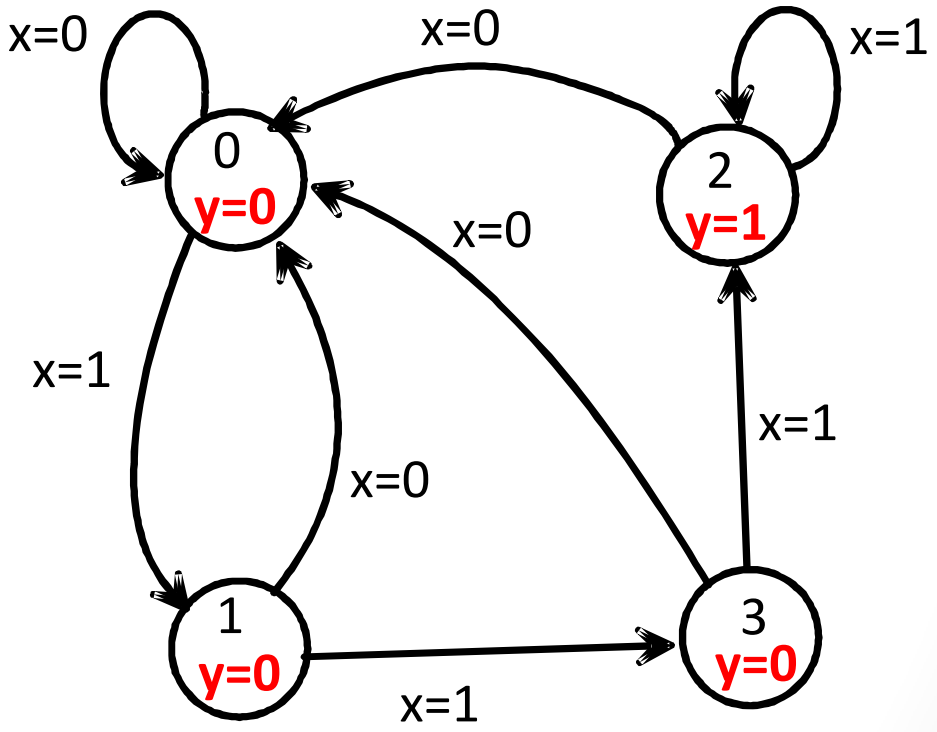
Mealy FSM

Finite State Machine (FSM)

State: s

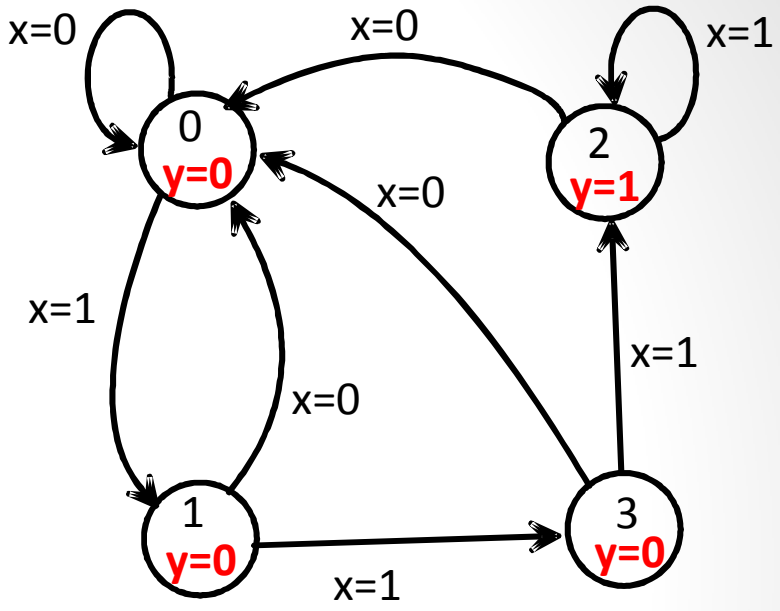
Input: x

Output: y



Moore FSM

```
if (state == 0):
  y = 0
  if (x == 0):
      next_state = 0
  elif (x == 1):
      next_state = 1

elif (state == 1):
  y = 0
  if (x == 0):
      next_state = 0
  elif (x == 1):
      next_state = 3

…

state = next_state
```



Moore FSM