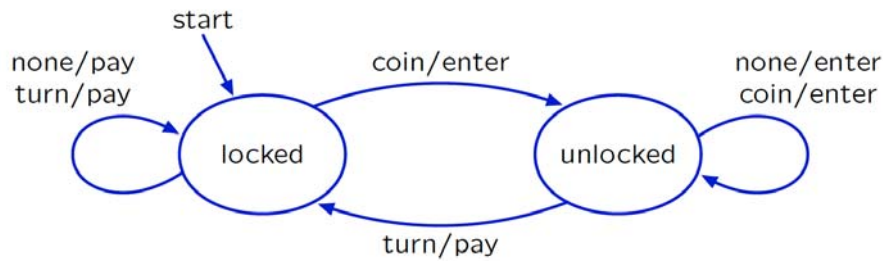


Problem Wk.2.1.2: Turnstile state machine

Here is a state transition diagram for a turnstile.



- It has states 'locked' and 'unlocked'
- It has inputs 'coin', 'none', and 'turn'
- It has outputs 'enter' and 'pay'

The idea is that if it is locked and someone puts in a coin, then it becomes unlocked and turns on a sign that says 'enter'. If it is unlocked and someone turns the turnstile, then it becomes locked and turns on a sign that says 'pay'.

We can describe this machine as an instance of the `SM` class, as follows:

```
class Turnstile1(SM):
    startState = 'locked'
    def getNextValues(self, state, inp):
        if state == 'locked':
            if inp == 'coin':
                return (Q1, Q2)
            else:
                return (Q3, Q4)
        else:
            if inp == 'turn':
                return (Q5, Q6)
            else:
                return (Q7, Q8)
# state == 'unlocked'
```

1. What string should Q1 be?

none
pay
coin
enter
unlocked
locked
turn

2. What string should Q2 be?

3. What string should Q3 be?

4. What string should Q4 be?

5. What string should Q5 be?

6. What string should Q6 be?

7. What string should Q7 be?

8. What string should Q8 be?

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