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5364SSVT6Y

```

timeout 10.0
external 'door'
process('main') {
    channel('door') {
        stimuli 'open', 'close'
        stimulus 'lock', {'passcode' => :integer}
        stimulus 'unlock', {'passcode' => :integer}

        responses 'opened', 'closed', 'locked', 'unlocked', '
            invalid_command', 'invalid_passcode', 'incorrect_passcode', '
            shut_off'
    }
}

var 'passcode_state', :integer, 0
var 'failures', :integer, 0

state 'closed_unlocked'
repeat {
    o { receive 'lock', constraint: 'passcode<-0-||-passcode>-9999'
        ; send 'invalid_passcode' }
    o { receive 'lock', constraint: 'passcode>=0-&&-passcode<=
        9999', update: 'passcode_state==passcode' ; send 'locked' ;
        goto 'closed_locked' }
    o { receive 'unlock', constraint: 'passcode==passcode' ; send '
        invalid_command' }
}

```

```
    o { receive 'open' ; send 'opened' ; goto 'opened' }
    o { receive 'close' ; send 'invalid_command' }
  }

state 'closed_locked'
  repeat {
    o { receive 'lock', constraint: 'passcode == passcode' ; send '
      invalid_command' }
    o { receive 'unlock', constraint: 'passcode < 0 || passcode >
      9999' ; send 'invalid_passcode' }
    o { receive 'unlock', constraint: 'passcode != passcode_state &&
      failures < 3', update: 'failures += 1' ; send '
      incorrect_passcode' }
    o { receive 'unlock', constraint: 'passcode != passcode_state &&
      failures >= 3' ; send 'shut_off' ; goto 'off' }
    o { receive 'unlock', constraint: 'passcode == passcode_state &&
      failures < 3' ; send 'unlocked' ; goto 'closed_unlocked' }
    o { receive 'open' ; send 'invalid_command' }
    o { receive 'close' ; send 'invalid_command' }
  }

state 'opened'
  repeat {
    o { receive 'lock', constraint: 'passcode == passcode' ; send '
      invalid_command' }
    o { receive 'unlock', constraint: 'passcode == passcode' ; send '
      invalid_command' }
    o { receive 'open' ; send 'invalid_command' }
    o { receive 'close' ; send 'closed' ; goto 'closed_unlocked' }
  }

state 'off'
}
```

2 Besto

No bugs detected.

3 Logica

1. When attempting to close an already closed door, the `invalid_command` response should be sent, yet the `closed` response is sent. I think the implementation does not account for bad-weather behaviour of closing a closed door.
2. When attempting to open an already opened door, the `invalid_command` response should be sent, yet the `opened` response is sent. I think the implementation does not account for bad-weather behaviour of opening an opened door.

4 OnTarget

1. When attempting to lock an already locked door with a valid passcode, the `invalid_command` response should be sent, yet the `locked` response is sent. I think the implementation does not account for bad-weather behaviour of locking a locked door.



2. When attempting to lock an already locked door with an invalid passcode, the `invalid_command` response should be sent, yet the `invalid_passcode` response is sent. I think the implementation does not account for bad-weather behaviour of locking a locked door.

5 quickerr

1. When attempting to lock an unlocked door with an invalid passcode, the `invalid_passcode` response should be sent, yet the `locked` response is sent. I think the implementation does not account for invalid passwords when locking a door.
2. When attempting to close an opened door, the `closed` response should be sent, yet the `opened` response is sent. The implementation is just simply wrong for closing an opened door.

6 SmartSoft

1. When attempting to unlock a locked door with an incorrect passcode 3 times, the door should shut off. Instead, the door shuts off after 3 failed unlocking attempts with invalid passcodes. I think the implementation mixes up invalid passcodes with incorrect passcodes.

7 TrustedTechnologies

1. When attempting to unlock a locked door with an incorrect passcode, the `incorrect_passcode` response should be sent, yet the `unlocked` response is sent. I think the implementation does not check if the passcode is correct when unlocking a locked door.

8 univerSolution

1. When attempting to lock an unlocked door with a valid passcode, the `locked` response should be sent, yet the `invalid_passcode` response is sent. I think the implementation's check for an invalid passcode is not correct.

9 XtraSafe

No bugs detected.
