CSC244

Preliminary Report

Project 1

FSM Vending Machine

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**Inputs & Outputs**

Inputs: clock, $0.25, $0.50, $1.00, asynchronous reset

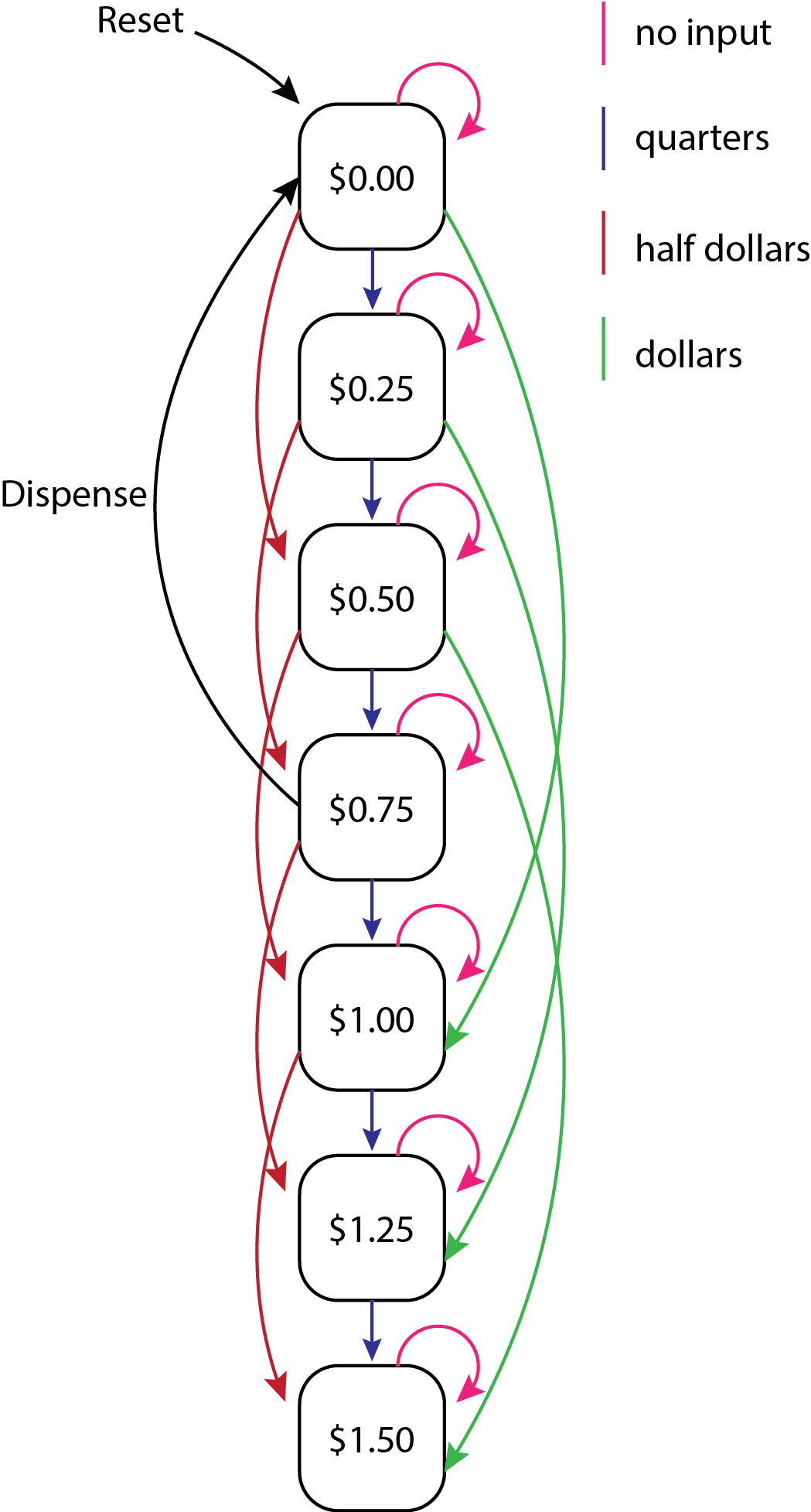
Outputs: MacGuffin, change in quarters, change in half-dollars, 7-segment display (inserted money), 7-segment display (change due)

**Assumptions**

Coins will be inserted one at a time.

**Required States (number of flip-flops)**

**State transition diagram**



**State transition/output table**

**List of required System Verilog Modules (with inputs/outputs)**

Debounce (Clock):

* Input: Clock, Clock (noisy)
* Output: Clock (clean)

Debounce (Key):

* Input: Clock, Reset Key (noisy)
* Output: Reset Key (clean)

4:2 Encoder:

* Input:
* Output:

D-flip-flop:

* Input: Clock, Next State
* Output: Current State

7-Segment (State/Change):

* Input:
  + Decoder:
    - Input: 4bit binary
    - Output: Y[0-15]
* Output: 7-Segment LED’s[0-6], decimal point