Electronic Design Automation
CSE 215

Course Project

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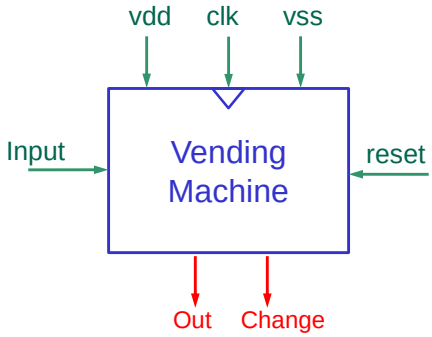
Vending Machine

- Sells soft drink and juice.
- The price of the drink is **1.25LE**.
- The machine only accepts 1LE, 0.5LE and 0.25LE.
- The user first enters the money, then selects either a **soft drink** or **juice**.
- The machine returns the change if any.

Details

- Input: (needs encoding)
  - **0.25LE**
  - **0.5LE**
  - **1.0LE**
  - **Soft Drink**
  - **Juice**
- Out: (needs encoding)
  - **Nothing**
  - **Soft Drink**
  - **Juice**
- Change: (needs encoding)
  - **No Change**
  - **0.25LE**
  - **0.5LE**
  - **0.75LE**
- The clk frequency = 1MHz (for testbench)
- Hint: At each state, must define next state for each input possibility.



Project Implementation

- Project statement, deliverables and deadline: Check course web site.
- Guideline files: Check the “Project Files” folder.

First Step – Project 1:

- Design the state diagram. Choose Mealy or Moore outputs. Must explicitly state your choice in the documentation.
- Implement the FSM in VHDL.
- Prepare a ModelSim testbench to validate your design with proper assertions to be used throughout the project.
  - The more the assertions, the more effective the testbench will be in testing different phases of the design.

- Best to do each part of the project after the lecture directly and be prepared for the next step.