Advanced Computer Architecture

FSM DESIGN EXERCISE

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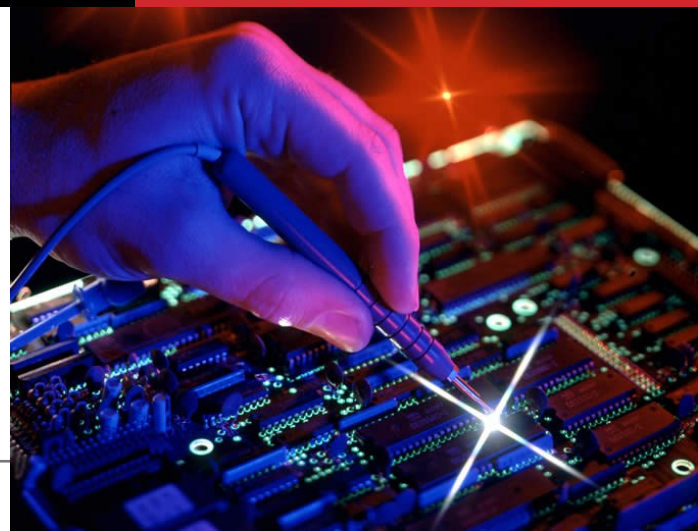
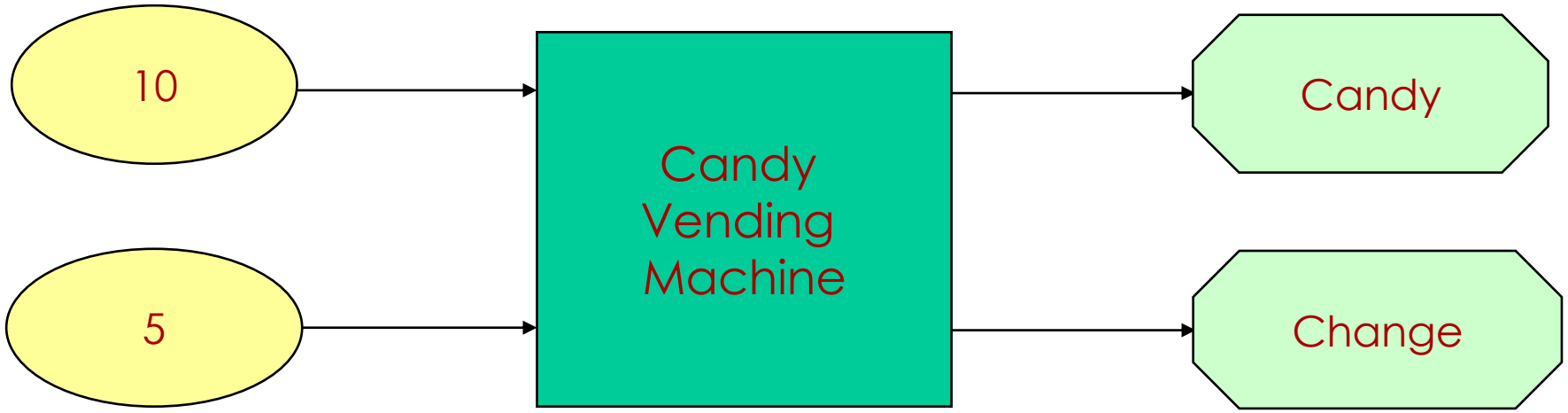


CONTENTS

- **FSM Design Exercise**
  - Candy Vending Machine

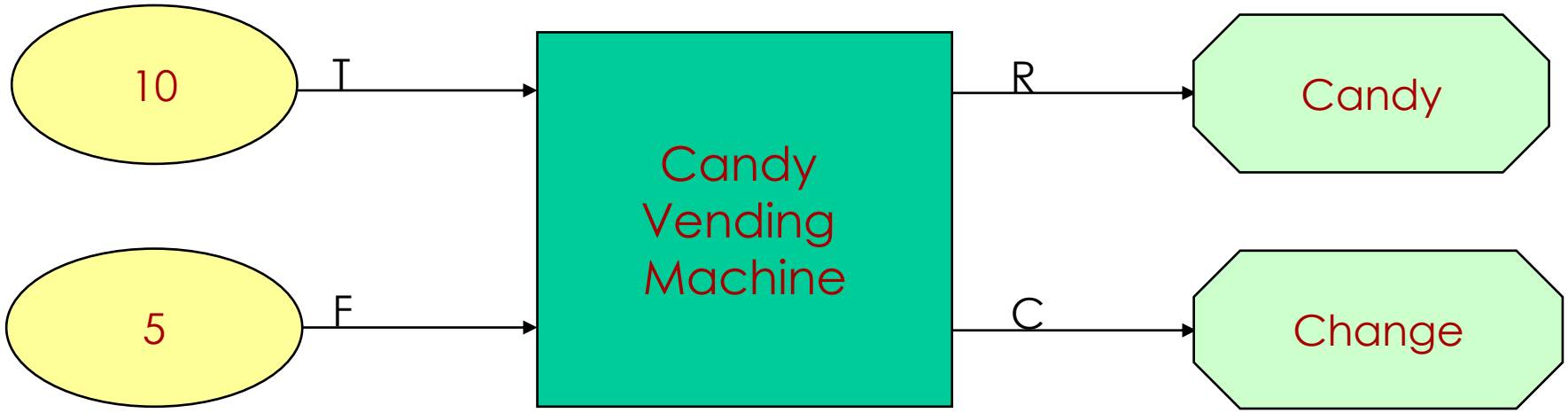
FSM DESIGN EXAMPLE

- Design Specification: Candy Vending Machine
  - One candy cost 20
  - Only 10 and 5 coins are accepted
  - When money exceeding 20 comes in, candy and change are released
    - The money received cannot exceed 25 won



FSM DESIGN EXAMPLE

- Input/Output Specifications
  - Inputs
    - T (Ten): Enter 10 coin
    - F (Five): Enter 5 coin
  - Outputs
    - R (Release): Candy release
    - C (Change): Change release



FSM DESIGN EXAMPLE

- Design the FSM state diagram for the Candy Vending Machine using either Mealy or Moore-type FSM
- Design the FSM state transition table
  - Encode the state transition table using binary encoding
  - Derive Boolean equations from the state transition table
- Design the FSM output table
  - Encode the output table using binary encoding
  - Derive Boolean equations from the output table
- Draw the FSM schematic arranged as the architecture below: