Finite State Machine Applications

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Outline

1 Applications of Finite State Machines

2 Vending Machine

3 Pac-Man

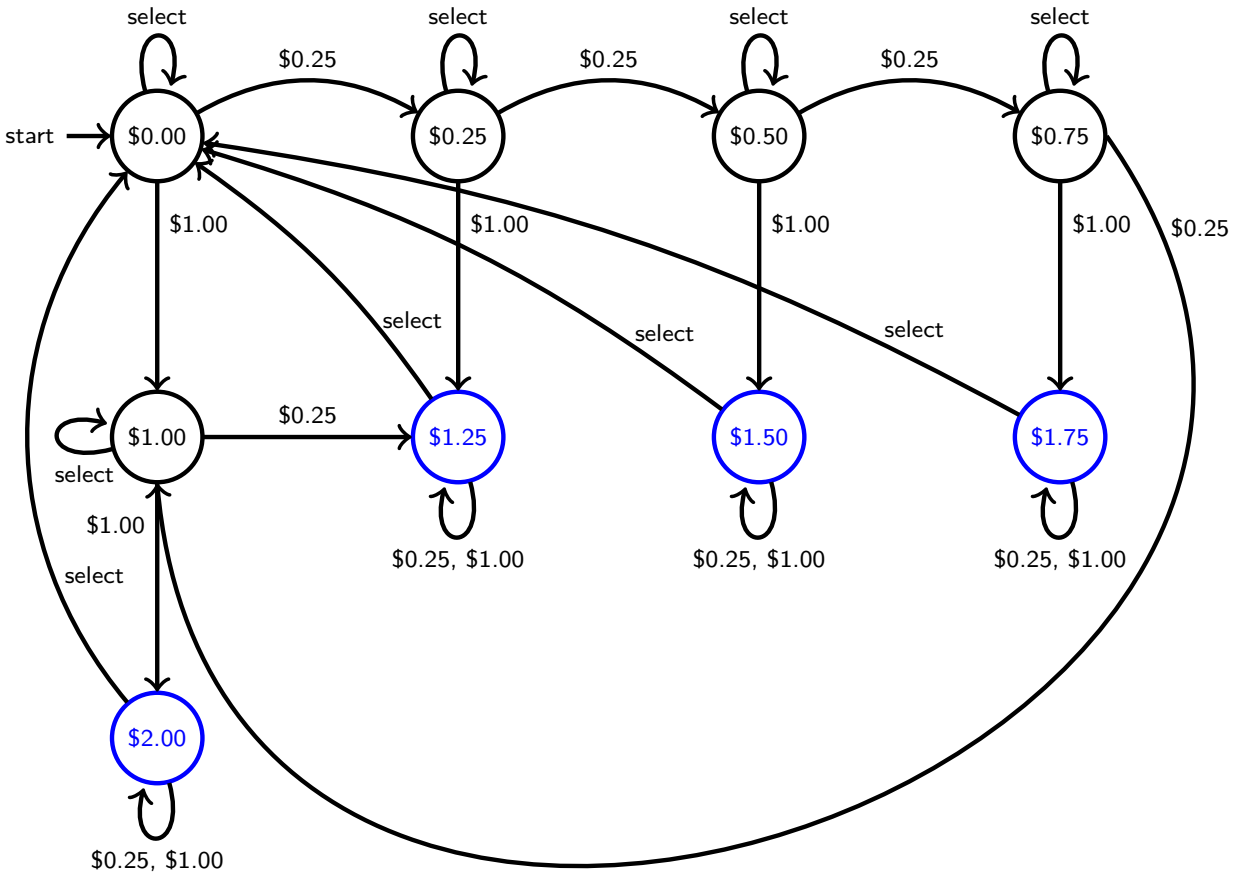
4 TCP

5 Adding Output

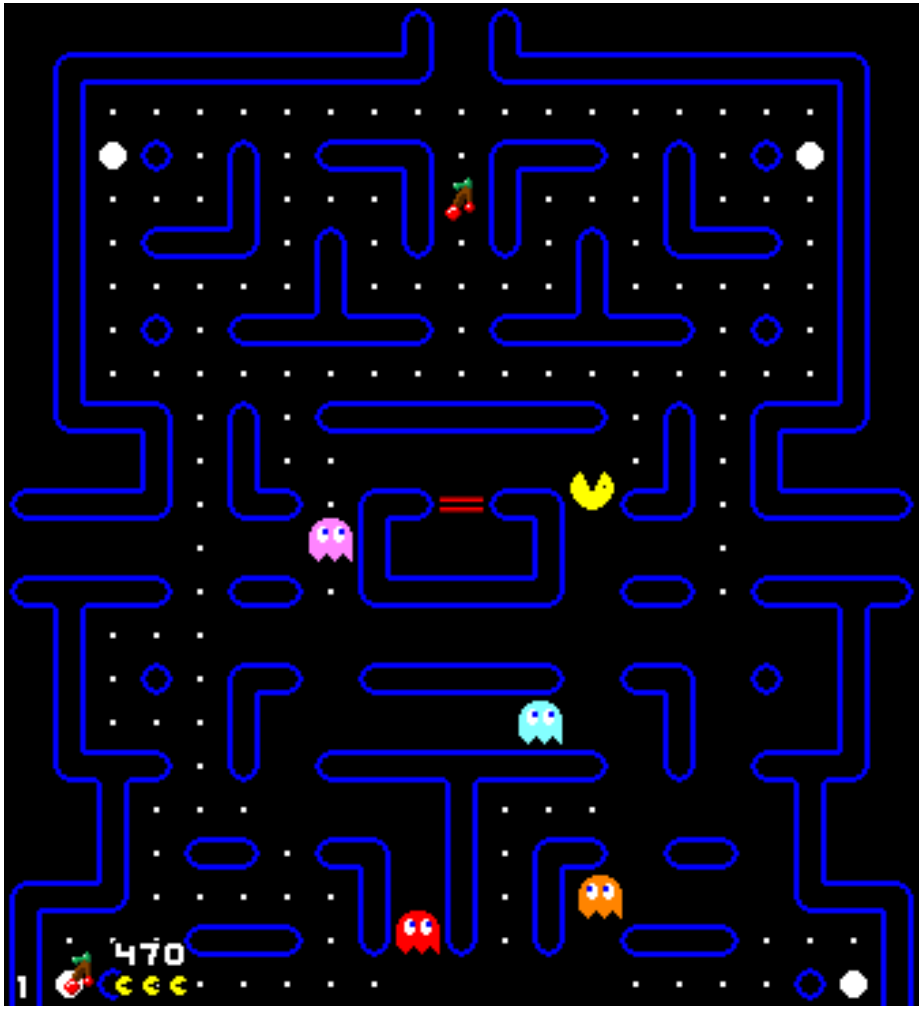
1 Applications of Finite State Machines

- Vending Machines
- Traffic Lights
- Video Games
- Text Parsing
- CPU Controllers
- Protocol Analysis
- Natural Language Processing
- Speech Recognition

2 Vending Machine



3 Pac-Man



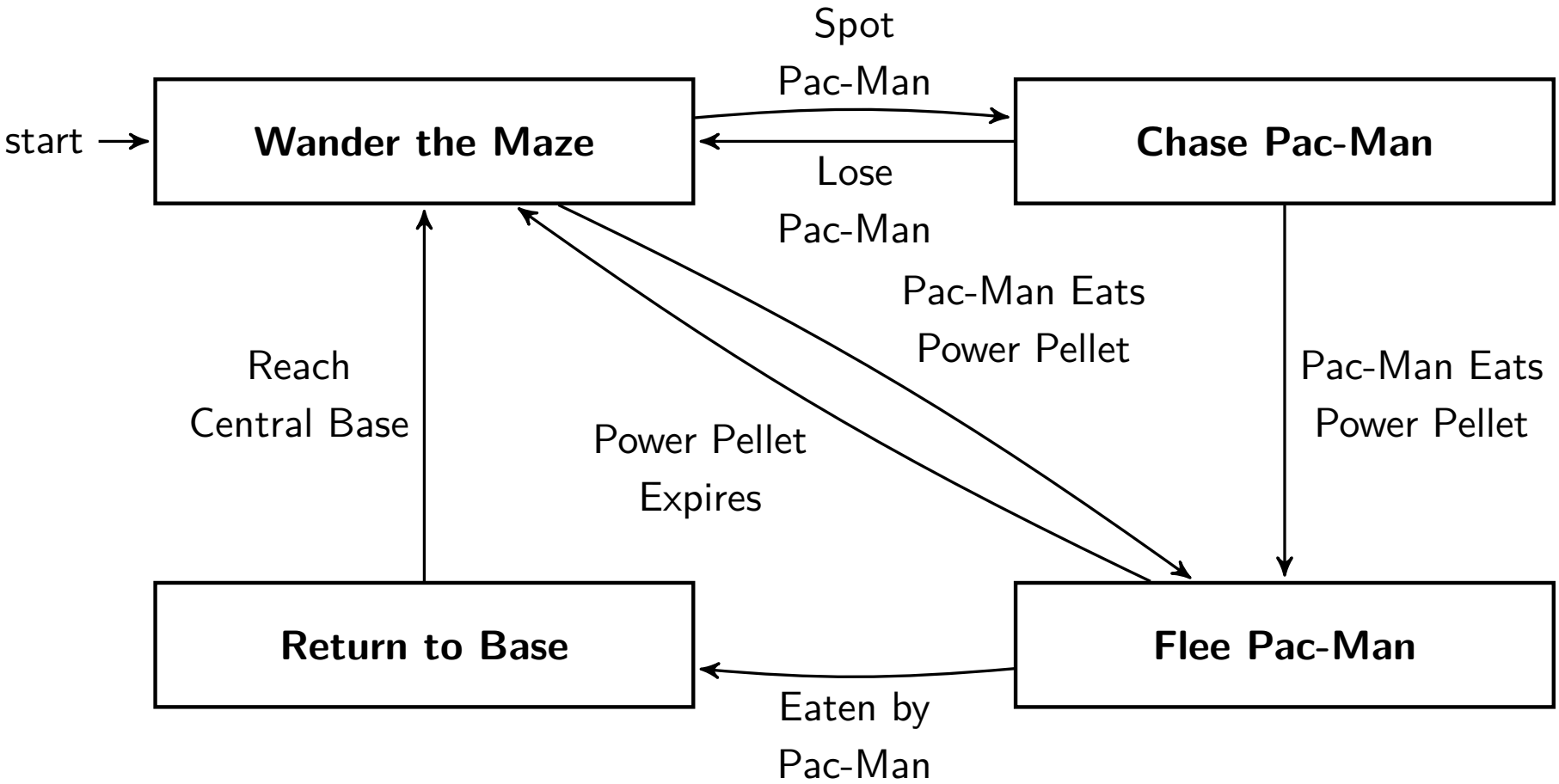


Figure 1: Behavior of a Pac-Man Ghost

4 TCP

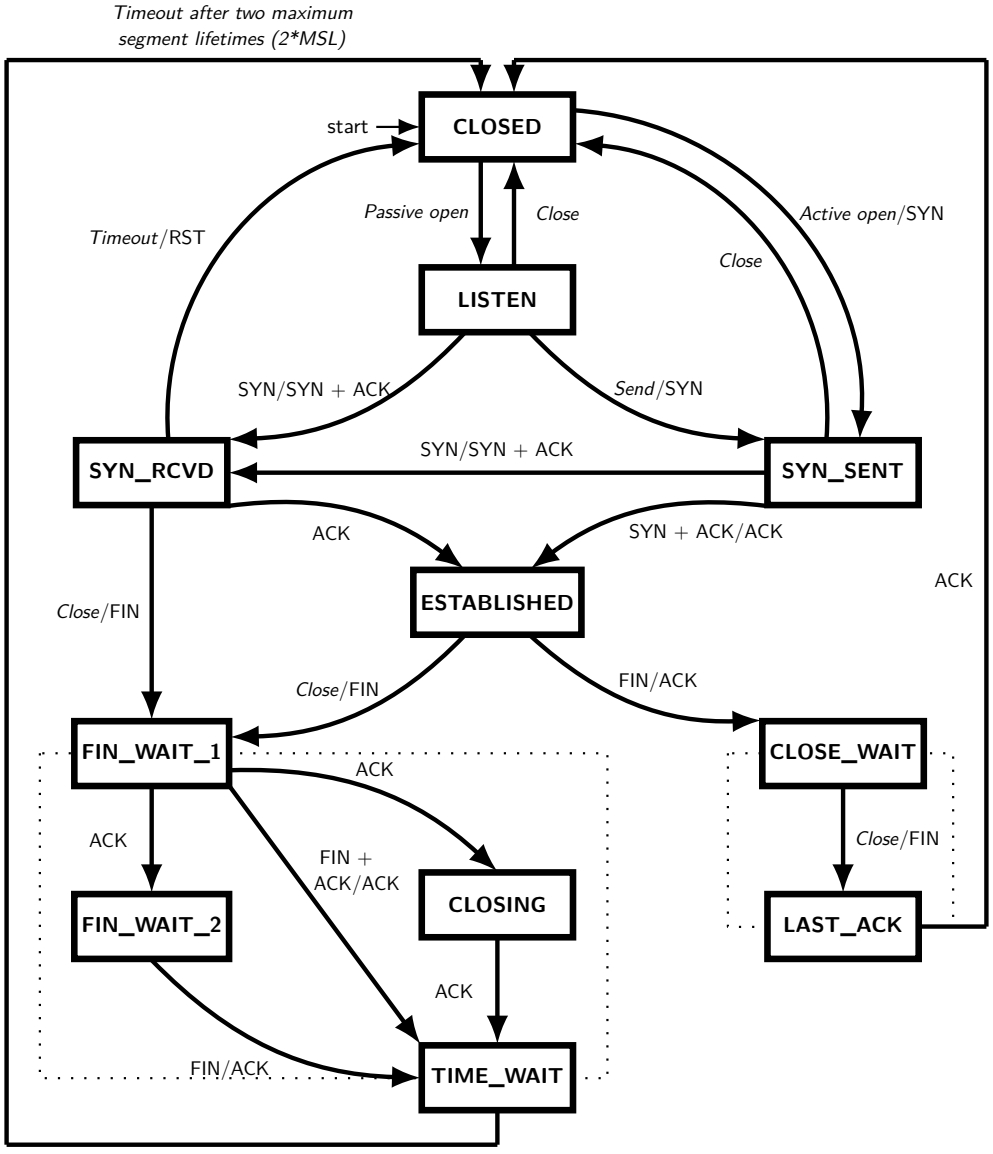


Figure 2: TCP State Diagram

5 Adding Output

Finite state machines with an output tape are known as finite state transducers (FST). A Mealy machine is an example of a deterministic FST.

Instead of accepting or rejecting strings, a Mealy machine maps input sequences to output sequences.

Next: Finite State Transducers