Project 4

Project 4 Objectives

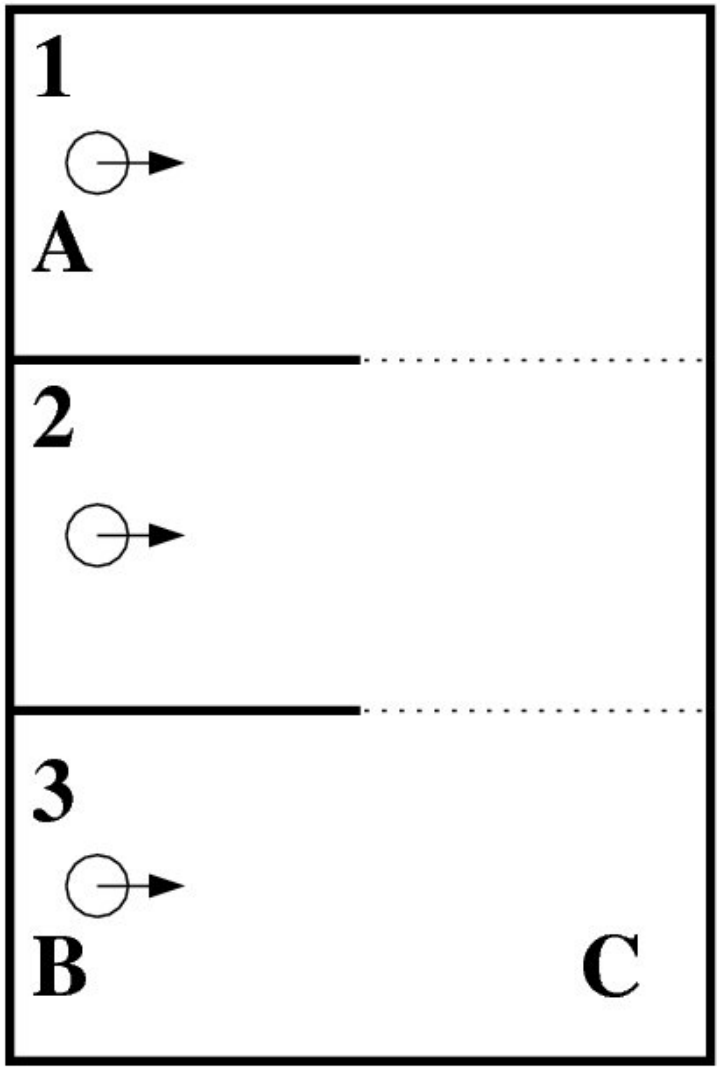
At the end of this project, you should be able to:

- design a Finite State Machine (FSM) that performs a specified high-level task,
- implement the FSM in code,
- connect FSM events to sensor events, and
- connect FSM actions to control actions.

Project 4 Field

Starting location: one of 1, 2, or 3 (unknown)

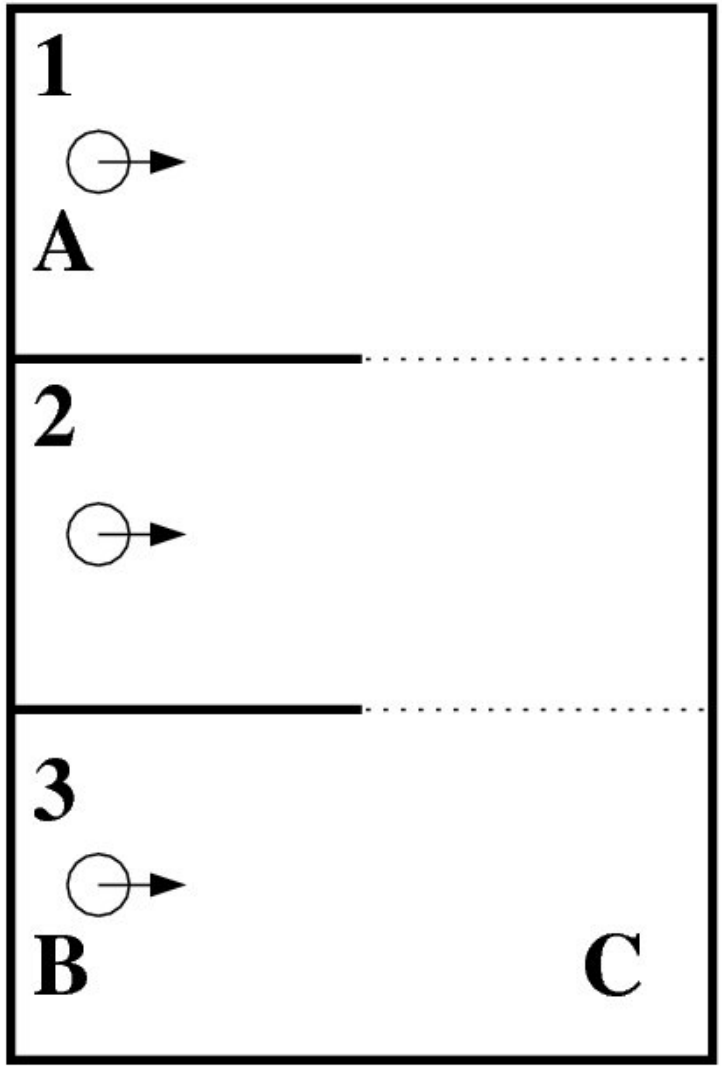
Switch zero in some state



Project 4: Phase 1

- If starting at 1, then navigate to C
- If starting at 2, then navigate to B
- If starting at 3, then navigate to A

Must infer which location you are starting at



Project 4: Phase 1

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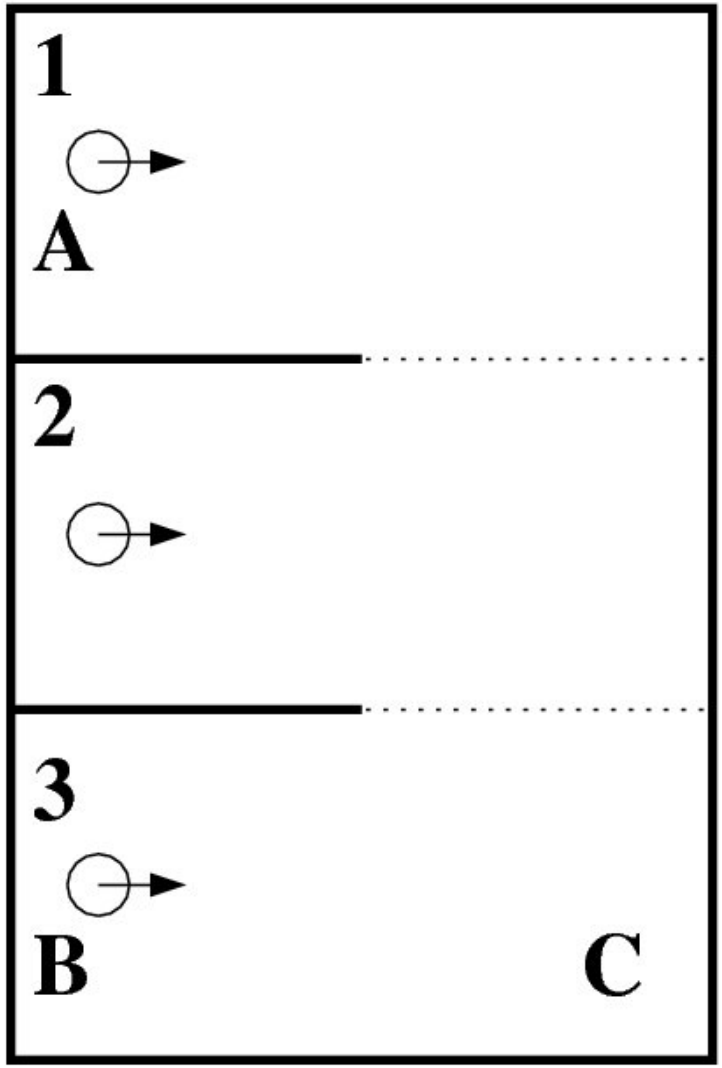
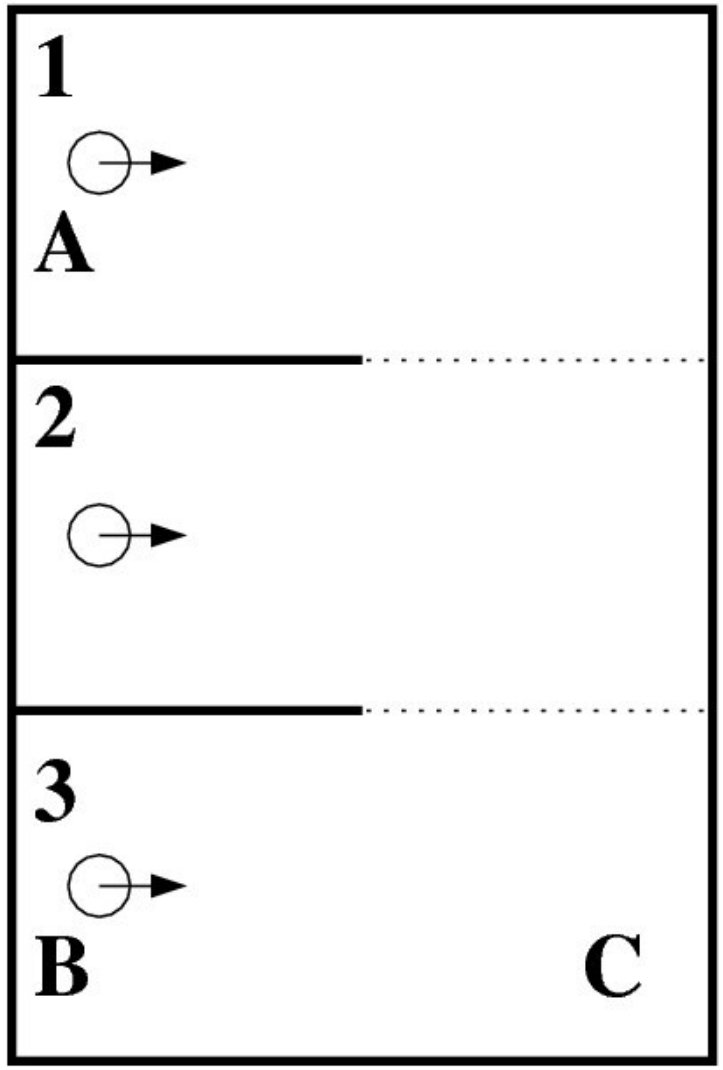


Note: you may choose to handle any 2 of these 3 cases

Project 4: Phase 2

- If switch was in FALSE configuration, then navigate to A and stop
- Otherwise: navigate to B and stop



Part 1: Design the FSM

- What are the events?
  - E.g., reaching a wall
- Actions?
  - E.g., setting the heading_goal or braking
- States?
- Transitions?

Part 2: Implement the FSM

- Implement and test incrementally

Checkpoint

- 30 minute meeting by Tuesday
- Have part 1 completed and part of part 2 completed and tested
  - FSM must do something interesting
- Demonstrate that your project 3 PD controller is properly tuned up
- A successful checkpoint is worth 10% of the project grade