Project 9:
Finite State Machines I

Questions?

Project 8

- Demos by Monday

Project 9: “Your Mission”

Produce the following behavior:

- Wait for the switch to be pressed.
- Record the current orientation as your goal.
- After a 5-second delay, ramp up the middle fan to a point where the craft begins to turn (as measured by the gyro).
- Slightly drop the middle fan thrust.
- Move forward until a wall is detected.
- Stop
- Make a 90 degree turn to the left
- Move forward until another wall is detected.
- Stop

Implementation

We are using a Finite State Machine to implement this entire sequence

- Use a FSM diagram to plan your machine

Code:

- Use an enumerated data type *State* to capture the different possible states
- Define behavior for each state:
  - What are the events, actions and transitions?
- Implement and test incrementally

- Examine code skeleton in specification

Notes

- Implement and test the FSM incrementally
- You can test your code while holding onto the craft
  - Person holding simulates the sequence of movements
- We have a partial field set up now; a full set of walls will be installed soon
- Consider turning your lateral fans so that they point toward the midline of the craft (better rotational control, with less forward acceleration)
- Middle fan thrust should be such that your craft is still dragging a bit on the ground

Next Time

Finite State Machines continued…