Project 2

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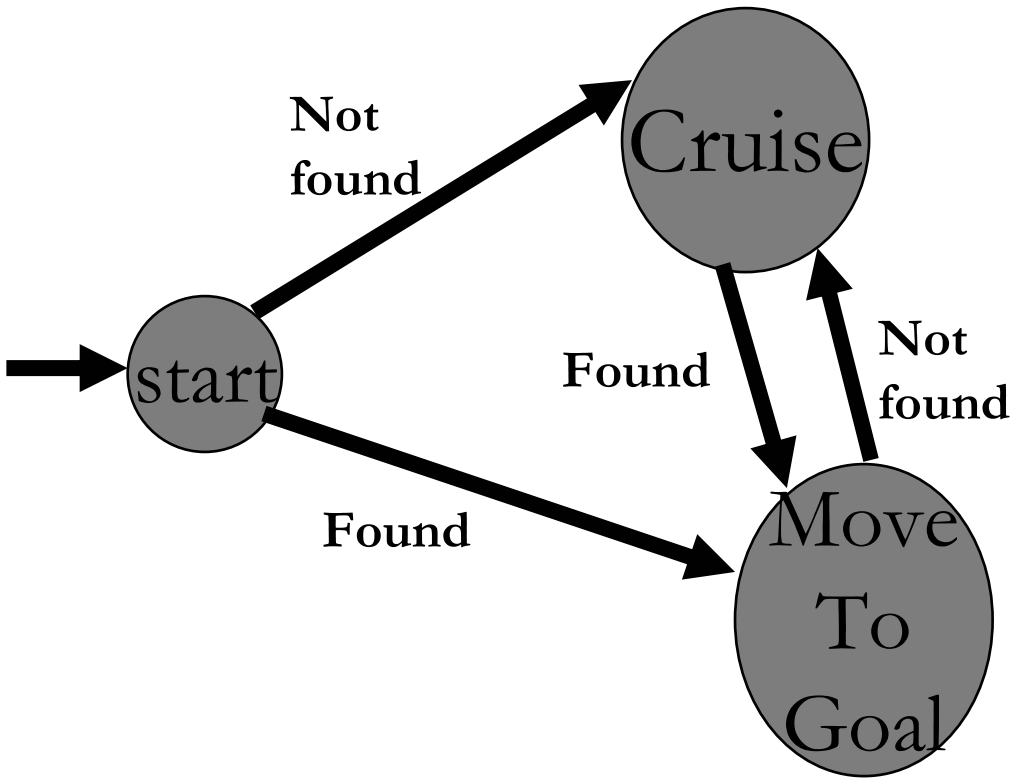
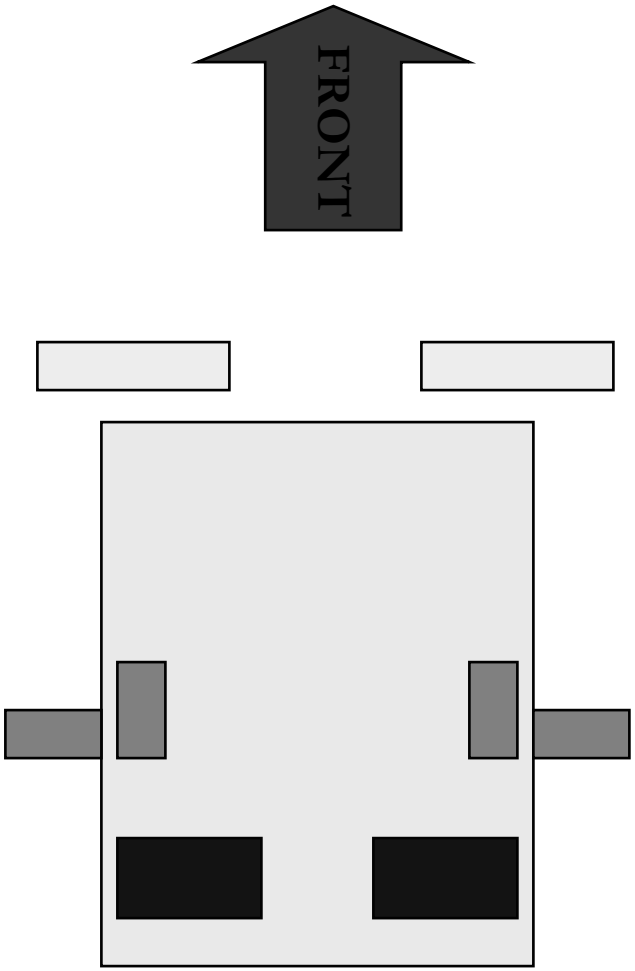
Design

- Schema Theory
- Behaviors
  - Cruise
  - Avoid rocks
  - Avoid haz objs
  - Move to goal
- Flag variables for communication & coordination



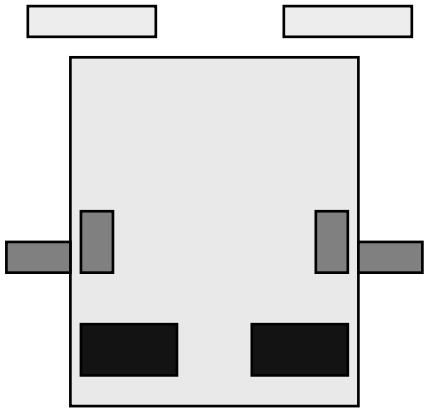
Hardware

- 4 light sensors
- 2 range finders
- 2 touch sensors
- 2 motor (1 for each wheel)



Works well

- 2 touch sensors (bumper)
  - Detect rocks
  - Turn off lights
- 2 range finders
  - Detect hazard objects consistently
- 4 light sensors
  - Detect lights from front, left and right
  - Fine-tune the moving toward the target

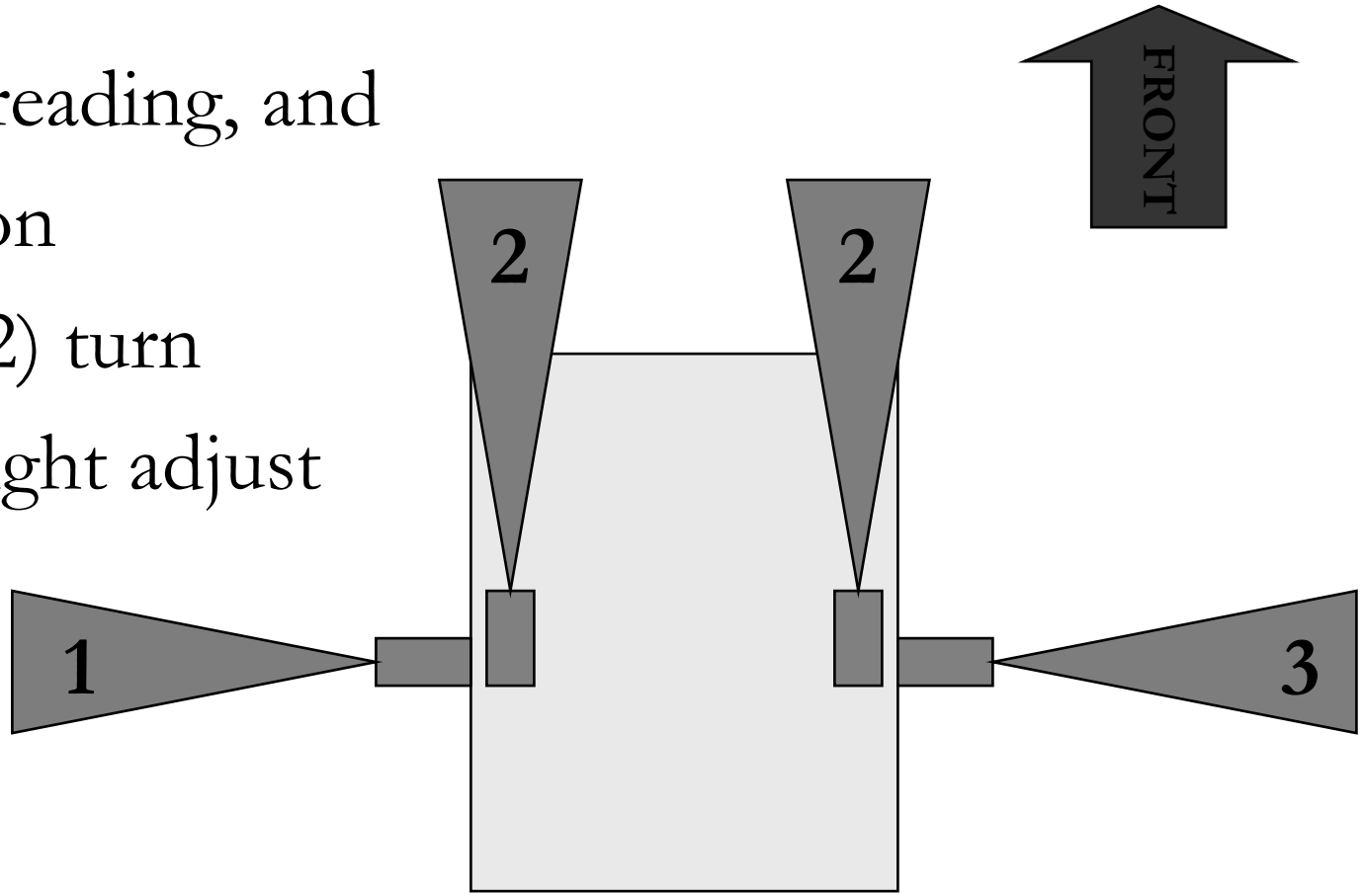


Problems/Improvements

- Bumper
  - Touch sensors didn't work consistently
  - Bumper fell apart
  - Got stuck
- Better construction design
- Use tape/hot glue to fix the bumper
- Proper height from the floor

Move to goal

- Find min reading, and
- Its direction
- If (not in 2) turn
- If (in 2) slight adjust
- Sleep



Problems/Improvements

- Box canyon
- Local minima
  - Random turning if both sensors senses sth.
  - Take an opposite direction turn at 4^{th} sensing
  - Random turning angle (sleeping time)
  - Smaller effective detecting distance
  - Increase sleep time in move_to_goal function
- Touch hazard objects
  - Decreasing backward distance
- Overall
  - High fault tolerance, but take time
  - Inefficient