

# Professionalism

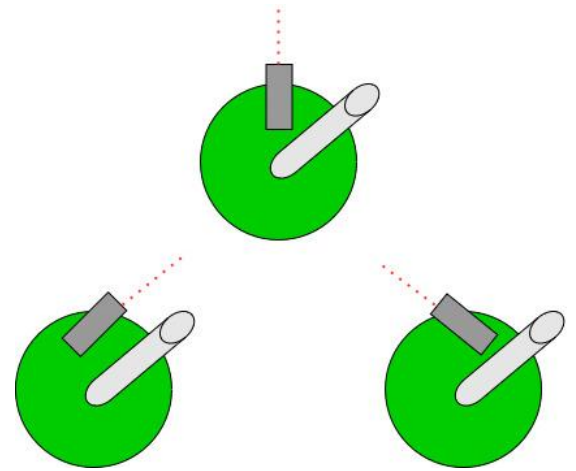
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# Roomba Swarm

**Problem:** Implement a design so that a collection of Roombas to be controlled by a lead Roomba based on certain specifications.

## Requirements:

- Roombas must be able to exhibit swarm-like behavior
- Follower roombas must follow behind a lead roomba at a specified distance and angle within 10% error
- The follower roombas should not receive any controls and should rely only on their own sensor data
- The leader roomba will receive movement directions from a base computer
- Components must be able to be easily implemented on the existing ISU Roombas



# Work Competence

- Applicable to our project
- High levels of precision and consistency required
  - Roomba movement
  - Roomba communication
- High performance level

# Financial Responsibility

- Applicable to our project
- Given a budget for sensors; keep costs low
- High performance level

# Communication Honesty

- Applicable to our project
- Essential for proper requirements and implementation
- Medium performance level

# Health, Safety, Well-Being

- Applicable to our project
- Limitations of Roombas/sensors must be respected
- High performance level

# Property Ownership

- Applicable to our project
- Borrowing the Roombas from ISU
  - Return at the same level of quality as received
  - Client will own everything
- High performance level

# Sustainability

- Not applicable to our project
- Only local hardware is used, which is not expended/lost
- N/A performance level



# Social Responsibility

- Applicable to our project
- Project can be re-developed for aspects of society that could benefit from coordinated automation
  - Supply Chain
  - Agriculture
- N/A performance level

# Most Applicable Area

- Work Competence
  - Quality and Integrity are necessary
  - Movements/Leader algorithms in the works

QUESTIONS?