CoSpace Rescue @ Pei Hwa

Lesson 1

Robotics & CoSpace Rescue

- What is the definition of a Robot?
  - Remote Controlled Car
  - TwitterBot
- Simulators
  - Transformers Ride in Universal Studios
  - Microsoft Robotics Developmer Studio

CoSpace Simulator

- Boards
- Physics
  - Gravity
  - Inertia
  - Momentum
  - Lighting?
  - Scratches on the surface?
  - Imperfect motors?
  - Rust? Dust?

CoSpace Rules

- Game Boards

- Mission

- Rules (Do's & Dont's)

CoSpace "Robot"

- Sensors
  - ?
- Motors
  - ?
- Controller (vs. Human Brain)
  - How fast can it think?
  - How many things can it do at once?
- Chassis
  - Axis of rotation
  - Weight distribution & center of mass

Event-Based Programming

- Reactive Processing
- Some stimuli have higher priority over others
- Planning?
- Memory?
- Randomness?
- Modularization?

Brainstorm Strategies

- What wins competitions in past?
- What are new, possible competitive advantages?

Competition Best Practices

- Test Early & Often
  - Simulate on your own with dead AI
  - Simulate with live AI
- Analyze issues, plan small changes
  - Prefer fast, numerous, minor change cycles over gigantic do-overs
- Change Management
  - Test everything after each change
    - Ot just the one new expected behavior
    - Easier if one has a test script of all possible issues
  - Save older versions

So, now what?

- Let's Test!