Today's Learning Objectives

- After today's class, students will be able to:
  - Use the Train Simulator as an additional tool to troubleshoot MATLAB code outside of lab.
  - Compile needed information for the Project Documentation Package.
Problem Solving Lab Overview

- Students should have read the Problem Solving Lab Description Document prior to Lab 8A.

- With the problem and specifications defined, we familiarized ourselves with the train system started developing design concepts last week.

- Today, we will start formulating a design solution, as shown on the following slide.
Problem Solving Process

ANALYZE

COMPARÉ

RESEARCH

DESIGN DECISION
Helpful Hints

- Work as a team.
- Follow all instructions carefully and check off each step.
- Use the provided excel worksheet to track answers.
- Remember the importance of folders and files being in the proper path for MATLAB to access.
- If you feel that your setup is incorrect or something is not working properly, please notify your instructional staff.
Today’s Lab

- Make sure all team members are familiar with how to “attach” the desk computer to the Arduino.

- Develop code and review logic with all members in group.

- Include comments and organize code to help others understand your approach and troubleshoot errors.

- If time permits, start working on bonus situations.
Train System Components

Here are the parts you will use:

- Approach Sensor
- Train / Track
- Arduino
- Lights (2 LEDs)
- Gate (servo motor)
- Departure Sensor
Lab 8C- Problem Solving Lab

- Today is the second of a 3 lab series. A combined project notebook will be due at the end.

- You will finalize your coding (including any bonus) and perform final testing next week.

- In Lab 8C, you will have a maximum of 40 minutes to work prior to testing.