Activity 4

Integrating the Software and Hardware

Learning Objective

- different hardware and software high and low level requirements
- thinking critically about the project
- link software to the hardware successfully
- apply computing knowledge to control the car using software.

Skills to be Learned

- **Into level of programming**
- **Software and hardware integration**

Introduction to Hardware and Software Requirements

The goal:

- **an introduction to the hardware and software requirements**
- **teach them the allocation of system requirements to software/hardware subsystems.**
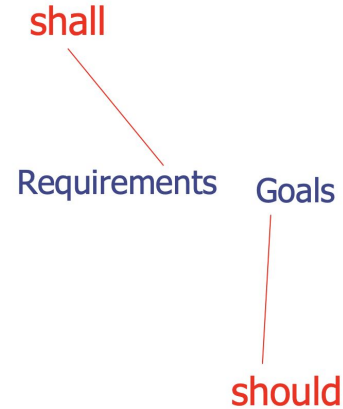
Engineering Activity

Have the students decompose the higher-level requirements and assign them to lower-level functions by mapping each general component of the car to the software and hardware subsystems.

Requipments

- **Requirements describe the necessary functions and features of the system we are to conceive, design, implement and operate.**

Technical Requirements

shall

Requirements   Goals

should

Question to Ask the Students

What are the higher-level requirements for driving a Donkey Car?

- **Able to drive**
- **Move around a circuit**
- **Follow the path on the ground**
- **Avoid obstacles**
- **What else?**

Testing

- Make the students test the integration by running the software and observing the functioning of the Donkey Car.
- A successful hardware implementation should follow the software instructions.