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Arduino Plowing Vehicle (APV)

Introduction

What we are building

- Smart Snow Plow
- Users provide a path for APV to follow
- APV “plows” that path by removing obstacles

Why we are building it

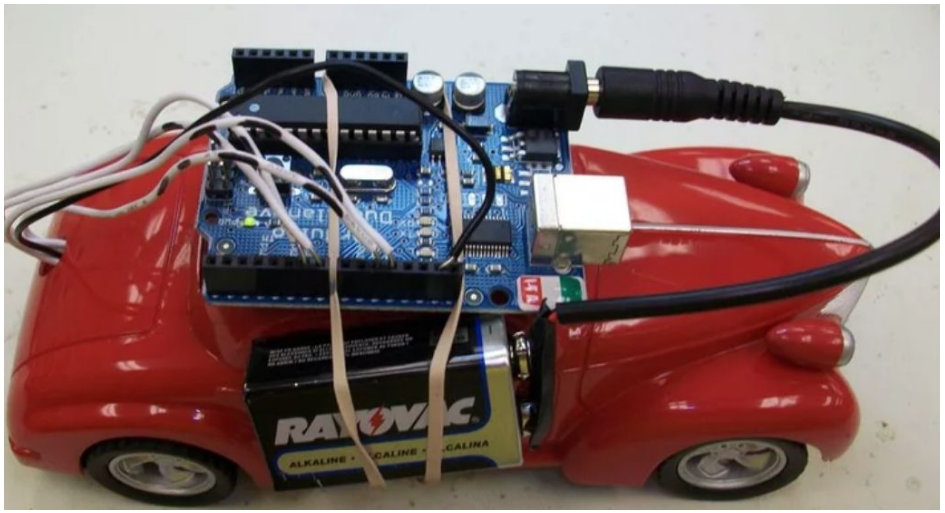
- Proof-of-concept of large-scale automated snow plow

Goals

Our car will look similar to this vehicle - an arduino connected to a motor driver and battery.

Ours will also have a plow in front!

The car should neatly clear debris in a given area.



Technical Details

Hardware

- Design and build a functioning car
  - We may tear apart an existing RC car, or build our own platform from scratch
- Add sensors as necessary
  - Ultrasonic sensor
  - Light sensor

Software

- Car Path Creation
  - Not spreading snow
  - Clumping snow together
- Processing GUI to describe area to clear

Hardware Components

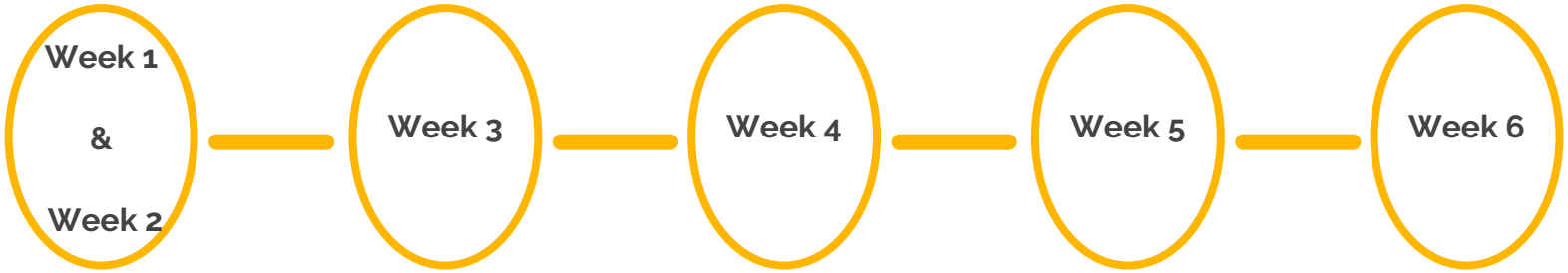
What we need:

- RC Car base
  - Arduino Uno
  - Chassis
  - Motors
  - Motor Driver
  - “Plow”
  - Batteries
- Ultrasonic Sensors

Anticipated Difficulties

- Communicating the specific area from Processing
- Clearing debris and not causing another mess
- Precise car movements

Timeline



Build Car	Car Behavior	Car Additions	Car Movement	Final Touches
Get Materials	Define car's motion	"Snow" Detection	Smart movement of clearing snow.	Potential edge detection
Put car together	Define specific environment	Obstacle detection		Specific debris detection