Garde\textit{Net}  
TEAM 16  
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The Team

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The Problem

- Watering is labor intensive
- Difficulty getting daily volunteer help
- Candidate for automation
Our Solution

- For home gardens to small industrial gardens
- Using 3G cell service
- Specifically for Caledonia Community Garden
Scope Changes

- Because of meeting with Kyle of EDF
- Add: Wireless communication to valves
- Remove: LCD interface

Diagram:

- GardeNet Website
- Exosite
- Cell Tower
- Arduino Nano
- Flow Sensor
- Solenoid Valve
- Arduino Leonardo
- Flow Sensor
- Solenoid Valve
Communication Scheme

- Wireless communication done with small radios
- Simple, very low cost, sufficient range


https://rlogiacco.files.wordpress.com/2014/02/rf24_bb.png
Component Decisions

- Cloud server = Exosite
- 3G modem = NimbleLink
- Onsite controller = Arduino Leonardo
- Wireless comm = nRF24L01+ radio
- Valve controller = Arduino Nano
Remaining Obstacles

- Proving that it works
  - 3G connectivity to Exosite
  - Networking with the radios

- Other critical functions
  - Website-Exosite interface
  - Valve and flow meters analog control circuits