GardeNet

TEAM 16

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The Team

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Overview

- The Project
- Design Decisions
- Project Highlights
- Current Status
The Project

The Problem

- Watering is a labor intensive venture
- Community gardens often have difficulties to get consistent volunteer help

Our Solution

- Automate the watering process via
  - 3G cellular network
  - Internet-of-Things (IoT)
- Our main client is Caledonia Community Garden

https://lintvwotv.files.wordpress.com/2014/06/maranda-caledonia-community-garden.jpg?w=650
Our Design

GardeNet System Architecture

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Current Status

4/11/2016
5/11
Hardware & Mesh Network

- Controlling valves
- Reading flow rates
- Communicating with the gateway
- Stability and PCB design
Gateway & Arduino Shields

- Activated the 3G modem
- Added another shield
- Currently integrating 3G and radio communications
Server & Database

- Python scripts
- Hosted on a Raspberry Pi
- Interface & utilities
- Database

GardeNet Server Architecture
Website (gardenet.ddns.net)

- Schedules and switches
- Dynamically add zones and events
- Password protection
- “Live” on Raspberry Pi
- Dynamic DNS
- Future: Administrator View and Guest View
Project Highlights

Challenges
- Exosite vs. GardeNet server
- Budget & time constraints

Opportunities
- Advice from experts
- Most important design norm: Trust
Current Status

- **Hardware & Mesh Network**  ✔️
- **Gateway**
  - Mesh network, 3G cell connection, internal timer ✔️
  - Communication with server, scheduling algorithm ❌
- **Server & Database**
  - Utilities and database ✔️
  - Interfaces, process weather information ❌
- **Website**
  - Basic UI and functionalities ✔️
  - Dynamic zone size, message passing ❌
Questions?