ACAMP

Final Report Outline

# Introduction

## Introduce Team

### Stark and Wayland (CE), Danny and Justin (EE)

## Purpose

### Why hydroponics (explanation of water use)

### Why automation is important

## Visual Overview

### Probably different views of our Solidworks drawings

# Research completed

## Hydroponics

## Sensors

## Actuators

# Design

## Key features

### Structure and physical design

### Light and water/air pump cycles automated

### Temperature/humidity sensors and controls

### Solenoid valve automation for pH and nutrient release

### Plant height measurement using webcam & light height adjustment

### Web monitoring and control

## Components

### Physical

#### Which parts we’ve used

#### Which parts we intend on using

#### Components we haven’t decided on yet

#### Why we picked these parts

### Sensors

#### Which parts we’ve used

#### Which parts we intend on using

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### Actuators

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#### Why we picked these parts

## Block Diagrams

### Top level block diagram

### Subsystem block diagram

## Software

### Flow chart for overall system

### Flow chart for each subsystem

## Division of Labor

### Going to list who has done what so far and what they plan to do next quarter

# Goals from Winter Quarter

## Visual of Gantt Chart for this quarter

# Tests conducted

## Videos

### Water/air pump automation

### pH in water tests

### Temperature/humidity sensors

## Details of how we tested our sensors

### Water pump – discuss how we used our timers

### pH – discuss how we altered the pH of the water and observed the change

### Temp/Hum – talk about use of Raspberry Pi and how the sensor measures the environment

# Progress

## Gantt Chart

## Which goals we’ve finished

### pH, TDS, and Temp/Humidity sensors

### Water/air pump

### Physical structure

### Atmega2560/Raspberry Pi integration

## Which goals we’re currently working on

### Solenoid release valves

### Power supply setup

## Completion Percentage

## Budget Progress

### Expenditures so far

### Expenditures remaining

### Revised estimated cost

# Accomplishments

## Milestones from Gantt

### Designs completed

### Sensors completed

### Actuators completed

## Things we are proud of

### First time pumps worked

### Serial communication

### Completion of sensors

### Getting DHT22 to work despite difficulties

# Problems

## Plant height detection system

### Laser system wasn’t going to work with the time allotted

### Switched to webcam

### Need to figure out image processing

## Others?

# Conclusion

## Plan for next quarter

### Individualized plans for next quarter

### Things we’d like to add if time permits