- **Web Monitoring for Greenhouse Environment**
- Date: May 3, 2013
- Members: Tuyen Le & Patrick Maina
- Faculty Advisor: Professor Paul Lin & Hal Broberg
- Prof. Paul I. Lin, Instructor of ECET 491 Senior Design II
- Department of Computer, Electrical, and Technology
- College of Engineering, Technology, and Computer Science
- Indiana University-Purdue University Fort Wayne, Indiana

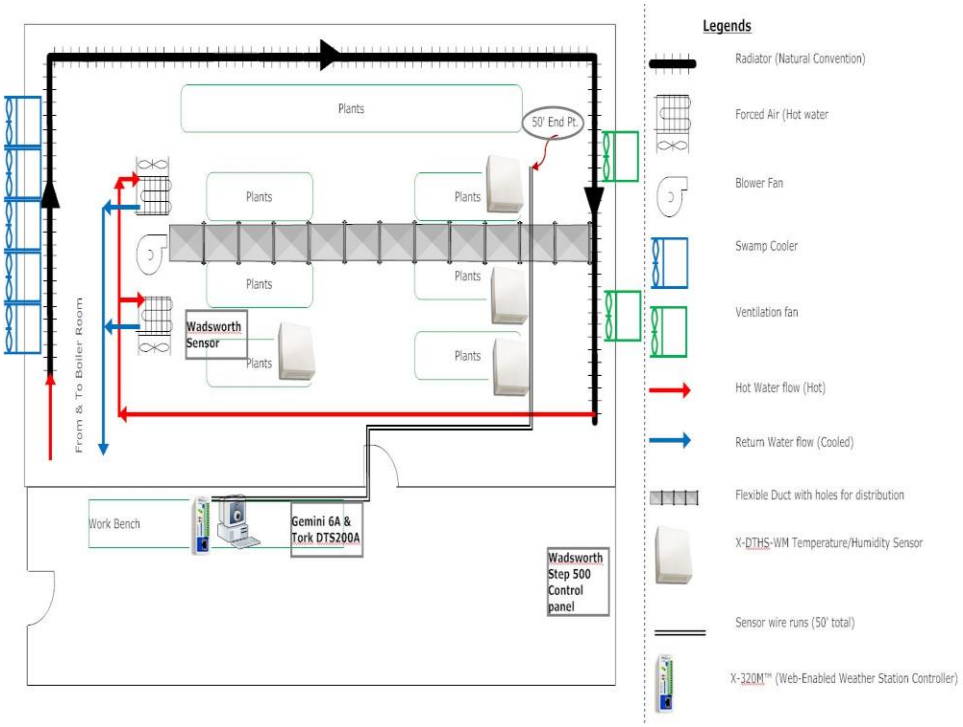
Project outline

- Introduction
- Problem Statement/Solution
- System Design
- Hardware Interface
- Network
- Testing
- Lessons Learned
- Conclusion

Introduction

Background

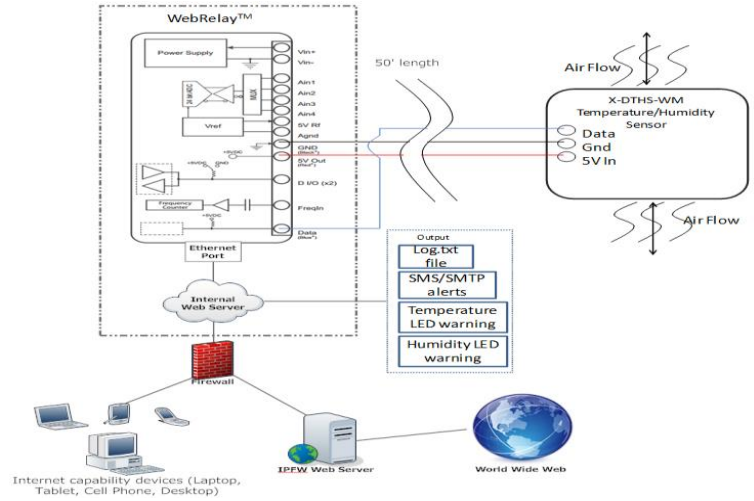
- Combining our Senior Design one
- Prof Lin
- Ipfw Biology Department Requirements



Problem Statement/ Solution

- Worker
- Heat management issues
- Misting Frequency
- Accuracy in Settings

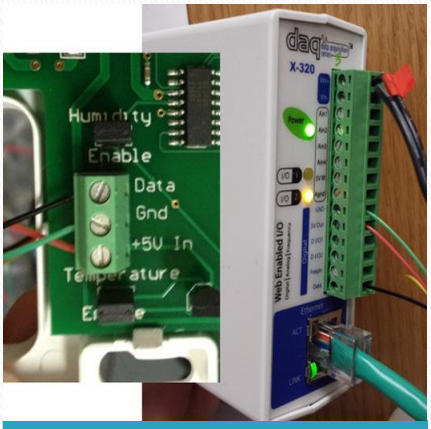
System Design



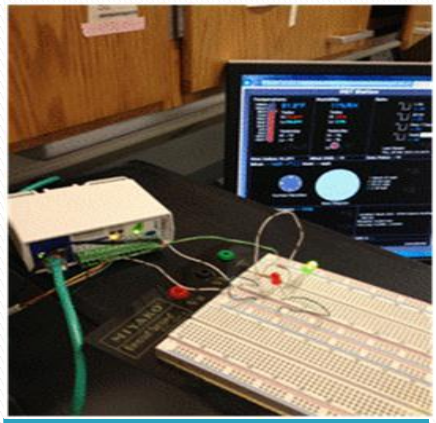
System Requirement

- Password protected login, setup and HTML status page
- Monitoring temperature and humidity including remotely
- Email alerts based on user define
- Built-in web server
- SMS alert
- 512kB storage for logging memory.
- Unlimited data log storage through web services
- Statistical Analysis of the data

Hardware Interface

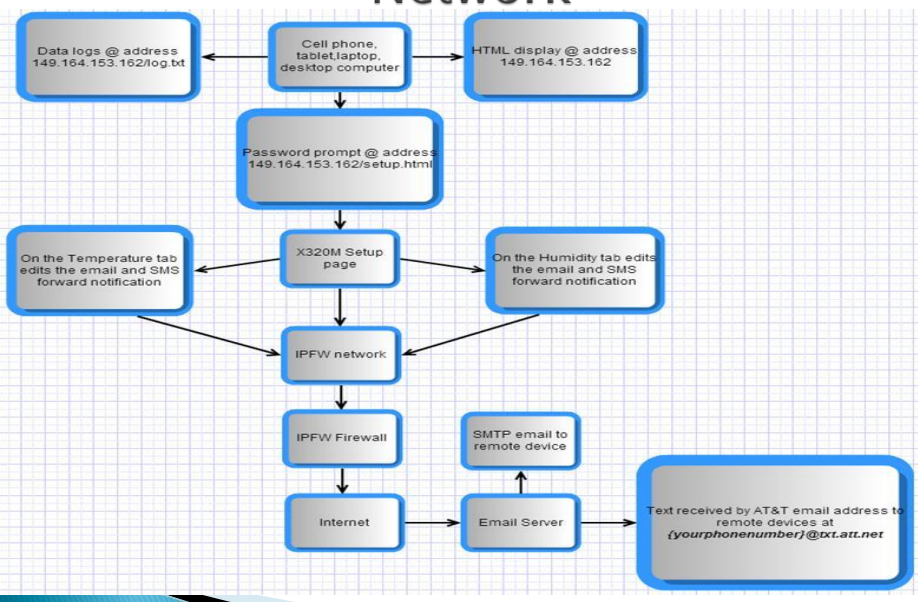


115v power supply
22 Awg wires



Verification using Led's

Network



Testing

- VIDEO

- DEMO

Cost

ITEM	QUANTITY	PRICE(approx. in dollars)($)	TOTALS IN DOLLARS ($)
X-320 M	1	400.00 each	400.00
Temperature and Humidity Wall mounted sensor	1	93 each	93.00
Led's	6	0.99 each	5.94
22 Awg wire	50 feet	9.00 for 50 feet	9
Total			507.94

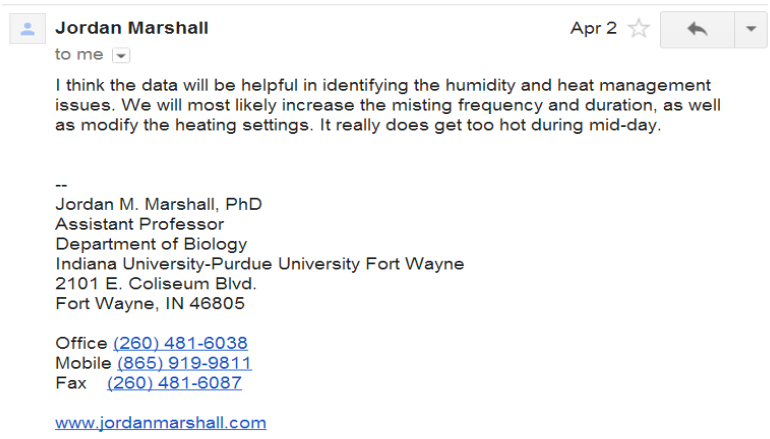
Software Used

Item	Quantity	Price	Total
Microsoft Project 2010	1	0	0
SmartDraw 2010	1	0	0
Microsoft Office 2010	1	0	0

Lesson learned

- Bureaucracy-IPFW IT department
- Time Management
  - New idea and research on web servers
  - School, work, real life
  - Scheduling meeting etc etc
- Video editing
- Installing and moving sensor,
- Flexibility: Difficult to work with different peoples schedules.
- Meeting difficult people- Communication issues
- Statistical Analysis

Conclusion



Jordan Marshall Apr 2

to me

I think the data will be helpful in identifying the humidity and heat management issues. We will most likely increase the misting frequency and duration, as well as modify the heating settings. It really does get too hot during mid-day.

--
Jordan M. Marshall, PhD
Assistant Professor
Department of Biology
Indiana University-Purdue University Fort Wayne
2101 E. Coliseum Blvd.
Fort Wayne, IN 46805

Office (260) 481-6038
Mobile (865) 919-9811
Fax (260) 481-6087

www.jordanmarshall.com

Future Developments

- Integrate the various control systems and automize them .
- Install hydroponic system
- Use our progress report and presentation to ask for Green house Budget

Questions…..