## Project Objective

To connect all sensors and actuators to the internet for the farmers to control and monitor the needed level of parameters essential for the crops' growth.

## Specific Objectives

* To create a prototype that will determine the optimal growing environment conditions for high value crops.
* To design a controlled prototype that will maintain optimal growing environment condition of high value crops.
* To develop an application that will provide real-time monitoring of the controlled environment system.

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| **Equipment** | **Specifications** |
| Server | * **CPU :** Intel Xeon E3-1220 V5 (3.0GHZ) Quad Core Processor * **Motherboard :** Intel Server Board S1200SPL/R * **Memory :** Kingston 1 x 8GB DDR4 ECC 2133MHZ (KVR21E15D8/8) RAM * **Storage :** Seagate 1TB CONS ES (ST1000NM0033) 7200RPM Enterprise Hard Drive * **Power Supply :**  Silverstone Strider Essentials 400WATTS 80+ * **Casing :**  Silverstone Precision Series PS12 |
| Router | * **Network Standards:**   + IEEE 802.3   + IEEE 802.3u   + IEEE 802.11b   + IEEE 802.11a   + IEEE 802.11g   + IEEE 802.11n * **Radio Frequency Bands:** 2.4GHz * **Ports:** 1x 10/100 WAN, 4x 10/100 LAN * **LEDs:** Power, WLAN, Ethernet, Internet * **Buttons:** Reset Button, Wireless Protected Setup * **Operating Temperature:** 32 to 104°F (0 to 40°C) |
| Switch | * 16 10/100Mbps Auto-Negotiation RJ45 ports, Supports Auto MDI / MDIX * Green Ethernet technology saves the power up to 80% * IEEE 802.3x flow control provides reliable data transfer * Plastic case, desktop or wall-mounting design * Plug and play, no configuration required * 1610/100Mbps RJ45 Ports AUTO Negotiation/AUTO MDI/MDIX |
| Wireless Router | * Standards: IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, * IEEE 802.3, IEEE 802.3u, CSMA / CA, CSMA / CD * TCP / IP, DHCP, ICMP, NAT, PPPoE * LAN port: 4 10 / 100M adaptive RJ45 port {Auto MDI / MDIX} * WAN port: 1 10 / 100M adaptive RJ45 port {Auto MDI / MDIX} * Transfer rate: Up to 300Mbps * Antenna type: 3 fixed omnidirectional antenna |
| Access Point | * EAP Controller Software enables administrators to easily manage hundreds of EAPs * Supports passive PoE for convenient installation up to 100meters * Ceiling mounting design with chassis make it easy to deploy on a wall or ceiling * Captive portal provides one convenient method of authentication for Wi-Fi guests * Multi-SSID divides multiple wireless networks for different users * Enterprise class Wi-Fi security help to decrease network security threats * Supports management vlan for an enhanced network |
| Laptop | * Processor: Intel® Celeron® Dual-Core N3350 Processor * Operating System: Windows 10 Home * Memory: Onboard Memory 2 GB, up to 4 GB SDRAM * Display: LED backlit HD with 45% NTSC 11.6" * Graphic: Integrated Intel HD Graphics |
| Cellphones | * 6-inch HD IPS display, 245 PPI * 1.3GHz quad-core CPU |
| Personal Computer | * OS: Ubuntu Linux, no pre-installed Windows * Processor: AMD A4 6300 Dual Core 3.7ghz to 3.9ghz * Motherboard: Fm2 motherboard * Memory: 2GB DDR3 memory * Hard Drive : 1 TB SATA hard drive * Graphics: Built-in Graphics Radeon HD8370D 760Mhz * Body: Micro-ATX form factor * Power supply: 650W power |

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| **Equipment** | **Quantity** | **Price in Php** | **Total Price in Php** |
| Server | 5 | 41,499 | 207,495 |
| Router | 8 | 10,000 | 80,000 |
| Switch | 7 | 550 | 8,000 |
| Wireless Router | 1 | 2,125 | 2,125 |
| Access Point | 1 | 3,000 | 3,000 |
| Laptop | 1 | 10,000 | 10,000 |
| Cellphones | 1 | 3,500 | 3,500 |
| Personal Computer | 16 | 15,000 | 240,000 |
| **Total** | | | **554,120** |