ECE Capstone program  
Spring 2017  
Summary Project info

Please provide the following information to be shared with on capstone information exchange platform:

1. **Project number:**
   SP17-14

2. **Project title (as will appear on the poster):**
   Herbert: An Automated Modular Indoor Herb Farm

3. **Team members:**
   Darshan Nandha  
   Joshua Chan  
   Rino Diamante  
   Ryan Anthony Gatchalian  
   Ryan Mendoza

4. **Adviser(s) name(s):**
   Dr. Michael Caggiano

5. **Up to 10 keywords that will help to classify the project:**
   Botany, Automation, Biology, Agriculture, Raspberry Pi

6. **Project abstract (up to 200 words) to be shared with judges:**

   As the world population increases and distances itself from vegetation’s origin, the problem of obtaining vegetation arises. Our proposed solution is an indoor modular grid of automated identical farming cells with sub-systems that maintain various aspects of the cell. Drip irrigation controls plant hydration and monitored utilizing data collected from moisture sensors. Decreasing the amount of interaction the user has with the irrigation process, the consumer needs to ensure that they fill the water. The lighting system will provide the plant with the optimal light spectrum required for the plant’s life cycle by varying the spectrum for different stages and adjusting light intensity to simulate daylight. The controller and dashboard system will record the sensor data during all stages of the plant’s lifetime. This will feed back into the controller, allowing it to adjust the system’s behavior during different stages of the plant’s life. Moreover, the dashboard system will be able to access the sensor data allowing for chart and report generation, for system analysis over time and real-time progress tracking. We expect the vegetation to grow at a much better rate with this system because we will be providing a consistent optimal environment that a human may not be able to provide.