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| Interviewer Joshua Williams | Date 5/21/18 |
| Project Title Organic Garden Automation | Project Number 0005 |
| Project Description Organic garden has a 2000 gallon fish pond that contains tilapia and goldfish. The fish are fed externally and water is pumped into 4 raised gravel beds to provide oxygen and bacteria. The system must be monitored and operated electronically. | |
| User BackgroundName Dr. Tresser Role Organic Garden Manager | |
| Existing Solutions Fish are fed externally, water is pumped from ponds to 4 raised gravel beds at the top of every hour during the day for 15 minutes, water is added manually when level gets low, water temperature is checked sporadically | |
| Use Case 1  * Pump is run constantly * Valve is opened for one gravel bed at top of hour and runs for 15 min, then next valve for 15 min, etc, repeated every hour, not running at night * System must open and close valves * Valves provided are Orbit automatic in-line valves | |
| Use Case 2  * Sensor that monitors dissolved oxygen 24/7 * Low level of oxygen triggers a spray that causes surface of water to be broken, adding more oxygen to water * Sprays must be turned off when oxygen level is sufficient * Tweet notifying that the sprays were turned on or off | |
| Use Case 3  * Sensor measuring water level 24/7 * Turning on pump to fill the tank when water is too low * Turning off pump when water level is sufficient * Tweet notifying that the pump was turned on or off | |
| Problem Observed Current systems are manual, they must be replaced by automatic sensors that perform the same functions | |
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| Takeaways Solution is completely software related with an installation of a few sensors | |
| Opportunities Introducing a raspberry pi with sensors would be able to control the systems necessary with appropriate software | |
| Also Seen Must have knowledge of a raspberry pi and how to integrate sensors | |