PSU High School Innovation Challenge 2016 Innovation Challenge

Apr 9th, 12:30 PM - 2:30 PM

LARC: Local Agricultural Resource Conservation

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Our project conserves water by growing crops on rooftops in the city in a greenhouse and only watering crops when they need to be watered. Our project is a smart watering system that relies on a sensor input from moisture sensors in the soil. This information is then broadcasted to a computer (in this case, an Arduino circuit board) that controls the flow of water to that row of plants. This system is scalable.

Our Solution

Our project conserves water by growing crops on rooftops in the city in a greenhouse and only watering crops when they need to be watered. Our project is a smart watering system that relies on a sensor input from moisture sensors in the soil. This information is then broadcasted to a computer (in this case, an Arduino circuit board) that controls the flow of water to that row of plants. This system is scalable.

CONCLUSIONS

By watering plants only as they need it, we cut down the amount of water that gets wasted using timers. Plants don’t run on a schedule, they need based on how much they need and when they need it. By using moisture sensors in the soil adjacent to the roots, we can accurately disclose when the crop is running low on water.

DESCRIPTION

Our watering system uses an Arduino Uno with breadboard circuitry connected to a moisture sensor and pump to distribute water efficiently based on the water reading of the soil. The process is as automated as possible, to save both water and energy when soil is running low on moisture.