



CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

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Project Title TEA Pot	
Abstract Objectives/Goals Many people love to have plants growing in their home. Whether it is for increased oxygen in your home, therapeutic purposes, or just for decoration, there are many uses for plants. However, some people just don't have the time to take care of their plants. If you are busy all day, or are going on vacation for a couple of days, who is going to take care of your plant? To try and solve this problem, we have used three different solutions, each getting progressively better. Methods/Materials Arduino Uno, MIT App Inventor 2 (used to create our app), Arduino IDE (used to program our plant pot), Bluetooth Module, CdS Photoresistor, Temperature sensor, Water level sensor, Jumper wires, Android smartphone, Solar shield, Solar panel, 9 volt battery, Battery cap, Breadboard Results Our first solution was a Bluetooth based plant pot. All this solution did was send data from the sensors connected to the Arduino over to the MIT App Inventor 2 app and watered the plant every two days. Our second solution made the settings customizable. This way YOU get to choose how often to water your plant. Our third solution was more eco-friendly than the previous solutions. This solution was the same as solution 2, but is powered by a solar panel rather than batteries or a laptop. Conclusions/Discussion Although all of the solutions solved the problem, the third was the best. However, the data that was sent over from the Arduino to the app was in voltage and not in common units of measurement. To fix this, we could find an algorithm to convert the input into units of measurements that are commonly used. Also, the Arduino was sending information from the sensors at random intervals to the app. We think this is caused by the timers running the customizability in our app.	
Summary Statement I created a plant pot that automatically waters your plant for you and sends information about your plant to an app on your phone.	
Help Received I created the app myself using MIT App Inventor 2, but received help with the Arduino, 3D printing, and solar panel.	