# Automatic Aquaponics

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Aquaponics is a food production system that combines the growing of plants with raising fish. The purpose of my Automatic Aquaponics engineering project is to provide a way for people to grow fresh and healthy foods, while saving as much water, time and energy as possible. The best way to accomplish this is by automating aquaponics. In this case, automating means to convert to automatic operations, using electronic devices that take the place of human labor once the system has been built and set up by a person. I was able to automate an aquaponics system that I built by using an Arduino microcontroller, Bluetooth module, temperature sensor, water level sensor, servos, relays, and a real time clock. I connected an Arduino microcontroller to my computer and wrote functions, using the Arduino IDE (Integrated Development Environment) software program. Then, I built a garden bed from the top portion of a plastic barrel and filled the top with lava rocks to hold the plant roots in place, hanging my board of electronics on the side. By automating the system, my electronics controlled the pump and drain so the plants get enough recirculated water to grow, but not waste it. My Automatic Aquaponics system worked effectively. Now, more people with food insecurities may grow fresh edible plants, no matter the limited space, water, and/or soil quality. Backyard gardeners and commercial growers would also enjoy and benefit from this type of plant growing. Works consulted Arduino boards. (n.d.). Arduino. https://www.arduino.cc/en/hardware Go Green Aquaponics. (2022, May 31). What is Aquaponics? https:// gogreenaquaponics.com/blogs/news/what-is-aquaponics-blog?_pos=3&_sid=2180edb1c&_ss=r

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