

Team 11

Project Title: Smart Water Shutoff

Date: 10/10/2021

Members:

- Alex Murray– Embedded programming
- Tyler Denning - Motors and Valves
- Natalia Almeida - System Sensors
- John King - Mobile application development
- Augusto Savaris - Machine learning
- Andrew Fehr - Electronic devices and circuits
- Kangcheng Xu - Motors and Valves

What we've accomplished in the past week/what we've been researching

- Alex Murray– Worked on team plan
- Tyler Denning - Demonstrate that the valve works as advertised, reverse engineer internal wiring.
- Natalia Almeida - Got one of the vibration sensors to detect opening and closing of water
- John King - Help determine roles of parts of the application, as well as more work on developing classes and other software artifacts.
- Augusto Savaris - worked on team plan, participated in testing the vibration sensor during a simulated leak scenario, and started testing a clustering algorithm to detect the leak
- Andrew Fehr - Worked on team plan assignment, Conducted additional water flow testing with vibration sensors
- Kangcheng Xu - work on vibration sensors

What we're planning to do in the coming week

- Alex Murray– Set up meeting with professor to review software design
- Tyler Denning - Build circuit on bread board that can control the motor.
- Natalia Almeida - Do more testing with the vibration sensor, and gather data for at least 20 minutes to give to Augusto to use for Machine learning. Also research ways to sense the flow of water after the water turns on

- John King - Work on the main screen, especially researching line graphs in Android Studio.
- Augusto Savaris - finish initial testings with clustering algorithm to determine if there is any feasibility in this approach
- Andrew Fehr - Continue testing different sensors and trying to identify patterns in the data that can be used
- Kangcheng Xu - try to use two microphone sensors to detect the water flow speed in plumb.

Issues we had in the previous week

- Alex Murray– Been interviewing for jobs and had less time. This next week should be the last week for that which means I will again have more time for this project.
- Tyler Denning - Finding time to work on senior design with midterms
- Natalia Almeida - One of the vibration sensors did not give good enough data, and the other one only shows good output on the on and off of the faucet and not during the one.
- John King - Had to reinstall multiple software tools because the versions I had were incompatible with the most recent versions.
- Augusto Savaris - could not complete initial tests with clustering algorithm due to lack of time
- Andrew Fehr - Struggling to determine if the vibration sensors data is usable for our purpose or not
- Kangcheng Xu - vibration sensors can not detect water leak, and we still did not understand the mean of the data it gives us.