





**WATER SAVER**



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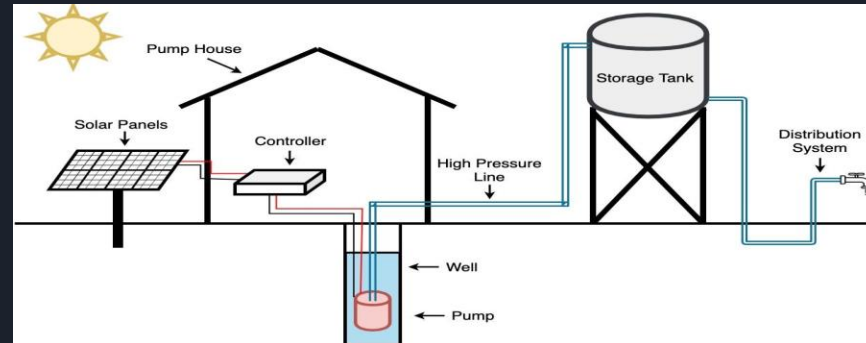
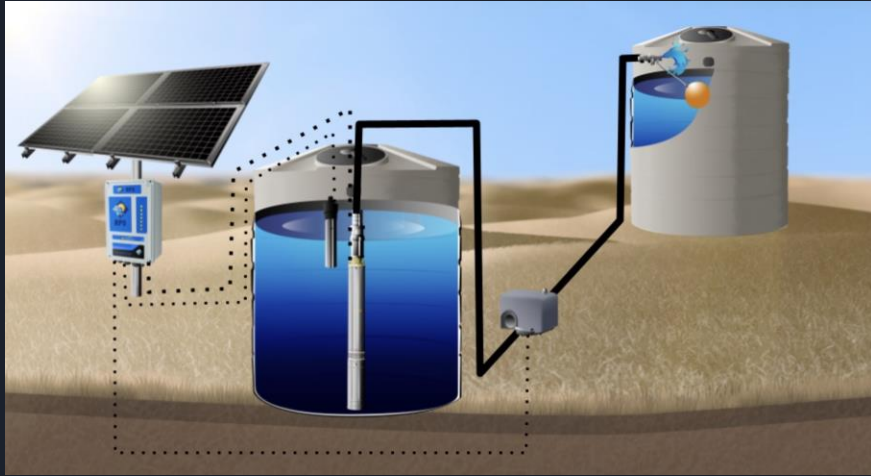
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# Overview



# Engineering Requirements



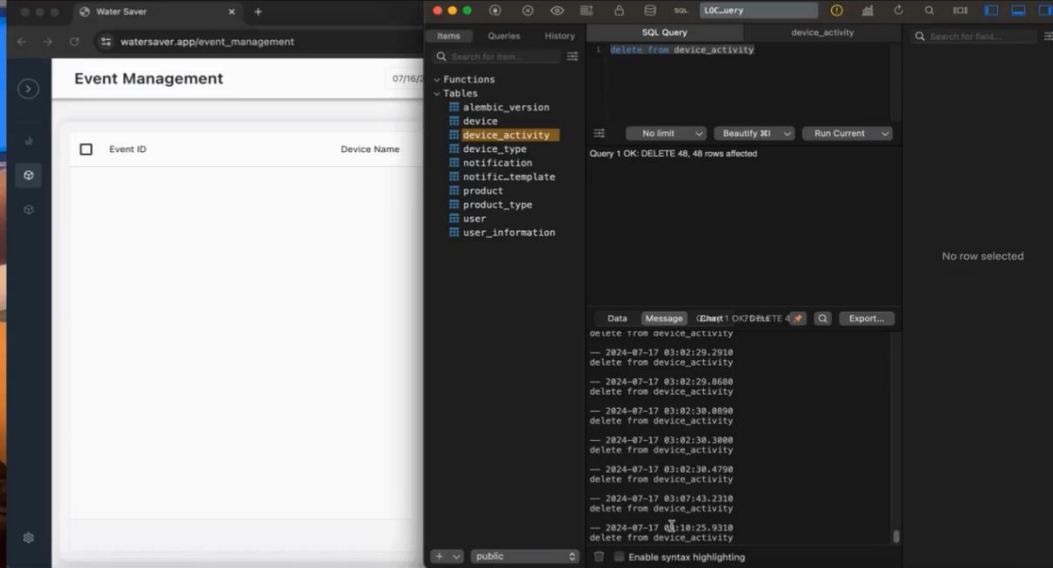
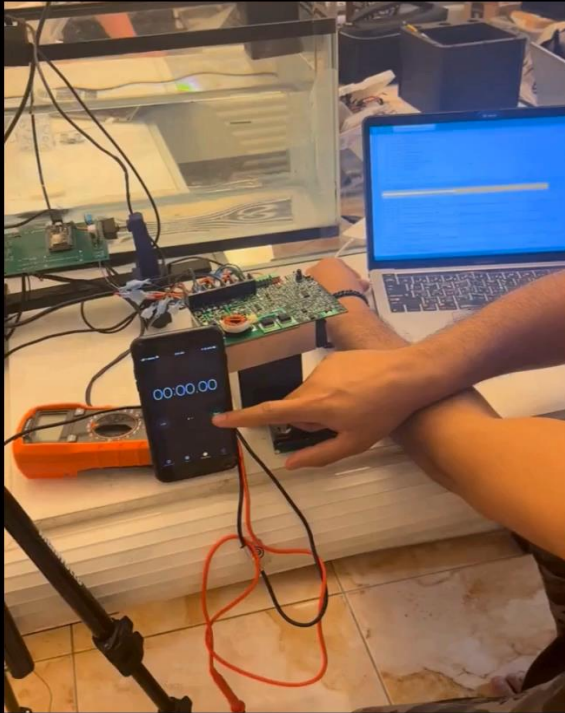
Specification	Expected Result
Water Saver System is running, and all sensor data being reported to the platform within less than 10 seconds.	Water Saver Platform reports the data with-in 10 seconds.
Water Saver System is triggered when the Rain Sensor value is greater than 2000 ohms and system begins storing water with-in 15 seconds	Water Saver System should trigger to begin storage process when 2000ohms or greater.
Spec 3: Water Saver System stops filling water to storage tank when distance sensor detects range of 6-7cm from top of tank.	Water Saver rain sensors is triggered when simulating rain to above 2000ohm, and storage tank is being filled to distance of 2.5-3in (6-7cm) from the top and stopped to avoid overflow.



# Overall Functionality

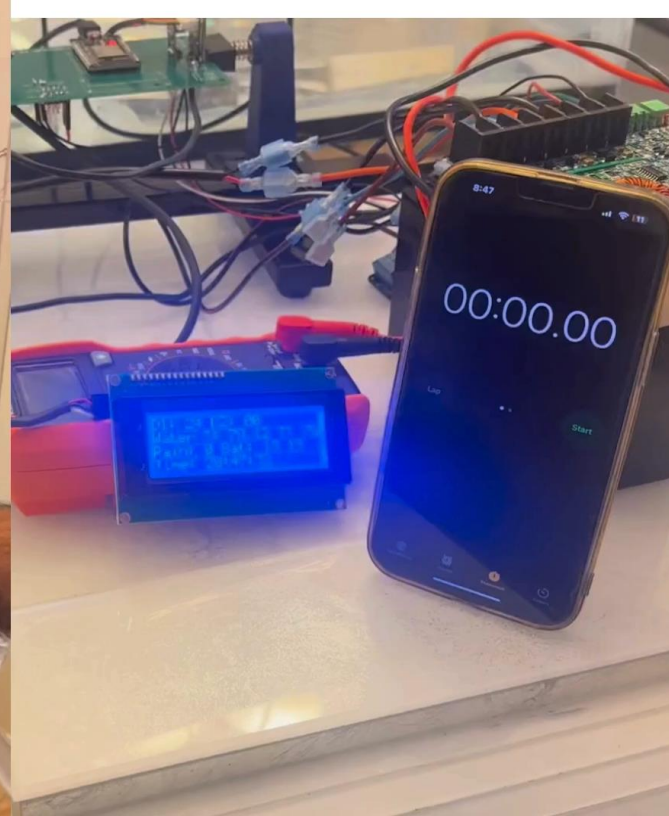
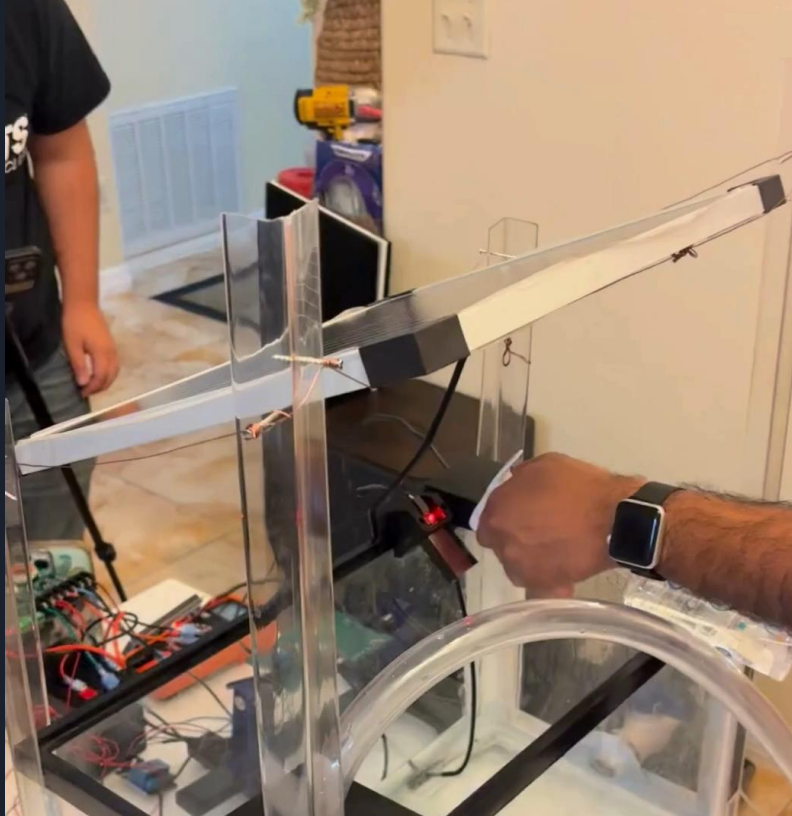


Spec. 1: Water Saver System is running, and all sensor data being reported to the platform within less than 10 seconds.





Spec. 2: Water Saver System is running, and all rain sensor is triggered when the value is greater than 2000 ohms to begin storage process.



Spec. 3: Water Saver System stops filling water to storage tank when distance sensor detects range of 6-7cm from top of tank.





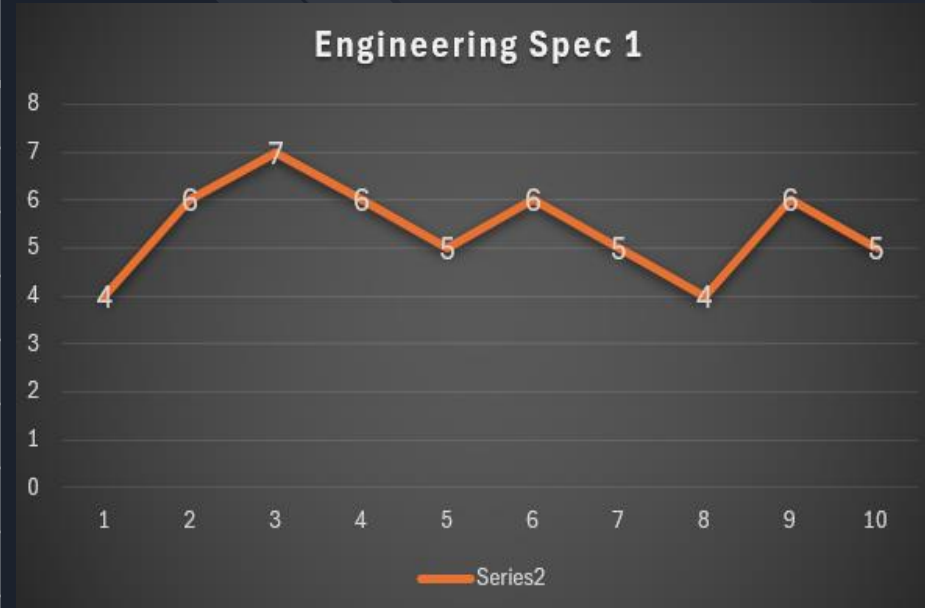


# Engineering Spec 1 - Demo Results

Water Saver System is running, and all sensor data being reported to the platform within less than 10 seconds.

Test Run	Starting Event Count	Ending Event Count	Time (s)
1	0	4	10
2	0	6	10
3	0	7	10
4	0	6	10
5	0	5	10
6	0	6	10
7	0	5	10
8	0	4	10
9	0	6	10
10	0	5	10

Ending Event Count VS Test Run

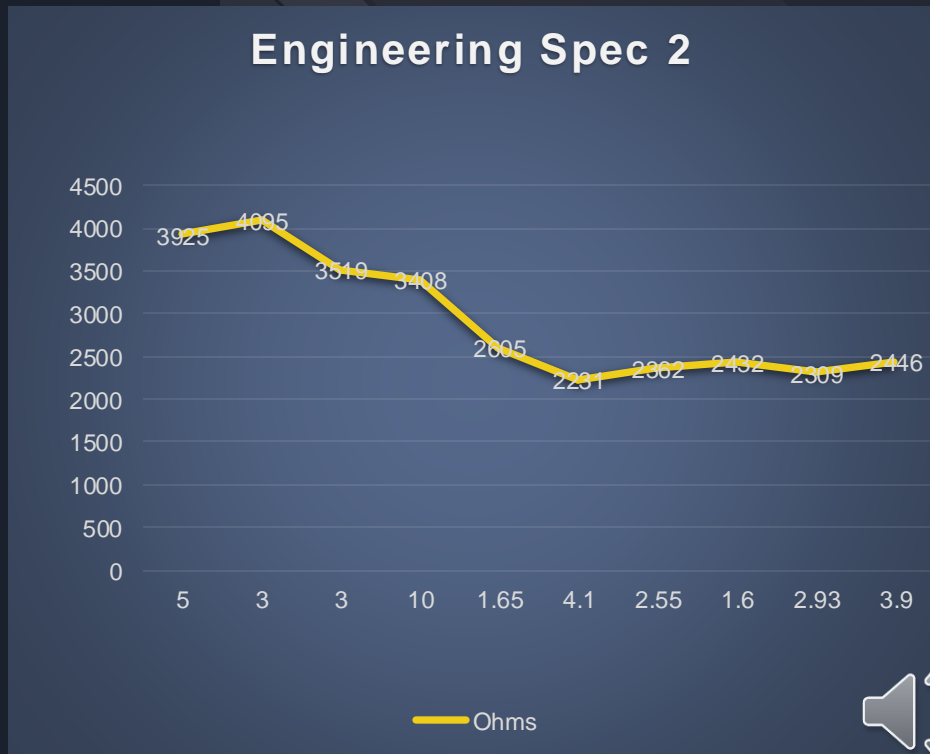




# Engineering Spec 2 - Demo Results

Water Saver System is triggered when the Rain Sensor value is greater than 2000 ohms and system begins storing water with-in 15 seconds

Test Run	Ohms	Time (s)
1	3925	5
2	4095	3
3	3519	3
4	3408	10
5	2605	1.65
6	2231	4.1
7	2362	2.55
8	2432	1.6
9	2309	2.93
10	2446	3.9

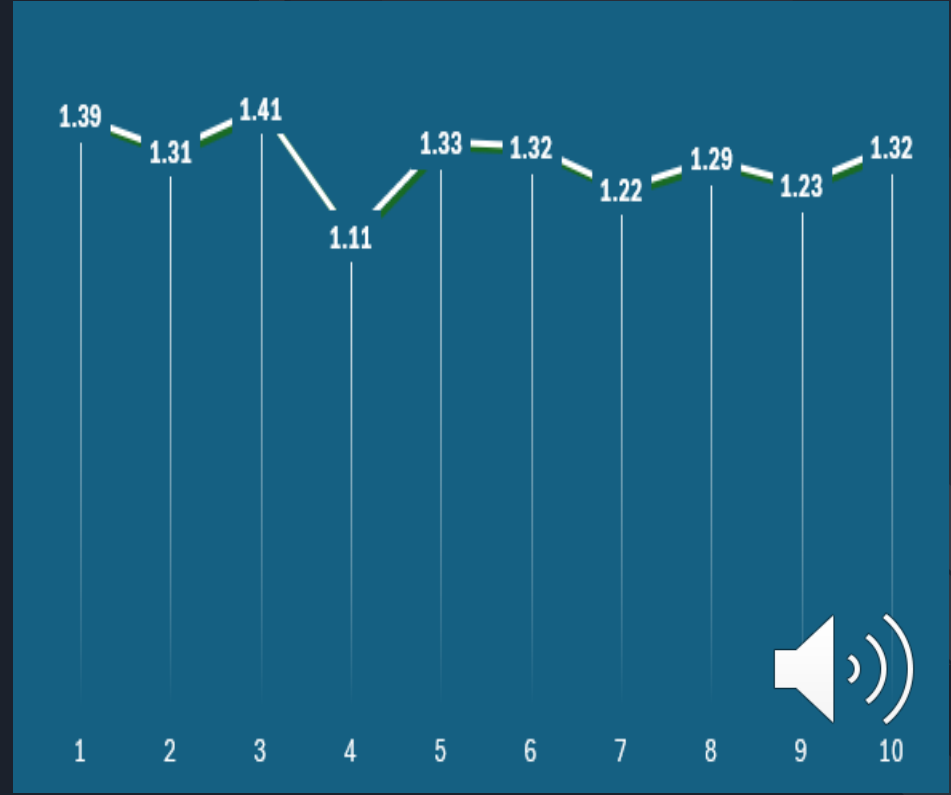




# Engineering Spec 3 - Demo Results

Water Saver System stops filling water to storage tank when distance sensor detects range of 6-7cm from top of tank.

Test Run	Starting Distance (cm)	Ending Distance (cm)	Time (min)
1	24	6.3	1.39
2	24	6.2	1.31
3	24	6.0	1.41
4	24	6.1	1.11
5	24	6.1	1.33
6	24	6.4	1.32
7	24	6.2	1.22
8	24	6.1	1.29
9	24	6.0	1.23
10	24	6.2	1.32



# Moving Forward

Optimize sensor connections

Additional time for optimizing boost converter control

User Feedback from the application

Conduct real-world data testing (Beta)

We need more time to optimize the hotspot

