

SHOOPS (SMART H2O POLLUTION SOLUTION)

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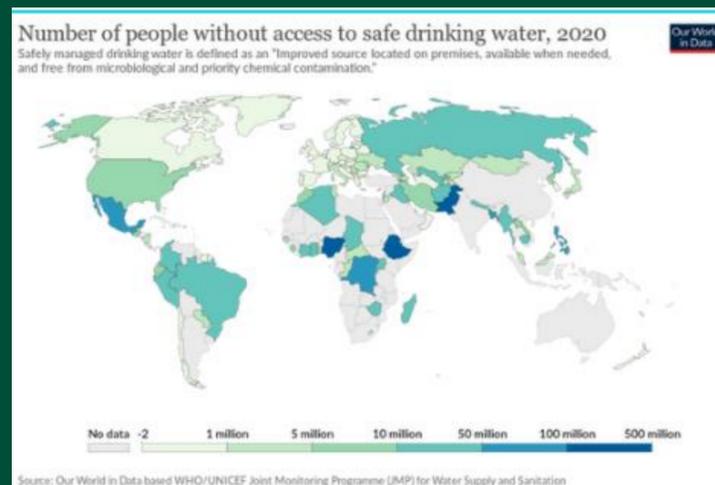


PROBLEM STATEMENT

A big percent of the global population does not have access to clean drinking water – a key necessity in life. We wanted to create a solution to being an accessible, portable solution for communities impacted by a water crisis or natural disasters.

BACKGROUND

Lack of clean drinking water is an issue throughout this country and this filter could be a reliable, smart solution to this problem. Communities such as Flint, Michigan have been impacted by a water crisis, and consuming contaminated water results in numerous health issues.



SUMMARY OF WORK

We used machine vision code that identified the contaminants in a sample of water by comparing the color of the test strip before and after the water has been filtered. For filtration, we have a 4-stage reverse osmosis system that is able to effectively filter 99% of the water. We build the machine vision code, a website controller, the filtration system with pump, 3D printed test strip enclosures and a light box enclosure.

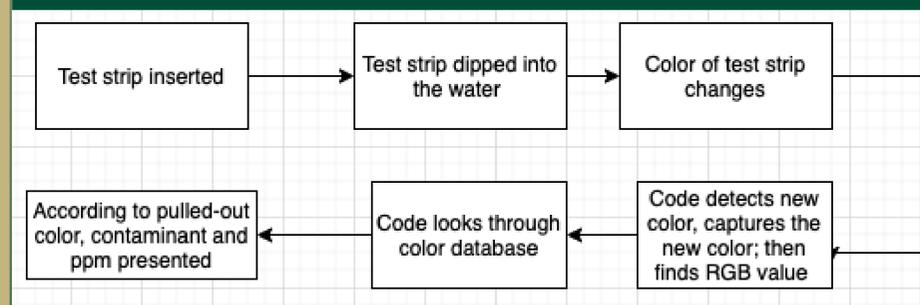


Figure 2: Shows the logic of our machine vision program

IMPACT ON COMMUNITY

By implementing this design idea, we are able to have a positive impact on the community. A higher percentage of the population will have access to clean, drinkable water. This would eliminate a lot of diseases that would be the result of drinking unfiltered water such as cholera and typhoid. Secondly, this system can be used for natural disaster relief as clean water and bottled water becomes inaccessible during times of crisis.



Figure 3: The Reverse Osmosis System Used