**ABSTRACT**

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**Automatic Water Tank Filling System and Monitoring Using Arduino**

Water supply is the most important thing in daily home activity especially for washing, cleaning, and taking a bath. People commonly supply the water by pumping the groundwater to fill a water tank. However, the utilization of non-automated switch used to turn on and turn off a pumping machine sometimes causes either the water spills or a wasteful electrical consumption. The system is designed by applying an ultrasonic sensor, an automatic switch module, an Arduino microcontroller, and a pumping machine in order to automatically switch the water filling. An ultrasonic transmitter is mounted on the top of the tank which transmits an ultrasonic pulse down into the tank. This pulse which travels at the speed of sound will be reflected back to the transmitter from the liquid surface. The time delay measurement between transmitted and received signals enables the device to calculate the distance to the surface. The transmitter is programmed to automatically determine the liquid level and switch the pumping machine. The dynamics of water flow and liquid level during filling and draining the water tank will be reported. With this system, people will enjoy supplying water without their worries related to water spills and a wasteful electrical consumption.

Using the turbidity sensor, we can check if the tank is clean or dirty and depending upon it, we can let the user know if the tank is dirty and it needs to be cleaned for a healthy supply of water and avoid any sort of contamination.