# Pipe Flow Management and Leak Detection with Sensors

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## Abstract

The purpose of this project is to detect the leakage of water (if any) in the pipe flow with the help of a suitable sensor, so that a huge sum of water can be saved, which would be the most essential part of "Saving our lives tomorrow!". This project also serves the purpose of finding the amount of water flowing through the pipe (discharge $m^3/s$) so that the quantity of water according to the requirement (number of houses) in cases of water rationing to houses by the Panchayat can be limited. A research study tells that every Indian wastes up to 45 Liters of water per day. Implementing our project in the water rationing systems in apartments and in houses greatly reduces the wastage and overuse of water by common people. This project makes use of Arduino UNO and smart sensors (Water flow sensor-working flow rate up to 30 L/min) that generates a signal when there is a leak or overflow of water in the pipe. With growing population and increased industries, our country will shortly face water scarcity. A small step towards a change would create a greater impact in the future. Therefore, our project would definitely create a greater change towards "Saving Water" which is the compelling need of the hour.

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