**Real time web based infrastructure for residential water usage monitoring**

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**Problem statement:**

*What is the problem / Research Question:*

* Water is a scarce resource. Monitoring is important
* Traditional water monitoring methods involve manual inspection of a water meter which results in a single data point per month.
* Conventional lumped monthly water bills lacks granular temporal resolution.
* Households and utilities will be better informed of water usage patterns/ trends and can take relevant actions like water conservation, etc.

Population growth is intensifying water usage which is getting more problematic with climate change scenario. Monitoring is helpful to keep track of water usage. Traditional water monitoring methods involve manual inspection of a water meter which results in a single data point per month that lacks granular temporal resolution. Continuous monitoring would better inform households and utility managers to adopt suitable conservation measures.

*Form of output, and scope and limitations:*

* End to end automated monitoring system
* Continuous water usage data collection
* Development of a web interface to visualize and analyse water usage

This project aims to build a back-end web based infrastructure that would enable continuous data collection. The components will specifically include data processing, storage, retrieval and analysis.

*Target testbed, tools:*

* Testbed will be USU Living Learning Community (LLC) housing facilities.
* Python, SQL, Javascript based system

Python, SQL, Javascript will be used to automate water usage data streaming from USU’s Living Learning Community (LLC) housing facilities.