HACK'NDORE

CRACK THE CODE TO DIGITAL INDORE

# Water Supply Management

## Team : RozgaarRahi


1. Kunal Singh
2. Shreyas Namdeo
3. Jeet Verma
4. Yash Upadhyay


RozgaarRahi Presents
जलदर्पण
Solution to the Water Management in the City
New age solutions to solve water problems
Made with VISME

# Viewing the Problems

- Leakage in Pipelines
- No data to enable detailed analysis and reporting
- Unequal distribution of water across all wards/regions

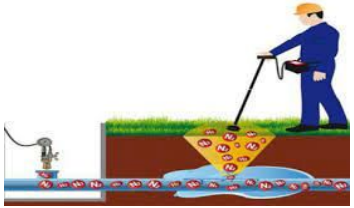
## WHAT WE HAVE TO OFFER

A full-proof system to **detect Leak in Pipelines**

**Maintenance and Repair Management** Alerts at right time

**Complete Water Distribution Monitoring and Analysis**. Further Helping in taking conservative actions and all.

# ALREADY EXISTING SOLUTIONS FOR DETECTION OF LEAKAGE IN PIPELINES



**Acoustic testing devices**: through sound of broken pipe (hissing, gurgling).

**Tracer gas detection:** This method can help find leaks that can't be heard.

**देसी** Method

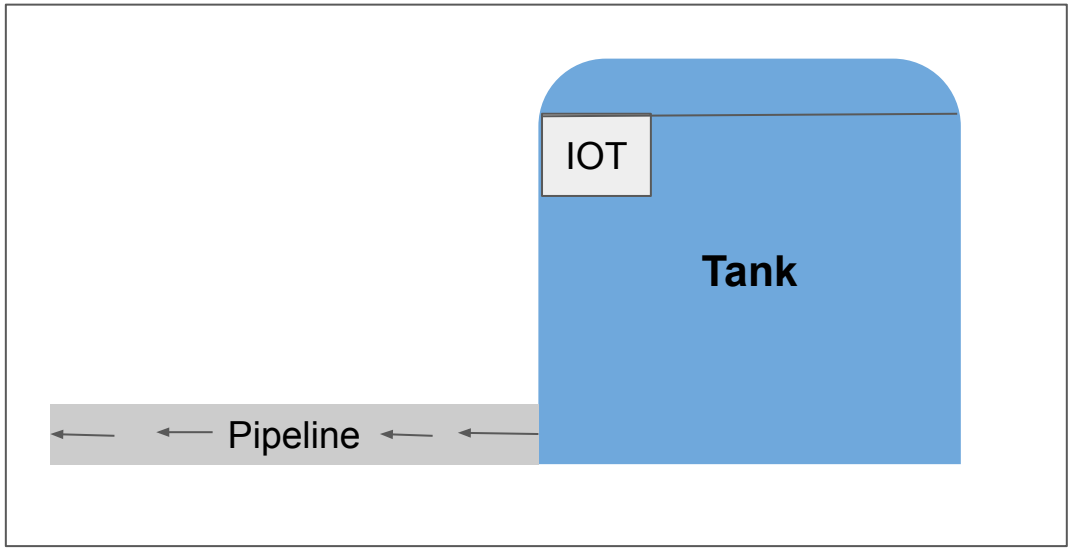
## Drawbacks

1. Too expensive
2. Time consumed in identifying there's a leakage

# 1.

## WHAT WE WORKED ON

**Self Identification of a leakage in pipeline**




**Concept :** There is a general time taken by the main tanker to supply water, if the tank becomes empty sooner, means there is an added supply of water somewhere

Thus, identifying there is leakage in this locality, and triggers and alarm

# 2.

## WHAT WE WORKED ON

**Identifying the location of leakage**

**Concept :** Once we have information about the locality where the leakage has happened, the IOT devices in the pipelines start to operate and give us the data

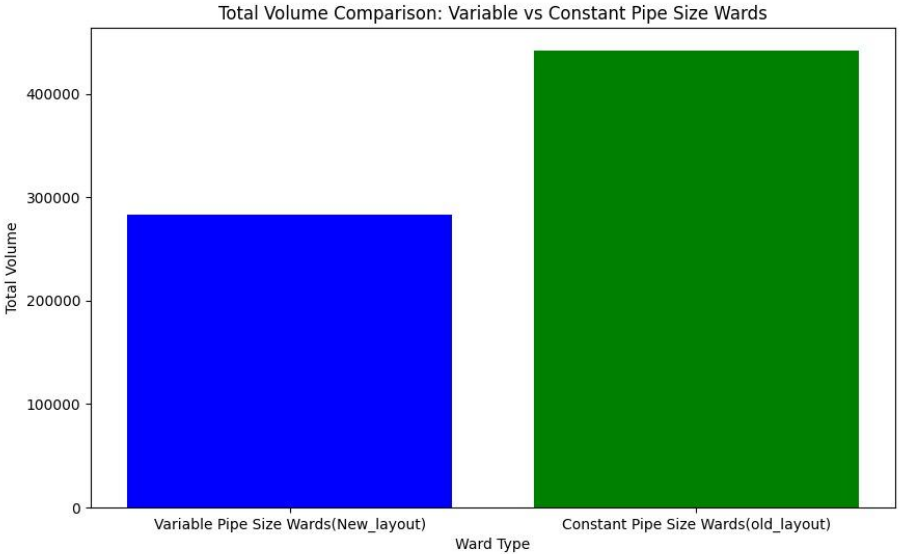
Thus, the data received from the devices tell us where is the difference in water inlet and outlet is in the pipe

**Hence that particular pipeline has a potential leakage**

# 3.

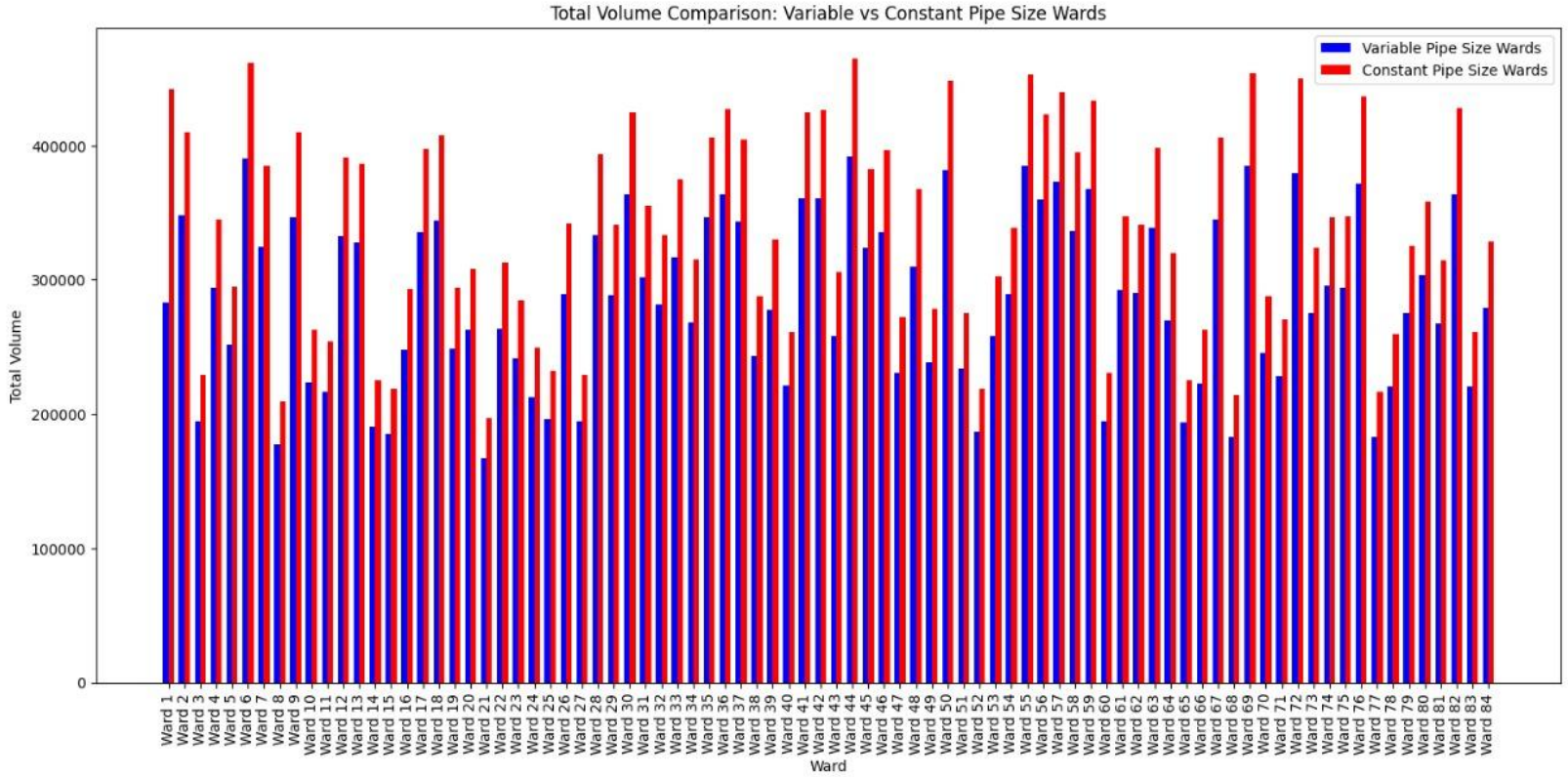
## WHAT WE WORKED ON

### Size of Pipelines as per need




**Concept :** currently the size of pipelines distributing water in all lines of houses in indore is same, varying them as per requirement solves many problems

1. **Water conservation** : saving a large amount of water
2. **Equal Distribution** of water in localities




Representation of wards receiving more water than the actual requirement, and how it can be balanced just by varying the size of pipelines

# ADDITIONALS

## Real-Time Monitoring

- **Purpose**: Track water flow, pressure, and quality in real-time.
- **Types of Sensors**: Pressure sensors, flow meters, and leak detectors.

## Predictive Analytics and ML

- **Purpose**: Forecast water usage and identify potential issues before they occur.
- **Usage**: Predict future water needs and pipeline requirements based on historical data.

## GIS Mapping

- **Purpose**: Visualize pipeline routes, household connections, and infrastructure conditions.
- **Benefits**: Helps in managing and upgrading the pipeline network effectively.

# GIS Mapping

- **Pipeline Visualization**:
  - **Example**: A digital map showing all pipeline routes and connections.
  - **Explanation**: Helps in visualizing the entire network, making it easier to identify issues and plan upgrades.
- **Aging Infrastructure**:
  - **Example**: Highlighting old or deteriorating pipeline sections on the map.
  - **Explanation**: Prioritizes maintenance and replacement of aging infrastructure.

# System Architecture

## 4.1 Azure IoT Central Integration

- **Purpose**: Manage IoT devices and data.
- **Features**:
  - Device command and control.
  - Monitoring and alerting.
  - Configurable dashboards.
  - Integration with Power Automate for workflow automation.

# THANK YOU

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