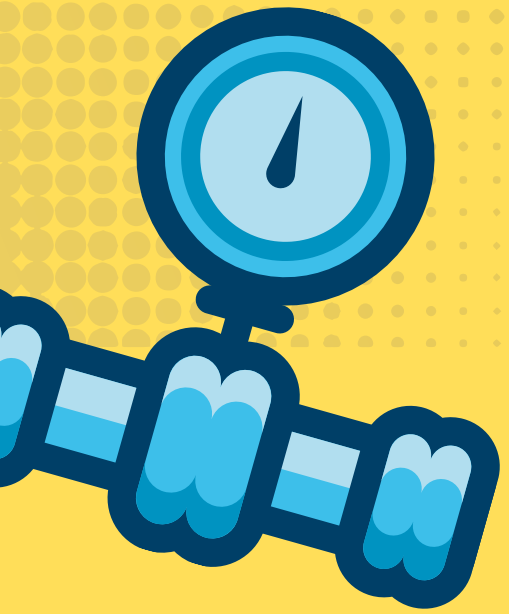
# AQUAGUARD

*-simulated IoT-based Water Management System*



## TEAM MEMBERS

**Naman**

**Ashaz**

**Avineet**

**Nayan**

**Gourav**

# SIMULATED DATA GENERATION

We needed to generate data for Water Flow, Pressure, Temperature & Leak detection to mimic real-Time System

To achieve this, we initialized our values with constants and incremented them at each iteration by adding a small random value

To mimic anomalies, we introduced large values with a very small probability

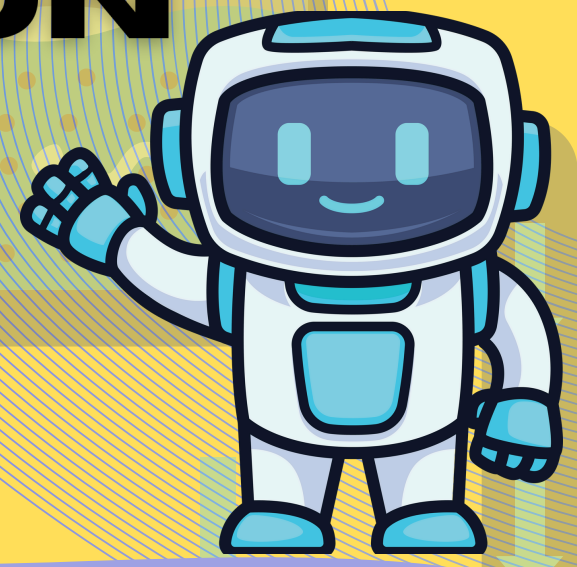
# DATA ANALYSIS AND VISUALISATION

The system helps users quickly identify critical readings like peak water flow, lowest pressure, or abnormal temperatures

the interface offers interactive navigation, allowing users to scroll through previously plotted data effortlessly

This blend of interactivity and time-specific analysis enables a clear understanding of the system's behaviour and supports effective decision-making

# RECOMMENDATION SYSTEM



We created a chatbot powered by a LLM for instant, intelligent, and contextual responses, enhancing user experience and providing accurate assistance

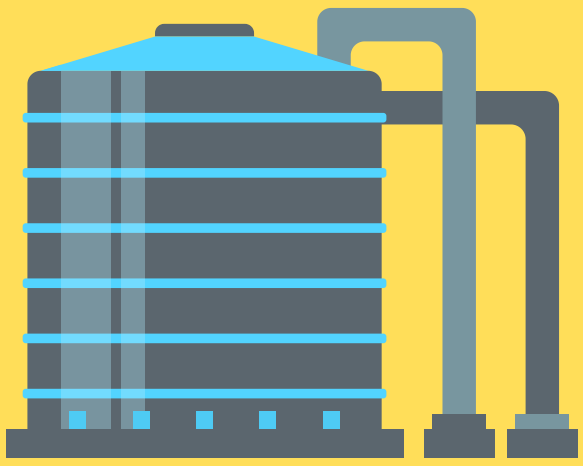
Users can directly download the CSV file of the sensor data history

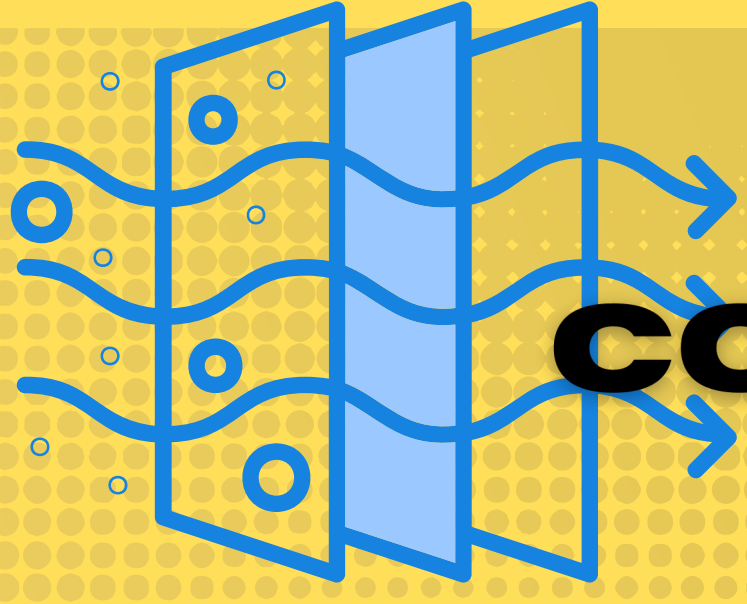
# USER INTERFACE

We developed a dashboard that shows real-time sensor values and provides instant insights into system performance

It also includes interactive graphs to visualize historical data, enabling easy trend analysis

Users can request changes or updates through an integrated chatbot, ensuring seamless interaction





# CONCLUSION

Through hard work and collaboration, we developed an innovative IoT-based water management solution to tackle real-world challenges

We thank the batch of 2k9 for sponsoring the hackathon, providing us with a platform to showcase our skills and address this impactful issue