AQUAGUARD

Simulated IoT-based Water Management System

live demo link : https://aquaguardd.netlify.app/

INTRODUCTION

AquaGuard: Simulated IoT-Based Water Management System

Optimizing water usage and detecting inefficiencies through data simulation and analysis.

KEY POINTS:

1. Importance of water management in modern systems.
2. Challenges of real-time monitoring due to physical hardware requirements..
3. AquaGuard offers a virtual solution to simulate IoT data and optimize water systems.

VISUALS:

WORKING MECHANISM

1) Water flow rate.
2)Pressure.
3)Temperature

DATA FROM THE SENSORS GIVEN TO THE MODEL
(here for simplicity we used .csv file and provided synthetic data)

WEBSITE BACKEND

GRAPH ANALYSIS AND DATA VISUALISATION

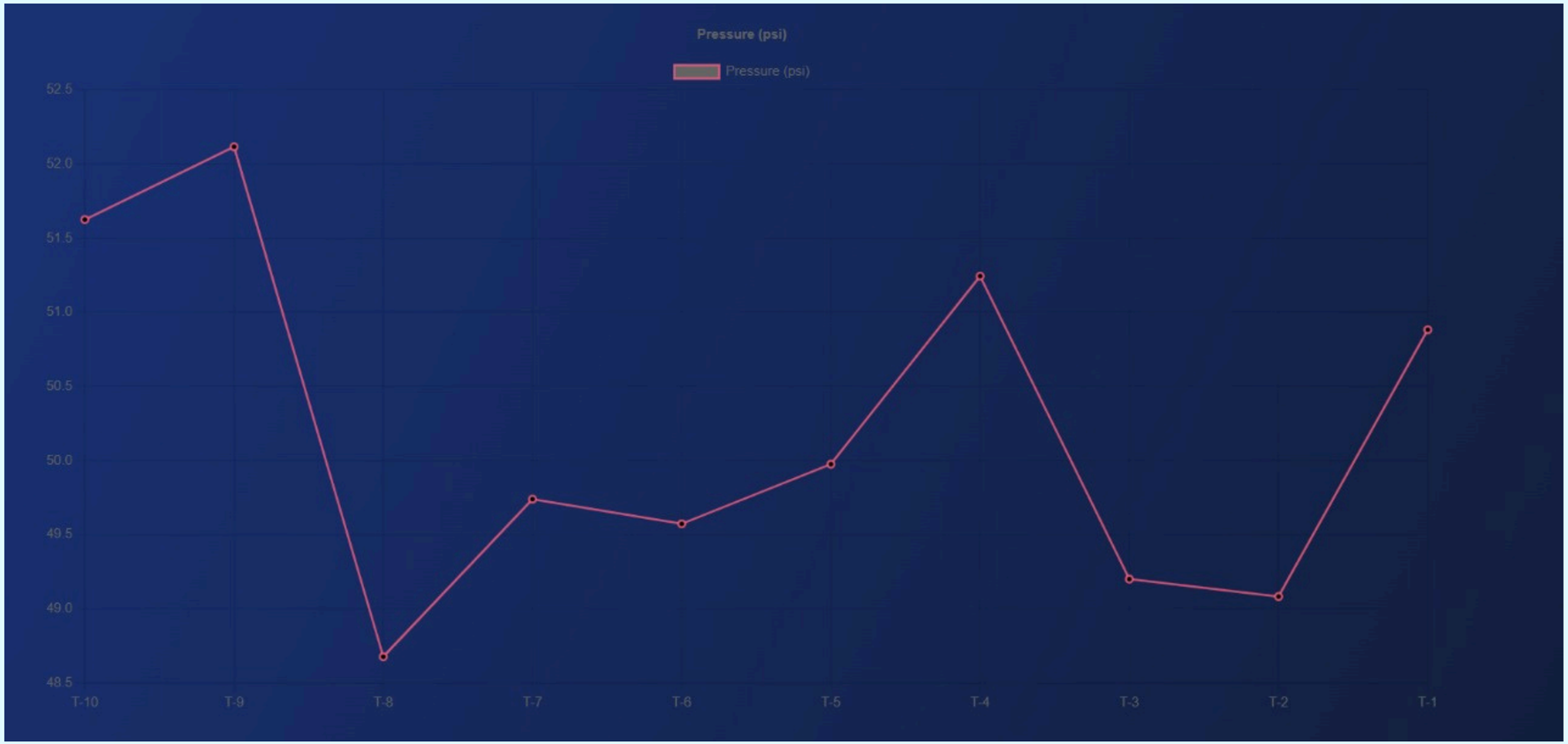
RECOMMENDATION SYSTEM

GRAPH ANALYSIS

Flow rate vs time interval

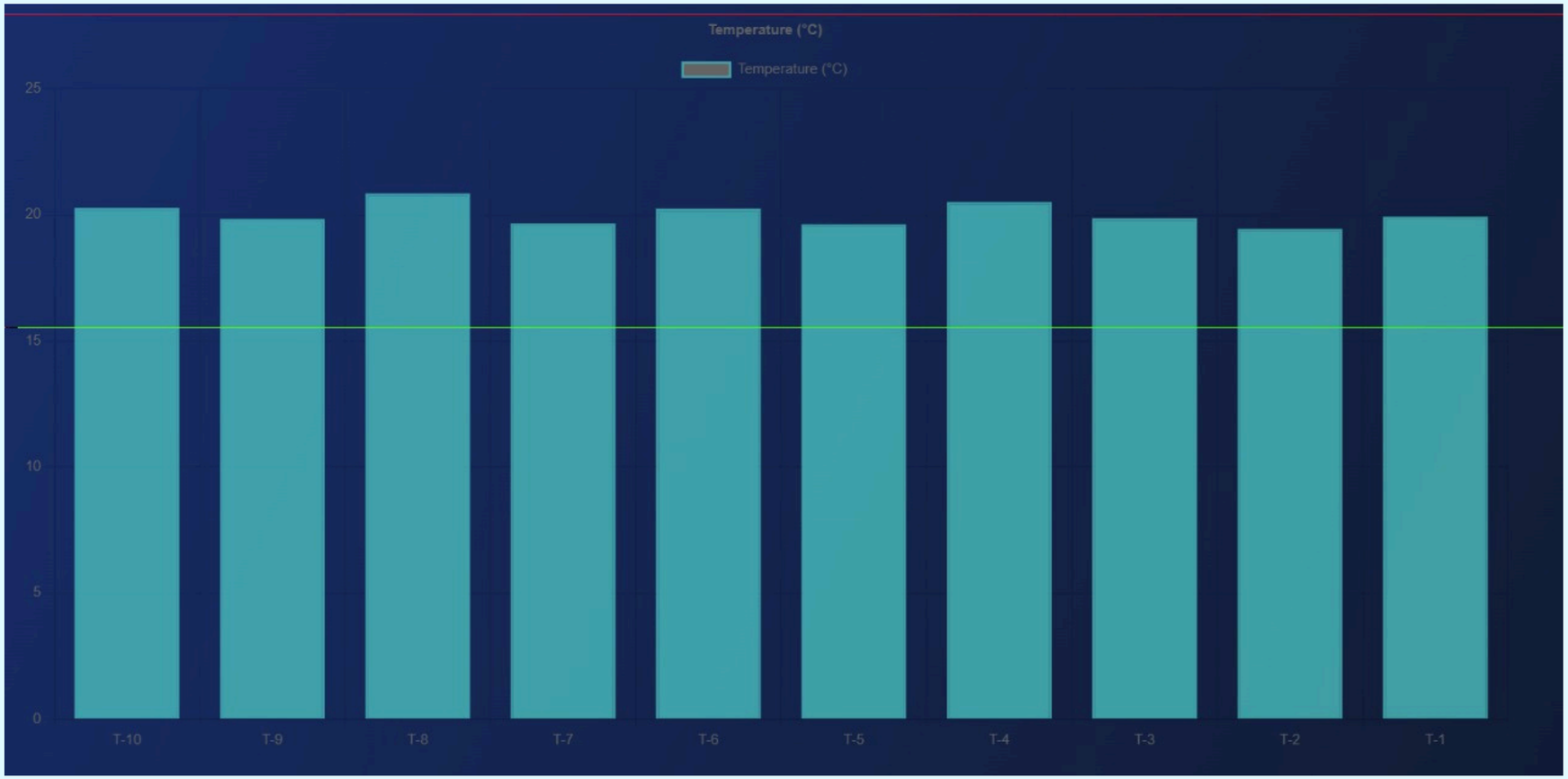
GRAPH ANALYSIS

Pressure vs time interval



GRAPH ANALYSIS

Temperature vs time interval



SYSTEM FEATURES:

- **SIMULATED SENSOR DATA GENERATION:**

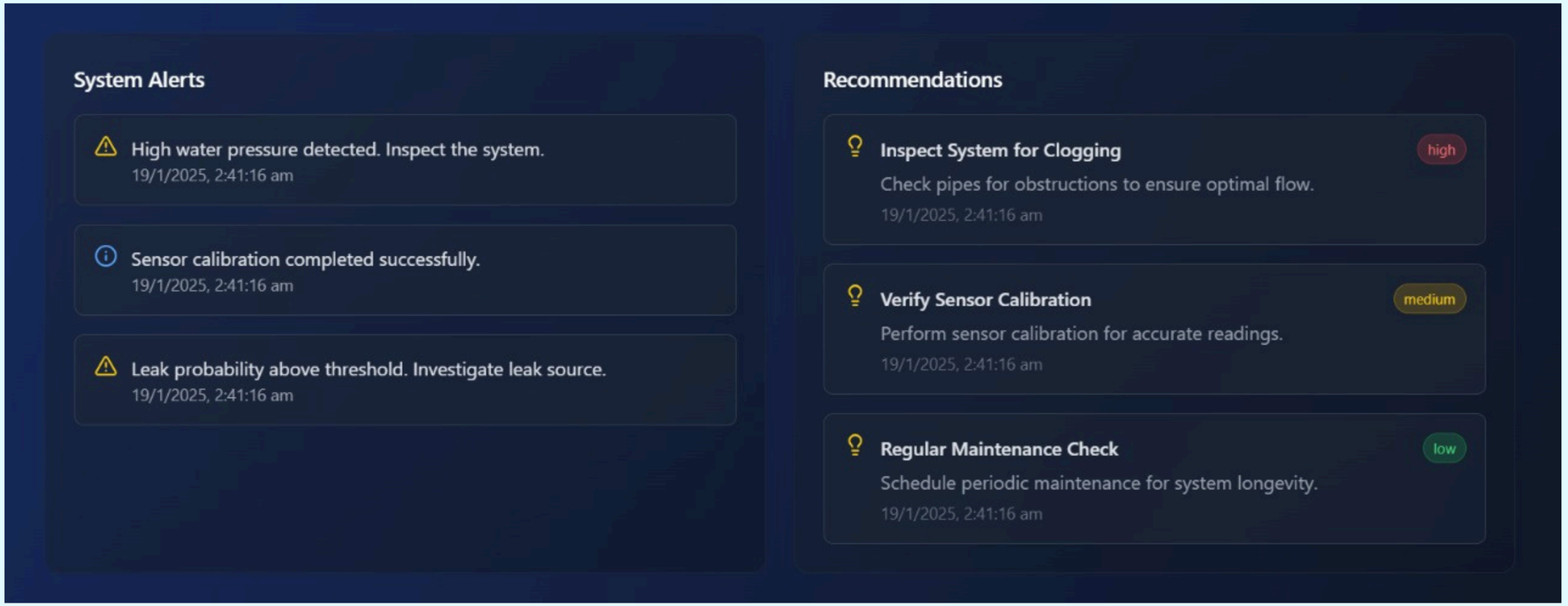
Water flow rate sensor

Water pipeline pressure sensor

Water temperature sensor

SYSTEM FEATURES:

- ## RECOMMENDATION ENGINE AND SYSTEM ALERTS



PROBLEMS ADDRESSED

- Water Wastage
- Water Scarcity
- Leaks and Infrastructure Issues
- Monitoring and Maintenance Challenges

TECH STACKS

HTML , CSS, TYPESCRIPT, REACT.JS, CHART.JS

PYTHON, NUMPY (to generate synthetic data that mimics the real time database) , MATPLOTLIB (for generating graphs)

“Efficient, Intelligent, and Sustainable Water Management.”

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THANK YOU