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Client: NDA
Industries: Technological solutions / Food service
Region: London, UK

PROJECT TYPE
Internet of Things

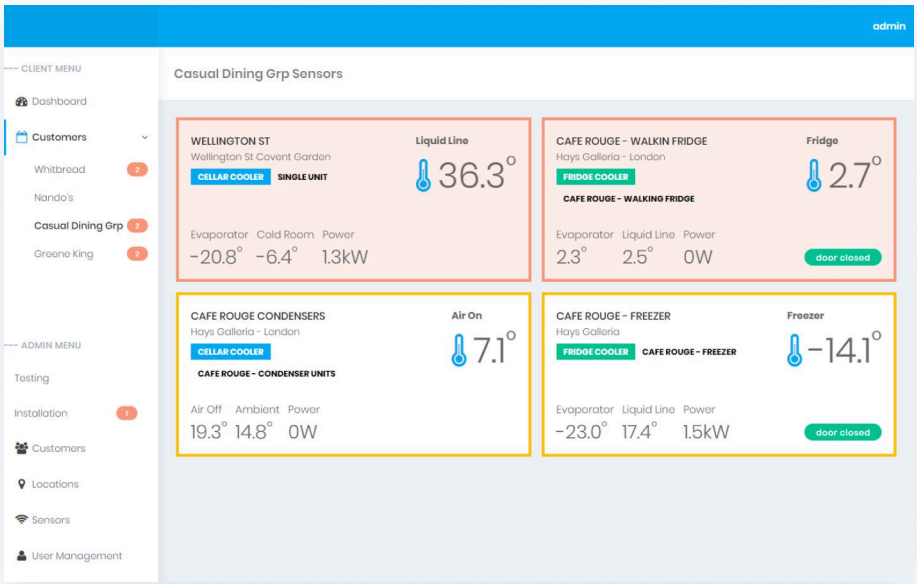
TECHNOLOGIES
Ruby (Ruby on Rails), JavaScript, Firebase, PostgreSQL

DURATION
12 weeks

TEAM
1 Project Manager
2 Senior RoR Developers

Fridge sensors – internet of things application development

An IoT monitoring platform for HoReCa venues that reduced refrigerator-related food spoilage by ~25% and cut emergency maintenance calls by ~40% through real-time anomaly detection and HACCP-compliant automated temperature logging.



Project background

The core of the project is an IoT solution providing HoReCa venues with the possibility to monitor the work of industrial (commercial) refrigerators online, get instant alerts on urgent issues and manage historical data.

By the time the Client turned to SumatoSoft for software development assistance and guidance, they had already developed and tested the required devices.

Project Distinctive Features

- ✓ Develop Administrative and End-User Panels
- ✓ Connect IoT Devices
- ✓ Implement Features for Data Transmission, Processing, Visualization and Database Management

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Business challenge

The objectives of the project set for SumatoSoft Team by the Client were the following:

- to plan, design and develop an MVP (minimum viable product) version of the solution to prove the feasibility of the project;
- to potential investors and demonstrate an effective solution to future Clients;
- to implement Big Data and Machine Learning solutions;
- to integrate the new application into the ecosystem of the Client's existing solutions.

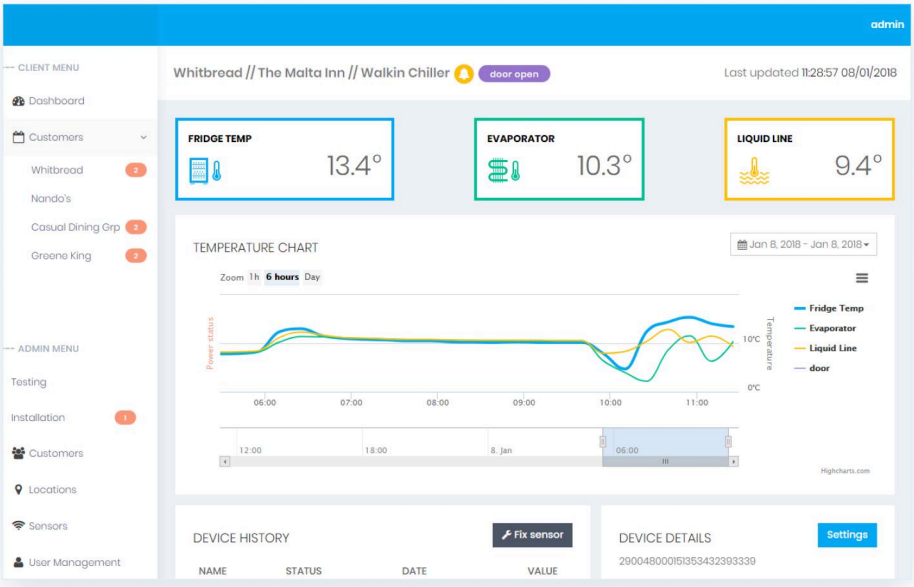
The major challenge of our team was to develop administrative and end-user panels, implement core features for monitoring, visualization of data (multiple indicators: temperature, electricity, door sensors, etc.), database management, and provide integration with the data source.

In addition, the Client requested introducing AI & ML algorithms for anomaly detection.

Our solution

SumatoSoft created an application with main technological features, sufficient for initial commercial use and user feedback. The MVP version of the solution included:

- A tool for data gathering and systematization.
- A web panel for service administration and sensor setup.
- A web panel for end users.



The application incorporated a number of specific features, such as:

- Robust integration with an external data source (Firebase).
- Integration with a JS library for extensive data visualization.

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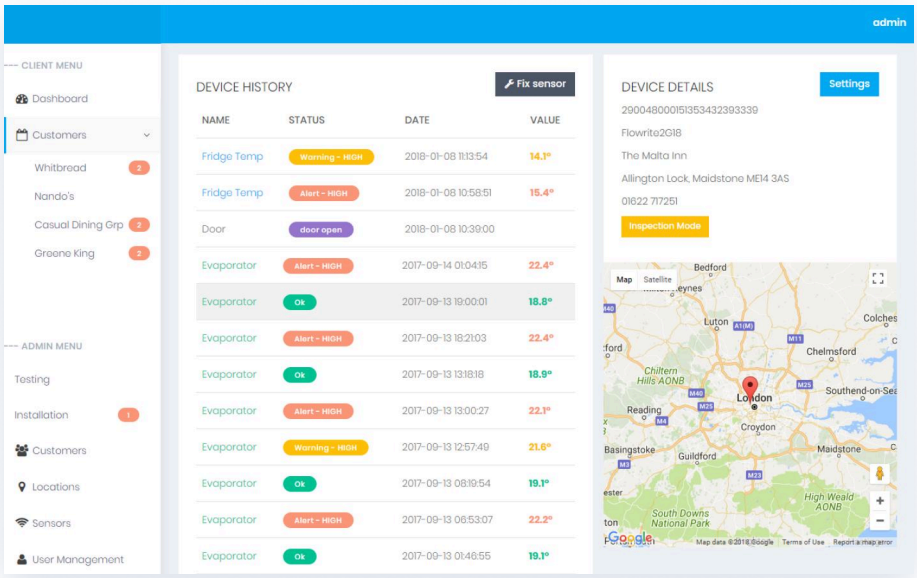
- A custom system for role administration with extended permissions management.
- Machine learning integration.
- Data visualization.

SumatoSoft Team was also entrusted with connecting the IoT devices (smart sensors) to the wireless network, enabling transmission and processing of data collected by the sensors.

The solution developed by SumatoSoft allows you to:

- Monitor refrigerators in real time (condition, temperature, whether doors are closed).
- Detect anomalies and get instant alerts in case of emergencies.
- Be notified when refrigerators need to be repaired.
- Access and control historical data and analyze statistics introduced in intuitive and interactive dashboards (track condition over time).



Customer's benefits

The IoT monitoring platform helped HoReCa venues reduce refrigerator-related food spoilage by ~25% through proactive anomaly alerts and real-time temperature monitoring, while cutting emergency maintenance calls by ~40% via automated fault detection that replaced reactive break-fix service. The Client's MVP generated its first purchase orders from existing customers immediately after the initial demonstration, confirming commercial demand for full-scale deployment.

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