Rakusens is a traditional food manufacturer in Leeds. They are upgrading its production with AI and Big Data to stay ahead. As part of this plan, we’re developing an interactive, real-time dashboard to monitor temperature data from sensors across the production line. This tool will help operators quickly adjust temperatures based on data-driven insights, improving product quality and energy efficiency.

**The key features and Tasks**

**Real-Time Data Visualization**

* Display live temperature readings from multiple sensors.
* Update visualizations dynamically (e.g., every few seconds).

**Interactive Dashboard**

* User-friendly interface with charts/graphs (built with Plotly.js)
* Responsive design for desktop, tablet, and mobile use.

**Anomaly Detection**

* Flag unusual temperature trends using a traffic-light system (green/yellow/red).
* Integrate a pre-trained machine learning model to identify outliers automatically.

**Data Access & API**

* Build an API to fetch and parse temperature records from an SQL database.
* Ensure seamless data flow between the database and dashboard.

**User Authentication**

* Secure login system for operators.
* Password reset functionality for account management.

**Goals & Benefits:**

* Improve Production Quality which means operators can react faster to temperature fluctuations.
* Boost Energy Efficiency. This will reduce waste by optimizing heating/cooling processes.
* Replace Manual Checks as there will be automated data monitoring to save time and reduce errors.

**Technical Approach:**

* **Frontend:** JavaScript (Plotly.js), HTML/CSS, responsive frameworks (e.g., Bootstrap).
* **Backend:** API (Python/Node.js), SQL database integration.
* **AI/ML:** Pre-trained model for anomaly detection (provided externally).

By the end of this we shall have a simple but powerful tool that takes random sensor numbers and turns them into useful information making it easier for Rakusens to make production decisions based on reliable data instead of guessing.