



Specification for Asani.io Hackathon

Challenge # 5: Smart Utilities Monitoring & Insights

Introduction

In the heart of a bustling industrial zone, Saleem Bhai managed a complex factory operation reliant on numerous interconnected systems—power distribution, water management, temperature control, and more. Despite his best efforts, he often struggled to optimize his operations holistically. Power fluctuations disrupted production, water wastage went unnoticed, and tracking various parameters like electrical conductivity or humidity levels was disconnected from overall resource efficiency. The lack of cohesive real-time data left him making decisions based on incomplete information, leading to not just inefficiencies and unexpected downtime, but also missed opportunities for sustainable operations and cost savings.

To tackle these challenges, Saleem turned to a team specializing in industrial monitoring systems. They deployed an integrated solution tailored to his needs, connecting advanced power monitoring, automated water management, flow and conductivity measurement, as well as environmental monitoring into a unified platform. These systems worked together to provide insights not just into individual metrics, but also into patterns of resource usage, operational efficiency across shifts, and overall environmental impact. With clear, intuitive visualizations at his fingertips, Saleem could now understand the broader implications of his operational decisions, anticipate system failures, and make proactive choices that balanced efficiency with sustainability.

The impact was profound, but the journey didn't stop there. The team behind the solution began enhancing the dashboards to provide an even richer experience. By incorporating high-quality graphs and detailed metrics, they aimed to help Saleem analyze data more effectively and uncover deeper insights into energy consumption patterns, resource utilization trends, and overall system performance. Their vision was to transform raw data into actionable intelligence that could drive both operational excellence and environmental stewardship.

What this Challenge Offers

This challenge presents a unique opportunity for participants to engage with real-world problems faced by industries today. By working on solutions for monitoring systems—such as power, flow, water management, electrical conductivity, and environmental factors like temperature and humidity—participants will dive into complex, end-to-end solutions that are implemented at an industrial scale, comprehensive solutions that consider both immediate operational needs and long-term sustainability goals.

Objective

The objective is to design and develop advanced industrial dashboards that provide deep insights into critical systems such as power monitoring, water management, flow measurement, electrical conductivity, and environmental factors like temperature and humidity. Advanced industrial dashboards that provide deep insights into critical systems while enabling smarter, more sustainable operations. These dashboards will integrate real-time and historical data, offering high-quality visualizations and detailed metrics. The goal is to enhance data analysis, enabling proactive decision-making, pinpointing inefficiencies, and uncovering trends to improve overall system performance and drive continuous improvement in industrial operations.

Core Focus Areas:

Realtime Monitoring

- Comprehensive monitoring of power consumption, water usages and flow metrics
- Live tracking of environmental parameters including temperature, humidity, and electrical conductivity
- Instant alerts and notification for operational anomalies

Strategic Insights

- Comprehensive system behavior tracking
- Resource utilization forecasting
- Historical data visualization and benchmarking
- Production shifts analysis and resource utilization metrics

Our Solutions

At Asani, we take pride in offering products that deliver reliability, intelligence, and efficiency. Your mission is to reimagine how our products can offer an even more elevated, premium experience. The goal is to enhance both the branding and customer journey across all touchpoints—from the names of our products to their interfaces and how users interact with the data. Below is an overview of a part of our existing product line and the challenge ahead:

1. Automated Water Management Systems

- **Purpose:**

Our automated water management system and motor controllers automate the hassle of filling tanks and managing water usage at both the domestic and industrial level. The system efficiently manages inline and other water inputs, ensuring that tanks are always filled and resources are utilized optimally. With an integrated notification system, users are promptly alerted about overflows, tank status changes, control status updates, and motor status changes. Additionally, the system provides customers with historical trends of their water usage, offering valuable insights for better resource management.

- **Challenge:**

How can you redesign the entire customer experience for our automated water management system, from the mobile app to the physical product, and extend it through customer onboarding, support, and all touchpoints? The goal is to make our system feel indispensable—a daily necessity that users rely on. Focus on enhancing user engagement, integrating premium features, and designing an interface that's both intuitive and luxurious. How can you make the experience feel sophisticated and innovative, while positioning the system as a basic need? Explore ways to make notifications, historical trends, and personalized insights more actionable, helping customers see the value of our system in managing their water resources. Ultimately, your design should create a seamless, integrated solution that becomes an essential part of the customer's routine, offering a premium experience every time.

2. Power Monitors

- **Purpose:**

Our power monitors provide real-time tracking of electrical parameters such as current, voltage, power factor, and energy consumption across both single-phase and three-phase systems. These essential devices are used by industries and businesses to optimize energy usage, reduce waste, and improve operational efficiency.

- **Challenge:**

How can we reposition our power monitors as a premium, must-have energy management solution? Consider how we can enhance the interface to offer a sophisticated, intuitive experience, while incorporating rich, interactive insights that give users more control over their energy consumption. Explore innovative ways to visually present data and integrate features that make energy monitoring feel not only efficient but also luxurious.

3. Flow Monitors

- **Purpose:**

Flow monitors accurately measure fluid flow rates, helping users monitor consumption and prevent wastage in both industrial and domestic settings. These devices are critical for maintaining resource efficiency and ensuring sustainable operations.

- **Challenge:**

How can we elevate the flow monitoring experience, making it both intuitive and engaging for users? Think about adding advanced features such as predictive flow trends, interactive visual dashboards, and personalized alerts to give users greater control. Consider how the user interface can convey a sense of sophistication while making resource management more accessible and enjoyable.

4. Level Indicators

- **Purpose:**

Our level indicators provide real-time monitoring of liquid levels in tanks and reservoirs, ensuring users can proactively prevent overflows and shortages. These devices are essential for managing water resources efficiently.

- **Challenge:**

How can we elevate level indicators to offer a more personalized and immersive experience? Imagine incorporating 3D tank models or smart consumption insights that empower users to track and optimize their water usage. How can we position these indicators as an integral part of a sophisticated, premium water management system, adding both functionality and elegance?

5. Electrical Conductivity Monitors

- **Purpose:**
Electrical conductivity monitors measure the temperature and conductivity of water, providing critical insights into water quality. These devices are essential in industries where water purity is paramount for operational success.
- **Challenge:**
How can we present conductivity data in a manner that feels both premium and actionable? Explore the possibility of integrating advanced visualizations and offering tailored recommendations for improving water quality. Can we enhance user engagement by turning water quality monitoring into a dynamic, valuable experience?

6. Temperature & Humidity Monitors

- **Purpose:**
Temperature and humidity monitors deliver precise readings to help users maintain optimal environmental conditions. These devices are crucial in settings where climate control is key to preserving both comfort and equipment longevity.
- **Challenge:**
How can we transform temperature and humidity monitoring into a more interactive and insightful experience? Consider adding customizable alerts, interactive trend graphs, and expert environmental recommendations. How can we elevate the product to feel not just functional but also sophisticated and premium, adding value to every interaction?

Key Judgement Areas / Expected Output

1. Brand Elevation

- **Rebranding:** Propose premium names and taglines.
- **Design:** Refine visuals (logos, colors, icons) for a sophisticated feel.
- **Value Proposition:** Position Asani as a high-end, essential brand.

2. Customer Onboarding

- **Onboarding Journey:** Create a personalized, seamless flow with product interaction.
- **First-Time Experience:** Design an impactful, guided setup.

3. Interface Redesign & Feasibility

- **UI/UX:** Suggest design upgrades such as interactive dashboards.
- **New Features:** Add innovative, user-centric features.

4. Solution Presentation

- Clearly outline the problem and solution.
- Use visual aids (mockups, wireframes).
- Demonstrate feasibility with implementation steps.

5. Customer Perception & Engagement

- **Engagement:** Encourage frequent, meaningful interaction.
- **Retention:** Ensure long-term use of Asani products.
- **Premium Feel:** Refine elements for a polished, exclusive experience.

Additional Focus Areas:

- **Innovation:** Differentiating ideas.

- **Scalability:** Solutions should scale across devices.
- **Simplicity:** Maintain intuitive design.
- **Impact:** Ensure improvements in engagement, satisfaction, and perception.

