PS01-Organization: AstroView — Understanding Space Through Actionable Data

CONTEXT

In recent years, space exploration and satellite technologies have progressed rapidly, producing massive volumes of real-time data about celestial events, space missions, and cosmic conditions. This information contributes not only to scientific advancement but also supports practical applications such as climate monitoring, disaster management, agricultural planning, and environmental analysis.

However, this data remains fragmented, highly technical, and difficult for students, educators, enthusiasts, and the general public to access and understand. Information about missions is scattered across multiple agencies and platforms. Time-sensitive sky events such as meteor showers, satellite passes, aurora visibility, and planetary alignments are frequently missed due to the lack of a unified, localized, and user-friendly information source.

Furthermore, the connection between satellite data and its real-world impact on Earth is rarely communicated in an intuitive and engaging manner. As a result, a gap exists between the availability of space data and the public's ability to interpret, learn from, and benefit from it, limiting curiosity, education, and awareness.

To bridge this gap, there is a need for a system that transforms complex, scattered space data into meaningful, accessible, and actionable insights for everyday users.

CHALLENGE

Solution Design

Build an interactive platform where:

- Users can access centralized information about celestial events and space missions.
- The system provides localized and time-sensitive alerts for observable sky events.
- Complex satellite and astronomical data is converted into simple visual explanations.
- The platform connects space data to real-world applications such as climate, agriculture, and disaster awareness.
- The experience encourages learning and engagement for non-expert users.

IMPORTANT NOTES

- The application must be easy to understand for users without scientific backgrounds.
- It should support educational usage for students and teachers.
- Include features such as event notifications, visualizations, and simplified explanations.
- Ensure reliable and clear presentation of data without overwhelming the user.

TECHNOLOGY BASELINE

Assume users have access to internet connectivity and smart devices capable of receiving notifications and displaying interactive visual content.

OUTCOME

A functional prototype that centralizes space-related information into an accessible and educational platform.
The system should enable users to discover celestial events, understand their significance, and recognize how space technology impacts everyday life.
The solution should enhance curiosity, improve scientific awareness, and provide an engaging learning experience for users of all ages.

PS02-Organization: OpsAgent — Autonomous Operations Assistant for Small Businesses

CONTEXT

Small businesses form the backbone of the economy, yet most operate with limited staff, limited tools, and heavy dependence on the owner for daily decision-making. Owners must simultaneously manage inventory levels, staff schedules, supplier coordination, cash flow, and compliance requirements.

These operational activities are repetitive, interconnected, and time-sensitive. Tasks such as reordering stock, checking payments, and supplier follow-ups occur frequently. Decisions in one area affect another, for example inventory influencing cash flow or staffing affecting sales. Delays often result in shortages, financial loss, or customer dissatisfaction.

Currently, many businesses rely on spreadsheets, messaging apps, or manual intuition to handle operations. Small mistakes accumulate over time leading to missed reorders, inefficient staffing, disrupted supplier relationships, and operational stress. Owners spend more time reacting to issues than growing the business.

Although enterprise management systems exist, they are expensive, complex, and require constant configuration, making them unsuitable for small businesses. The core challenge is not the lack of data but the absence of continuous operational intelligence that can monitor, reason, and act proactively across daily activities.

CHALLENGE

Solution Design

Build an intelligent operational assistant platform where:

- The system continuously monitors business activities such as inventory, payments, and schedules.
- Routine operational decisions are automated or guided through recommendations.
- The platform predicts risks such as stock shortages, delayed payments, or staffing imbalance.
- Users receive proactive alerts and suggested actions before problems occur.
- The solution integrates simple inputs from existing tools like spreadsheets or messaging platforms.

IMPORTANT NOTES

- The application must be simple and usable for non-technical business owners.
- The system should minimize manual data entry and configuration.
- Include features such as alerts, decision recommendations, and activity tracking.
- Focus on proactive assistance rather than passive reporting.

TECHNOLOGY BASELINE

Assume users have access to internet connectivity and basic digital tools such as smartphones, messaging platforms, and spreadsheets for operational inputs.

OUTCOME

A functional prototype that acts as an always-on operations assistant for small businesses.
The system should detect operational issues before they become failures and automate routine decision-making processes.
It should reduce workload, improve efficiency, and allow business owners to focus on strategy, growth, and customer experience instead of daily operational firefighting.