

DECISION LOG

(Monday.com BI AI Agent)

1. Objective

The objective of this assignment was to build a production-ready Business Intelligence AI agent that integrates with Monday.com and provides founder-level insights through conversational queries.

The agent was designed to:

- Connect with live Monday.com data
 - Handle messy / real-world business information
 - Provide actionable insights such as:
 - Total work orders
 - Delayed work orders
 - Deals at risk
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2. System Architecture

The solution follows a modular architecture:

Layer	Responsibility
Monday API Layer	Fetch live board data
Data Cleaning Layer	Handle messy Excel / API structure
Insight Engine	Convert business questions into insights
UI Layer	Streamlit conversational interface

3. Key Technical Decisions

Decision 1 — Use Monday API Instead of Static Data

Instead of relying only on Excel files, the system was designed to integrate directly with Monday.com using GraphQL API.

This ensures:

- Real-time decision making
- Business relevance
- Production-readiness

Fallback logic was implemented using Excel data when API is unavailable.

Decision 2 — Modular Insight Engine

Instead of hardcoding logic in the UI layer, a separate insight engine was created.

Benefits:

- Scalable
- Clean separation of logic
- Easy to extend for new insights

Example supported queries:

- "How many work orders do we have?"
 - "Show delayed work orders"
 - "Show deals at risk"
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Decision 3 — Data Normalization

Business data often contains:

- Missing due dates
- Inconsistent formats
- Null values

The agent converts:

- Due dates → datetime
- Status → standardized format

This ensures reliable delay detection.

Decision 4 — Risk Detection Logic

Deals at risk were identified using:

Due Date < Today

AND

Status != Completed

This simulates real-world founder visibility logic.

Decision 5 — Conversational AI Style

Instead of dashboards, insights were delivered using natural-language responses.

Example:

"There are 2 delayed work orders."

This improves usability for leadership-level decision making.

4. Assumptions Made

Due to ambiguity in requirements:

- Delay was defined as:
Due Date < Today AND not completed
 - Missing data was ignored instead of causing failure
 - API failures fallback to Excel dataset
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5. Challenges & Solutions

Challenge	Solution
API connectivity issues	Implemented fallback mode
Messy data formats	Data cleaning layer
Missing due dates	Defensive parsing
Business question mapping	Keyword-driven insight engine

6. Production Readiness

The agent is production-ready because it includes:

- Live API Integration
 - Fault Tolerance (Fallback)
 - Modular Design
 - Conversational Interface
 - Business Risk Detection
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7. Future Improvements

- LLM-based question understanding
 - Automated anomaly detection
 - Trend forecasting
 - Slack / Email integration
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Final Outcome

The solution successfully delivers:

A conversational AI agent capable of analyzing operational data from Monday.com and delivering meaningful business insights to decision-makers.