DATA FLOW DIAGRAM

TEAM ID	LTVIP2025TMID30733
PROJECT NAME	Asset Management Portal

Purpose of the DFD

A Data Flow Diagram (DFD) is a graphical representation that maps out the movement and transformation of data within a system. For the Asset Management Portal, the DFD provides a bird's-eye view of how users interact with the portal, how data flows between processes and databases, and how the system responds to input through actions like approvals, updates, and job triggers.

This visualization helps stakeholders—from developers to decision-makers—understand the full lifecycle of asset-related information.

Key Components Illustrated in the DFD

User Actions

- **Employee Initiation**: Employees begin the process by submitting asset requests through the portal interface.
- **Manager Approval**: Asset requests are routed to respective managers for review and approval, forming a critical decision-making node in the flow.

Data Interactions

- **Inventory Updates**: Once an asset is approved or returned, the DFD shows how the inventory database reflects changes in real time.
- **Data Stores**: Represent repositories such as request logs, approval history, and asset status databases.

System Processes

- **Scheduled Jobs**: Includes automated maintenance alerts, calibration schedules, and notification systems based on asset type and usage history.
- **UI Actions**: The user interface links direct user input to backend processing, ensuring responsiveness and transparency.

Benefits of Using DFDs in Development

- **Improved System Design**: Provides clear visualization of inputs, processes, outputs, and data repositories—making architecture planning more efficient.
- **Workflow Optimization**: Helps detect and troubleshoot bottlenecks and redundant steps in request-handling or inventory updates.

- **Cross-Team Communication**: Bridges the gap between technical and non-technical stakeholders with an intuitive and shared understanding of process flows.
- **Testing & Reporting Enhancements**:
    - **Testing**: Clarifies where automated and manual test cases should be implemented across the process flow.
    - **Reporting**: Highlights data aggregation points for analytics, helping with asset utilization and performance tracking.