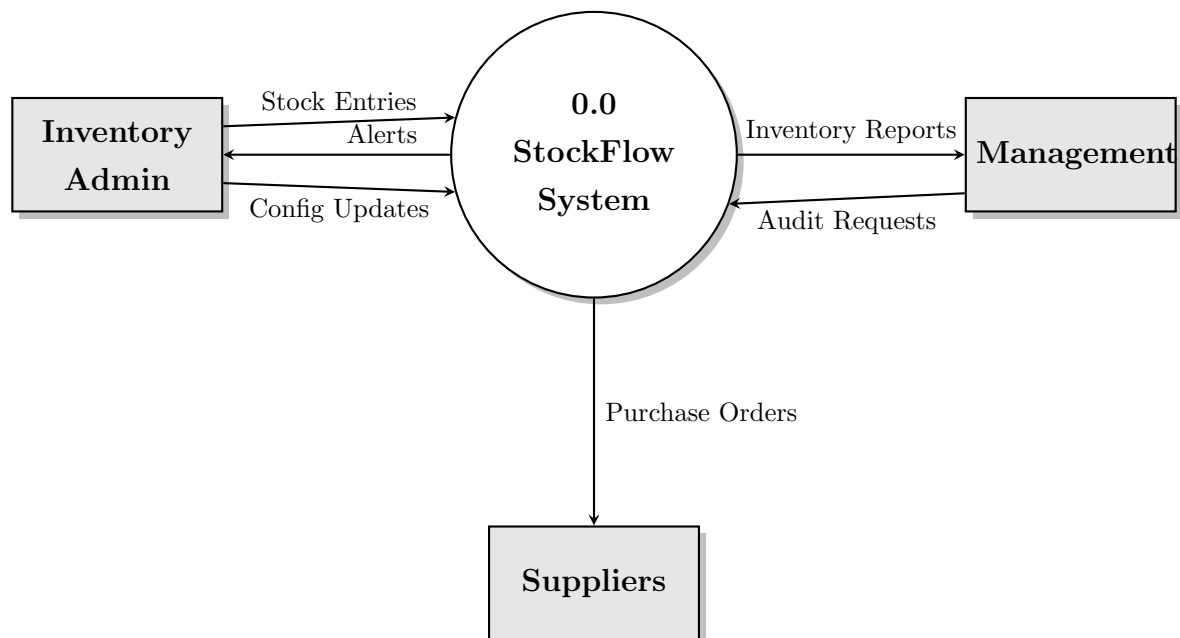


# DATA FLOW DIAGRAMS (DFD)

## StockFlow: Enterprise Inventory Management System

### 1 1. DFD Level 0: Context Diagram

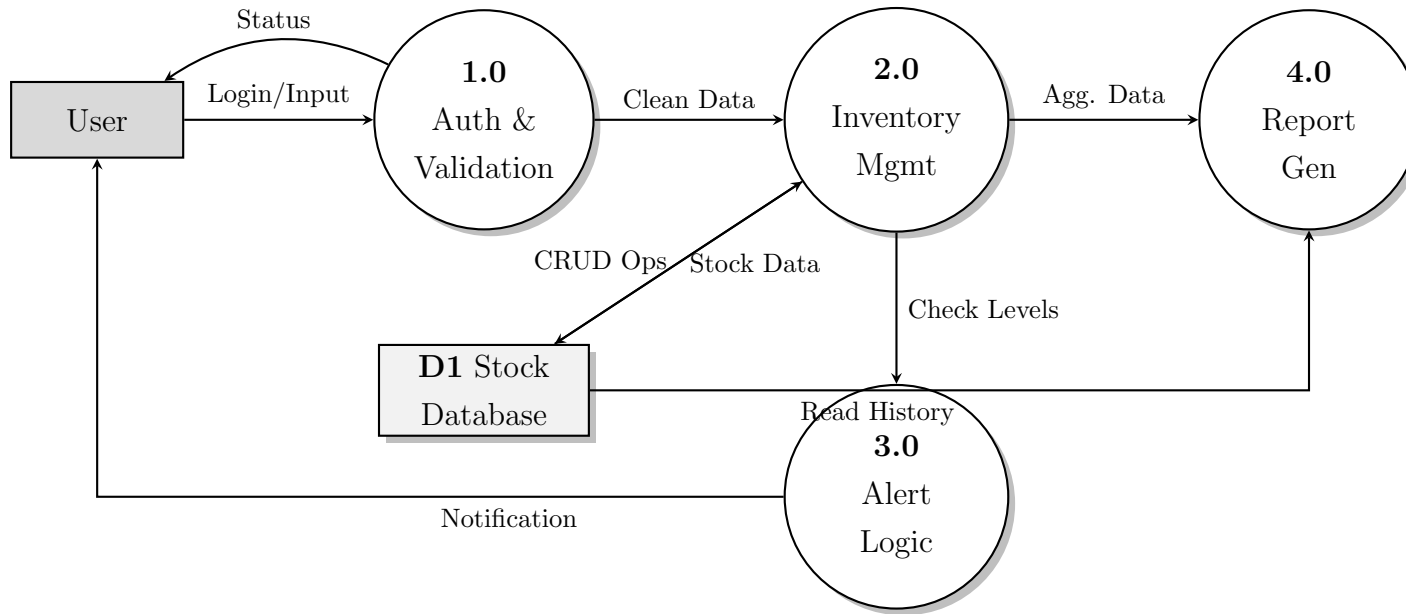
The Context Diagram represents the entire "StockFlow" system as a single abstract process, interacting with external entities. It defines the system's boundary and scope within the operational environment.



**System Boundary Description:** The Inventory Admin acts as the primary data source, providing raw stock information and receiving real-time alerts. Management functions as a data consumer, utilizing aggregated reports for strategic decision-making. The system also interfaces with Suppliers to automate re-ordering processes when thresholds are breached.

## 2 2. DFD Level 1: Functional Decomposition

Level 1 expands the single system node into its constituent functional subprocesses, revealing the internal data processing logic and storage interactions.



### Process Descriptions:

- **1.0 Authentication & Validation:** This process acts as the gateway, ensuring only authorized personnel access the system. It also performs input sanitization (e.g., verifying price formats, non-negative quantities) before data reaches core logic.
- **2.0 Inventory Management:** The central engine handling the Create, Read, Update, and Delete (CRUD) operations. It synchronizes the transient application state with the persistent storage.
- **3.0 Alert Logic:** A background monitoring process that continuously compares current stock quantities against pre-defined safety thresholds. It triggers interrupts/notifications to the user interface when low-stock conditions are met.
- **4.0 Report Generation:** Aggregates raw transactional data into visual formats (charts, summary tables) for the dashboard view.