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| RAZDA Co. | | |
| **Filename: [inventory\_manager.py]** | | |
| **Summary***:*  Manages inventory levels of products, including adding, removing, setting specific stock levels, and batch updates. Tracks stock changes for audit, triggers notifications for low stock, and manages restock alerts. | | |
| ***Processes*** | | |
| * **Database Connection:** | **Establishes connection to Razda’s MySQL database for accessing product and stock tables (connect\_db) and logs connection status.** | |
| * **Adding and Removing Stock:** | **Adds or removes stock quantities based on input (add\_stock and remove\_stock). Logs each update and checks for low stock to notify admin when necessary.** | |
| * **Setting Stock Level:** | **Sets product stock levels to a specific quantity, logs the change, updates inventory status, and triggers low stock check if required (set\_stock).** | |
| * **Check Low Stock and Sending Alerts:** | **Compares stock levels against threshold values. Sends email alerts via notification\_manager when stock falls below threshold (check\_low\_stock).** | |
| * **Logging Stock Changes for Audit:** | **Logs each stock change in stock\_history table, capturing product ID, change quantity, action, and timestamp for audit tracking (log\_stock\_change).** | |
| * **Batch Stock Updates:** | **Allows stock updates for multiple products at once, logs each change, and performs the updates in a single database transaction (batch\_update\_stock).** | |
| **Files it Gets Information From:** | | **Files it Sends too:** |
| * **inventory\_status.py**: Calls update\_inventory\_status to ensure stock levels reflect current inventory status. | * **MySQL Database (razda\_market\_db)**: Updates inventory counts and logs stock changes within product and stock history tables. | |
| * **notification\_manager.py**: Utilizes send\_notification to trigger email alerts for low stock or critical stock status updates. | * **stock\_history (Database Table)**: Logs every inventory change for auditing, including additions, removals, and batch updates. | |
| **Expected input into file:** | | **Expected output from file:** |
| * **Product IDs and Stock Quantities**: Product IDs and quantities needed for stock adjustments, including batch updates. * **Low Stock Threshold and Alert Emails**: Configurations for minimum stock levels and email for low stock alerts. * **Database Connection Parameters**: Environment configurations for MySQL database access. | | * - **Updated Inventory Levels**: Reflects changes in inventory counts, including additions, removals, and specific stock settings * **Low Stock Alerts**: Sends notifications to specified email addresses when stock falls below the threshold. * **Logs of All Stock Operations**: Maintains records of every stock change in the stock\_history table for tracking and auditing. |
| **Things that need to be taking place:** | | |
| |  | | --- | |  | | **- Continuous Database Access: Stable connection to the MySQL database for executing inventory updates and logging stock changes.** | |  |  | | --- | | **- Accurate Stock Adjustment and Logging: Proper stock tracking to ensure real-time accuracy, including low stock alerts and audit records.** |  |  | | --- | | **- Threshold-Based Notifications: Configurable alerts for low stock levels, prompting restocking as needed to prevent stockouts.** |  |  | | --- | | **- Batch Processing Capability: Ability to handle multiple stock updates efficiently through batch processing.** | | | |
| Edit log (update each time you make changes to doc or file). | | |
| | **Possible Enhancements:** | | --- |  |  | | --- | | - **Automated Restock Requests**: Automatically generate and send restock requests when inventory reaches critical levels, with vendor-specific notifications. |  |  | | --- | | - **Enhanced Inventory Reporting**: Create detailed reports or dashboards summarizing stock status, low stock alerts, and restock requirements for admins. |  |  | | --- | | - **Inventory Forecasting**: Implement predictive analysis to forecast stock needs based on historical data, seasonality, and demand trends. |  |  | | --- | | - **Multi-Warehouse Support**: Allow tracking across multiple warehouses, enabling regional stock monitoring and distribution flexibility. | | | |
| * Oliver Smith (Razda Admin) Nov 8, 2024: | | |