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| RAZDA Co. | | |
| **Filename: [market\_product\_management.py]** | | |
| **Summary***:*  Manages product operations for admins, including adding, editing, deleting, and bulk inventory updates. Provides capabilities to validate image formats, apply category selection, and forecast inventory for products. | | |
| ***Processes*** | | |
| * **Add Product:** | **Validates image format, applies category selection, and creates a new product record in the database. Logs successful or failed product additions by the admin (add\_product).** | |
| * **Edit Product:** | **Allows admin to update specific product fields selectively, including price, inventory count, and description. Validates input and logs updates (edit\_product).** | |
| * **Delete Product:** | **Removes product record from the database based on product ID and logs the deletion action (delete\_product).** | |
| * **View Products:** | **Retrieves products managed by the admin, with optional status filtering (e.g., ‘Active’, ‘Inactive’), and logs each viewing action (view\_products).** | |
| * **Bulk Inventory Update:** | **Allows admin to perform batch inventory updates for multiple products, committing changes in a single transaction. Logs all batch updates (bulk\_update\_inventory).** | |
| * **Forecast Product Sales:** | **Provides a sales forecast for a specific product based on historical data, helping the admin anticipate demand. Logs forecast retrievals (forecast\_product\_sales).** | |
| **Files it Gets Information From:** | | **Files it Sends too:** |
| * **product\_creation.py**: Handles the initial creation of a new product, passing product details for insertion into the database. | * **Database (razda\_market\_db)**: Stores product details, manages inventory, and records product creation, updates, and deletions. | |
| * **product\_categories.py**: Retrieves available categories for categorizing products during creation and editing. | * **Logs (market\_product\_management.log)**: Records actions such as product creation, updates, deletions, and forecast retrieval for auditing purposes. | |
| * **image\_validation.py**: Validates image formats for new and updated products, allowing only .jpg and .png formats. |  | |
| * **inventory\_forecast.py**: Generates inventory forecasts for specific products based on sales trends and historical data. |  | |
| **Expected input into file:** | | **Expected output from file:** |
| * **Admin ID**: Used to identify which admin is making changes, ensuring actions are recorded and restricted to authorized admins. * **Product Details**: Inputs such as name, description, price, category ID, inventory count, and image path for creating or updating products. * **Optional Filters**: Status filters for viewing products with specific criteria, such as ‘Active’ or ‘Inactive’. | | * **Operation Status**: Returns success or failure status for actions like adding, editing, and deleting products. * **Logs**: Detailed logs are generated for actions taken by the admin, including product addition, deletion, and updates. * **Product List**: Retrieves and displays products managed by the admin, based on applied filters. |
| **Things that need to be taking place:** | | |
| |  | | --- | | **- Secure Admin Access: Ensures only authorized admins can add, edit, or delete products, with session checks to confirm admin identity.** |  |  | | --- | | **- Accurate Data Entry: Validates inputs (like image format, category ID, price) to prevent erroneous data entry.** |  |  | | --- | | **- Comprehensive Logging: Records every action (addition, deletion, update) to provide an audit trail of product-related actions by admins.** |  |  | | --- | | **- Efficiency in Batch Operations: Supports efficient batch updates for inventory levels, reducing the time and queries needed for adjustments.** |  |  | | --- | |  | | | |
| Edit log (update each time you make changes to doc or file). | | |
| | **Possible Enhancements:** | | --- |  |  | | --- | | - **Image Optimization**: Automatically resize and optimize images before adding to the database to reduce file size and improve loading speed. |  |  | | --- | | - **Product Versioning**: Implement version control for product details to track changes and revert to previous versions if needed. |  |  | | --- | | - **Advanced Forecasting Metrics**: Integrate external forecasting models to improve sales prediction accuracy based on market trends and seasonal data. |  |  | | --- | | - **Automatic Low Stock Alerts**: Send alerts to admins when product inventory falls below a critical threshold to prevent stockouts. | | | |
| * Oliver Smith (Razda Admin) Nov 8, 2024: | | |