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| RAZDA Co. | | |
| **Filename: [api\_integration\_handler.py]** | | |
| **Summary***:*  This file serves as the primary handler for third-party API integrations, allowing Razda Market to efficiently integrate with multiple factory APIs without modifying core application code. It manages API client initialization, order dispatching, factory selection, error handling, and update polling. By centralizing API interactions, it streamlines integration with different factories and enhances scalability and maintainability. | | |
| ***Processes*** | | |
| * **Initialize API Clients** | **Initializes API clients for each factory using data from environment variables.** | |
| * **Select Factory for Order** | **Chooses the most suitable factory for each order based on specific criteria defined in select\_optimal\_factory.** | |
| * **Send Order to Factory** | **Sends order data to the chosen factory's API, handling response to confirm success or log failure.** | |
| * **Handle Factory Updates** | **Polls factory APIs for order updates, such as status changes, and initiates further processing based on the updates received.** | |
| * **Process Update from Factory** | **Processes specific updates from factories, determining actions based on status changes (e.g., completed, failed) and logs actions.** | |
| * **Mark Order as Completed** | **Marks an order as completed within the system, including potential database updates and notifications.** | |
| **Files it Gets Information From:** | | **Files it Sends too:** |
| * **Environment Variables**: Holds factory API configuration, e.g., FACTORY\_A\_URL, FACTORY\_A\_API\_KEY. | * **Database/API Logs**: Updates order statuses, error messages, and retry counts for tracking. | |
| * **factory\_api\_integration.py**: Manages API requests with various factories. | * **order\_automation.py**: For processing successful orders and handling failures (e.g., process\_order, handle\_failed\_order). | |
| * **order\_data**: Includes customer, product, and delivery details to send to factories. | * **factory\_selection.py**: Provides the factory selection process to match each order with the best factory based on criteria like cost or location. | |
| * **Factory API Responses: Receives status updates and error data from factory integrations.** | * **Error Handling**: Uses APIErrorHandler for retries and escalations when maximum retries are reached. | |
| **Expected input into file:** | | **Expected output from file:** |
| * **Factory Configuration**: API URLs, keys, and settings for each factory. * **Order Data**: Input order data (order\_id, product\_details, etc.) from the main application. * **Factory API Responses**: Factory order responses, such as success, pending, failed, or completed statuses. * **Update Polling Data**: Factory status updates, received at defined intervals for real-time order tracking. | | * **Order Processing Logs**: Logs success or failure of order submissions, errors, and retries in api\_integration\_handler.log. * **Order Status Updates**: Updates the order system based on response data from factories. * **Error Handling Reports**: Details of error handling and retry status, logged to trace retry counts. * **Escalation Triggers**: Initiates alerts if order processing encounters unrecoverable errors after retries. |
| **Things that need to be taking place:** | | |
| |  | | --- | | **- Client Initialization: Each factory requires separate initialization with environment-specific URLs and keys.** |  |  | | --- | | **- Error Handling and Logging: Handle and log all errors, especially for API failures, to avoid silent failures and ensure visibility.** |  |  | | --- | | **- Retries on Failure: Use a retry mechanism for orders that fail to process initially, with a cap on retries to prevent endless loops.** |  |  | | --- | | **- Factory Selection Criteria: Selection should be optimized based on specific criteria (cost, speed, availability).** |  |  | | --- | | **- Update Management: Ensure timely update checks with each factory to keep the order statuses current, including completing, retrying, or escalating when necessary.** |  |  | | --- | |  | | | |
| Edit log (update each time you make changes to doc or file). | | |
| * Oliver Smith (Razda Admin) Nov 8, 2024: | | |