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| RAZDA Co. | | |
| **Filename: []** | | |
| **Summary***:*  Implements factory selection based on weighted criteria (pricing, availability, capacity) for product orders. Provides mechanisms for factory selection, fallback options, criteria weight updates, and batch processing for multiple products. | | |
| ***Processes*** | | |
| * **Select Optimal Factory** | **select\_optimal\_factory selects the best factory for a given product by calculating weighted scores for criteria. It chooses the factory with the highest score if it meets the minimum threshold, otherwise returns the fallback.** | |
| * **Calculate Factory Scores** | **calculate\_factory\_scores computes scores for each factory based on weighted criteria like pricing, availability, and capacity, using normalization with maximum values.** | |
| * **Get Max Criteria Value** | **get\_max\_criteria\_values finds the maximum value for each criterion to normalize factory scores, ensuring fair comparisons.** | |
| * **Get Factories** | **get\_factories fetches a list of available factories and their scores from an API, logging the retrieved data.** | |
| * **Update Criteria Weights** | **update\_criteria\_weights allows dynamic adjustment of weights for each selection criterion, logging each change.** | |
| * **Log Selection Summary** | **log\_selection\_summary logs a summary of the factory selection decision, including the selected factory's ID and details, for auditing purposes.** | |
| * **Fallback Factory Selection** | **fallback\_factory\_selection provides a fallback selection if no factory meets the selection threshold, prioritizing availability scores.** | |
| * **Select Factory with Batch** | **select\_factory\_with\_batch processes factory selection for multiple product IDs in batch, using optimal selection and fallback mechanisms for each.** | |
| **Files it Gets Information From:** | | **Files it Sends too:** |
| * **Environment Variables**: For API URL, key, criteria weights, and threshold. | * **Factory API**: Fetches factory data with criteria scores for selection. | |
| * **Logs Directory**: Logs activities and results in factory\_selection.log. |  | |
| **Expected input into file:** | | **Expected output from file:** |
| * **Product ID**: Identifies the product for factory selection * **Batch Product IDs**: List of multiple product IDs for batch selection. | | * **Selected Factory Data**: Returns a dictionary of the chosen factory’s details. * **Batch Selection Summary**: Logs the results of batch selection for each product ID. * **Selection Summary Log**: Summary of factory selection decisions for auditing and record-keeping. |
| **Things that need to be taking place:** | | |
| |  | | --- | | **- Criteria Normalization: Ensure get\_max\_criteria\_values accurately reflects factory criteria for balanced scoring.** |  |  | | --- | | **- Threshold Adjustments: Adjust MIN\_SELECTION\_THRESHOLD periodically based on data to ensure it aligns with business requirements and factory availability.** |  |  | | --- | | **- Batch Efficiency: Monitor the performance of select\_factory\_with\_batch for large batches, refining as needed to avoid performance degradation.** |  |  | | --- | | **- Fallback Logic: Ensure fallback mechanism prioritizes critical criteria like availability to handle cases where factories do not meet initial thresholds.** |  |  | | --- | | **- Weight Configurability: Regularly review DEFAULT\_CRITERIA\_WEIGHTS to ensure they align with business priorities, and adjust through update\_criteria\_weights if necessary.** |  |  | | --- | |  | | | |
| Edit log (update each time you make changes to doc or file). | | |
| * Oliver Smith (Razda Admin) Nov 8, 2024: | | |