Case 2: Spark innovation with a Wal-ket basket

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Samruddhi Padture
Tejashree Date
Nehal Dhande

Background

1. We have a CSV that contains Product Ids mapped to their Description, Aisle Number and Shelf Number
2. We are using two algorithms for optimization:

- Levenshtein for Clustering of orders
- Dijkstra’s for path optimization

Part 1: Extract the Aisle Numbers

1) For every user(json input) extract the Order Number and the list of Product Ids
2) For each productId map it's aisle number
3) Obtain a string of all aisles for one order
4) Collect a list of such strings together for all orders received

Part 2: Batch the orders using Levenshtein distance

1. Iterate through the aisles list (from Part 1) and calculate levenshtein distance (edit distance) between the aisles.

2. Our goal will be to put together the orders whose products are in the same aisle to save the associate's time.

3. Produce the corresponding shelves list which will feed as an input to the third step: finding an optimal path.

Part 3 : Find the optimal path using Dijkstra's Algorithm

1. Extract pixel coordinates of each shelf.
2. Apply Dijkstra's Algorithm from the start location.
3. Get the path to optimize the collection time.
4. Plot the path for each batch.
5. Display Path.