**Milk Basket Insights**

**Summary:**

Objective of the project is to deep dive and generate insights that are easy to implement yet generates high business values. The deep dive revolves around how we can leverage the subscriptions to increase the average order value, repeat purchases etc.

**Tech Stack:**

* Python
* Jupyter Notebook
* Excel

**Design/Technical Architecture:**

Approach is straight forward, data will be aggregated at levels where we can get the proper comparison between desired state (subscription) and non-desired state (non-subscriptions) to see how each of them par with each other. Next step would be to see what can be changed to get the desired state.

**Example:** Noticed that the subscribers are more profitable in terms of overall revenue than non-subscribers but subscribers tend to subscribe to the lower price products. The recommendation can be to incentivize the customers to subscribe for higher end products as well.

Jupyter Notebook -> Data Deep dive in Python -> Excel for Graphs and comparison

->Recommendations based on profitability/desirability

**Part2 KNN Recommendation Engine:**

Built a simple Recommendation engine using KNN based on Cosine similarity metric. Rolled out the customer and product purchase counts and over layered with rest of the top 100 products (to simplify and reduce computation) based on purchases. The Results generate top 10 nearest neighbours with respect to the customer and product. The cluster to be refreshed over time as the data changes the cosine similarity metrics vary between products, can schedule a periodic monthly/weekly refresh.

**Feasibility:**

One of the objective of the solution is to come up with recommendations that are profitable and feasible to implement.

Recommendation Engine is simple KNN and can be refreshed over period of time to update the new similarities. Only constraint using local system the recommendation engine can’t be scaled to all products.