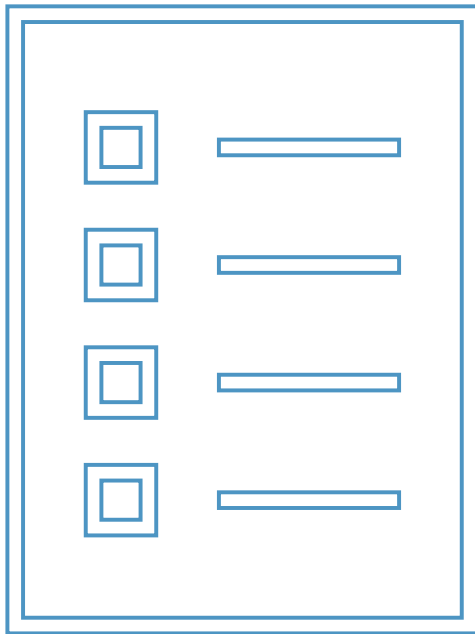




ANALYSIS ON RETAIL TRANSACTIONS

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AGENDA OF ITEMS



1. PROJECT GOAL
2. METHODOLOGY
3. DATA EXPLORATION
4. ANALYSIS & RESULT
5. IMPLICATION

1. PROJECT GOAL

Conduct

Conduct analysis to understand customer buying habits

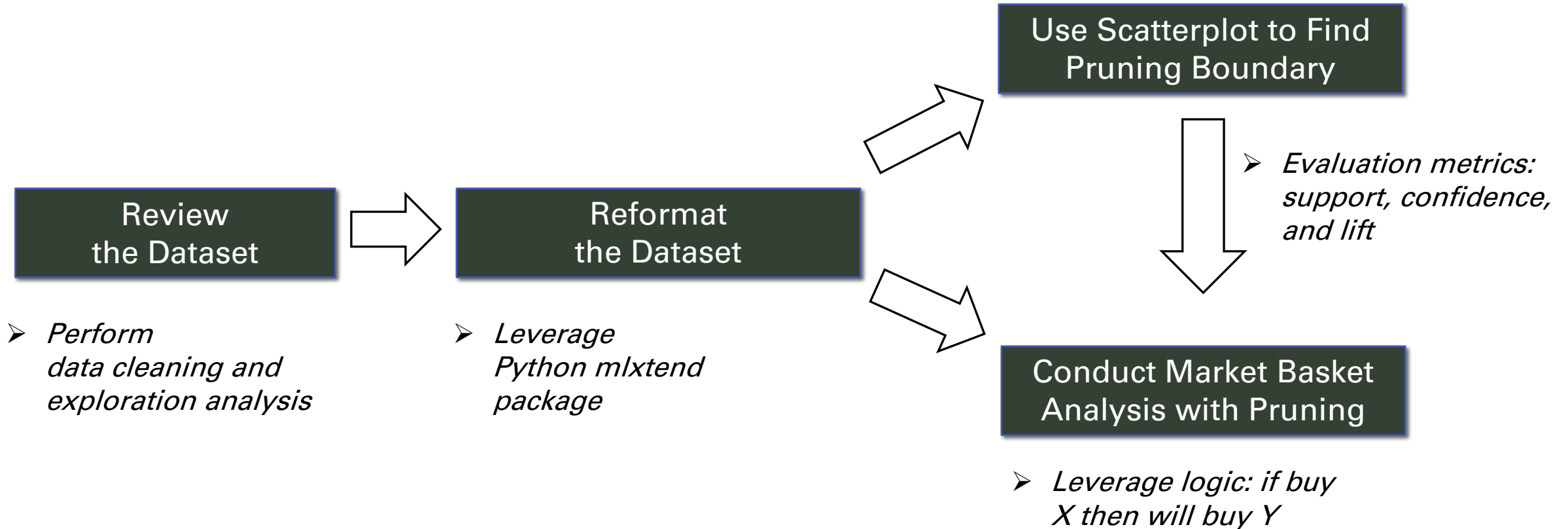
Identify

Identify “Most-frequently-bought-together” itemset

Provide

Provide strategic recommendations to help the retailer potentially increase customer’ basket value

2. METHODOLOGY



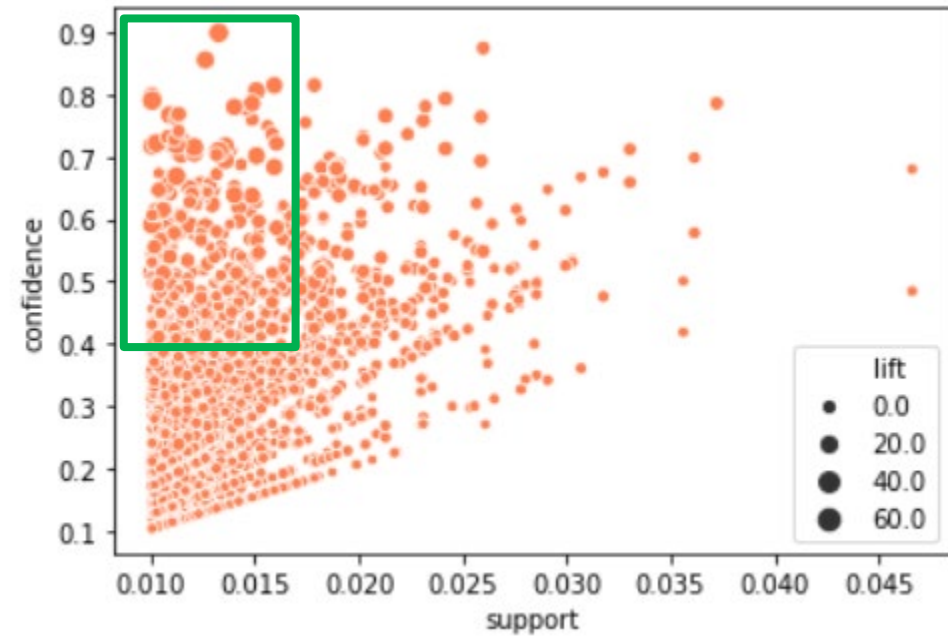
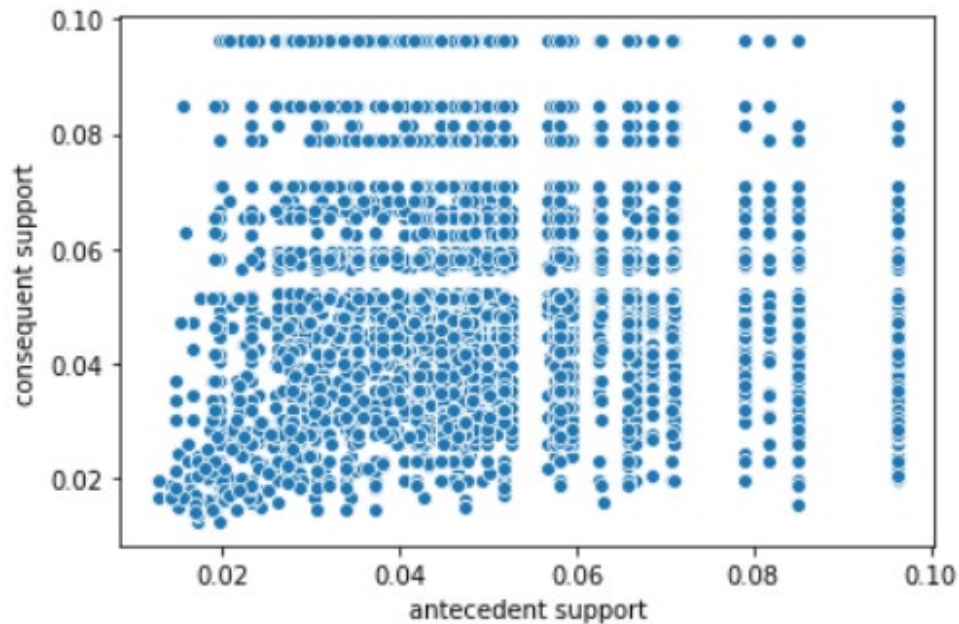
3. DATA EXPLORATION

About The Dataset

- 227,760 rows and 3 columns
- Column headers: "*InvoiceNo, StockCode, Description*"
- 9353 unique invoices & 3343 unique stock codes
- 356 empty values in *Description* -> *Would be dropped from the analysis*
- On average, a customer bought 12 items

4. ANALYSIS & RESULT

- Rules are established to identify products that are bought together. Useful rules are determined by pruning. Leveraging scatterplot allows narrowing boundaries for pruning metrics.
- The plots give an overview of the distribution of support and confidence. Pruning by support should be at max of 0.10. There are a few high-confidence rules in the top-left corner, and high-lift rules are located close to the minimum support threshold



4. ANALYSIS & RESULT

- Apply multiple filters (support > 0.025, confidence > 0.6, lift >1) results in 15 rules.
- The results show that customers often buy items of different color or designs.

antecedents		consequents
154	(ALARM CLOCK BAKELIKE GREEN)	(ALARM CLOCK BAKELIKE RED)
155	(ALARM CLOCK BAKELIKE RED)	(ALARM CLOCK BAKELIKE GREEN)
579	(GARDENERS KNEELING PAD CUP OF TEA)	(GARDENERS KNEELING PAD KEEP CALM)
740	(GREEN REGENCY TEACUP AND SAUCER)	(ROSES REGENCY TEACUP AND SAUCER)
741	(ROSES REGENCY TEACUP AND SAUCER)	(GREEN REGENCY TEACUP AND SAUCER)
759	(HAND WARMER BIRD DESIGN)	(HAND WARMER OWL DESIGN)
780	(HAND WARMER SCOTTY DOG DESIGN)	(HAND WARMER OWL DESIGN)
1091	(JUMBO BAG VINTAGE CHRISTMAS)	(JUMBO BAG 50'S CHRISTMAS)
1356	(JUMBO BAG PINK POLKADOT)	(JUMBO BAG RED RETROSPOT)
1426	(JUMBO STORAGE BAG SUKI)	(JUMBO BAG RED RETROSPOT)
2068	(PAPER CHAIN KIT VINTAGE CHRISTMAS)	(PAPER CHAIN KIT 50'S CHRISTMAS)
2614	(WOODEN PICTURE FRAME WHITE FINISH)	(WOODEN FRAME ANTIQUE WHITE)
2616	(WOODEN HEART CHRISTMAS SCANDINAVIAN)	(WOODEN STAR CHRISTMAS SCANDINAVIAN)
2617	(WOODEN STAR CHRISTMAS SCANDINAVIAN)	(WOODEN HEART CHRISTMAS SCANDINAVIAN)
2622	(WOODEN TREE CHRISTMAS SCANDINAVIAN)	(WOODEN STAR CHRISTMAS SCANDINAVIAN)

4. IMPLICATION

Customer Insight

- Analysis shows strong customer preference for different colors, styles, and designs of the same product line



Recommendation

- **PRODUCT:**
 - Create product combos to attract buyers
- **STORE PLACEMENT:**
 - Display same product designs near each other and at customer eye-level
- **ONLINE MARKETING CAMPAIGN:**
 - Feature the product variety explicitly on landing page as well as ad copy

THANK YOU

APPENDIX

Tool:



Packages:

PANDAS – MLXTEND - SEABORN