Project Iteration #2

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To find a pattern between different items purchased based on the items purchased together using ***Association Rule Mining***. Suggesting specific items from the pattern using ***Sentiment Analysis*** and ***Segmentation*** based on age groups.

Expected Outcome: Dashboard showing links between items purchased together regularly and suggesting specific products for the links shown. The dashboard must be intuitive and accessible for users without technical backgrounds, enabling effortless navigation and interpretation of insights.

Develop an analytical system using association rule mining to identify items frequently purchased together, enhanced with sentiment analysis of customer reviews and age-based segmentation to generate targeted product recommendations.

An interactive dashboard displaying product association networks, key metrics (support, confidence, lift), age-specific purchasing patterns, and sentiment-filtered recommendations for different customer segments.

PHASE	DELIVERABLE
Phase 1	Project Plan, Team Roles and Dataset Identification
Phase 2	Data Pre-processing and Exploratory Data Analysis
Phase 3	Model Selection, Training, And Evaluation
Phase 4	Visualization Dashboard and Final Report Preparation

WEEK	DELIVERABLE
1 – 2	Dataset Selection and Preprocessing
3 – 4	Model Building and Sentiment Classification
5	Visualization and Insights Generation
6	Report Finalization and Presentation Submission

As a group, all are proficient in data preprocessing, visualization, and programming **(Python and SQL)** leveraging individual proficiency wherever relevant for best possible outcome. Throughout the project, knowledge about machine models and how to optimize them will be strengthened.

The goal is to create the project using free and open-source datasets. 1/3 essential datasets finalized from Kaggle.

The team will adopt a **self-managed, accountability-driven approach** where each member independently research assigned components, then collaborates to determine optimal solutions. This creates a continuous feedback loop where members share knowledge and insights gained during individual research, fostering collective growth and informed decision-making.

Leveraging the team's existing proficiency in **SQL** and **Python** for data processing, analysis, and algorithm implementation. **Tableau** has been selected for dashboard development to both meet visualization requirements and enhance the team's proficiency with industry-standard business intelligence tools.

This project serves dual purposes: *delivering a functional analytical system while providing hands-on experience with Tableau, expanding the team's data visualization capabilities beyond their current SQL and Python expertise.*

DS5110 - Final Project

Project Start 9/20/2019

TASK	OWNER	PRIORITY	START	END	% COMPLETE	DONE	EST. HOURS	NOTES
Phase 1						○		
Task 1		HIGH	9/23/2019	9/23/2019	50%	○		
Task 2		MEDIUM	9/23/2019	10/23/2019	100%	✓		
Task 3		LOW	9/23/2019	9/26/2019	30%	○		
						○		
Phase 2						○		
						○		
						○		
						○		
						○		
Phase 3						○		
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Phase 4						○		
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						○		
Phase 1						○		
						○		
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Phase 4						○		
						○		
						○		
						○		
						○		

Figure 1 Excel Progress Tracker

GitHub Repository Link :
https://github.com/siddhi07/E-commerce-Product-Recommendations-and-Pattern-Analysis.
(Repository contains the project report, Excel tracker, and a README file summarizing objectives, dataset, and methodologies)