**Task 2: Lookalike Model**

**Model Accuracy and Logic:** The lookalike model leverages both customer profile data and transaction history to compute similarity, using cosine similarity on a combined feature set of scaled numeric customer attributes and a vectorized representation of product purchases. This approach captures both behavioral (recency, frequency of purchases) and demographic (age, region) aspects of the customer profile. However, accuracy could be further enhanced by considering more complex algorithms like collaborative filtering or even deep learning methods for more nuanced similarity detection, especially if dealing with sparse or high-dimensional data.

**Quality of Recommendations and Similarity Scores:** The recommendations are based on a straightforward similarity metric which should result in sensible lookalikes for customers with similar buying patterns and demographic profiles. However, the quality of these recommendations depends on the diversity and richness of the data. The similarity scores give a quantifiable measure of how alike customers are, but the model might benefit from additional validation steps or by incorporating feedback loops to refine the model over time. For instance, checking if recommended lookalikes lead to successful outcomes in marketing campaigns or customer engagement could serve as a practical measure of recommendation quality.

[Ripan\_Purkait\_Lookalike.csv](https://drive.google.com/file/d/1YUTWrgViJUOCyoYvNuLxDIXgwoN448QT/view?usp=sharing)