

Project Summary: Customer Segmentation for Marketing Offer Strategy

Executive Summary (One-Page Overview)

This project focuses on segmenting travel platform users to inform personalized marketing offers. Using behavioral and transactional data, we applied **K-Means clustering** to group users based on session activity, bookings, spending, and discount sensitivity.

Three user segments were identified:

- **Cluster 1 – Heavy Spenders & Frequent Flyers**
Highest value users with ~\$65K spend and high engagement. Not sensitive to discounts.
→ *Recommended Offer:* 1-Night Free Hotel with Flight
- **Cluster 0 – Moderate Travelers**
Average bookings and moderate spend (~\$17K), many with families.
→ *Recommended Offer:* Free Checked Bag
- **Cluster 2 – Light Users & Budget-Conscious**
Low activity and high price sensitivity.
→ *Recommended Offer:* Exclusive Discounts or No Cancellation Fees

Business Impact:

Targeted offers aligned with user behavior can drive revenue, retention, and engagement. Segment-specific strategies allow for smarter allocation of marketing resources.

Key Stats:

- Algorithm: K-Means (Silhouette Score: 0.29)
 - Tools: SQL (data prep), Python (modeling), Seaborn (visuals), Streamlit/Tableau (planned dashboard)
 - Data: ~23 features from user behavior, spending, and discount usage
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