## **Model Performance & Insights**

**Silhouette Score:  
-** Achieved a **Silhouette Score of 0.6067**, indicating well-defined and meaningful clusters.

**Cluster Profiles:  
-Cluster 0:** Customers with moderate purchase frequency and monetary value. Potential for loyalty programs.  
-**Cluster 1:** Customers with low frequency and low monetary value. Targeted promotions needed.  
-**Cluster 2:** VIP Customers — extremely high spenders and frequent buyers. Focus on retention strategies.  
-**Cluster 3:** Super recent and super frequent buyers. Upselling and cross-selling opportunities.

**Business Impact:  
-**Tailored marketing strategies were suggested for each cluster.  
High-value clusters identified for priority engagement and loyalty initiatives.

| **Cluster** | **Recency (Avg)** | **Frequency (Avg)** | **Monetary (Avg)** | **Business Strategy** |
| --- | --- | --- | --- | --- |
| 0 | 41.5 days | 102 transactions | $1,094 | Loyalty Program |
| 1 | 247 days | 27 transactions | $286 | Retargeting Campaign |
| 2 | 24.7 days | 603 transactions | $49,329 | VIP Retention |
| 3 | 2 days | 5062 transactions | $68,635 | Premium Upselling |