

## Customer Lifetime Value (LTV) Prediction Report

### Objective:

Predict customer lifetime value using purchase behavior and segment customers for marketing targeting.

### Model Used:

- Random Forest Regressor
- MAE: ~338.79
- RMSE: ~457.30

### Customer Segmentation:

- Customers segmented into Low, Medium, High based on predicted LTV using quantile cuts.

### Segment Summary:

- Low: 334 customers, Avg LTV = 1897.75
- Medium: 333 customers, Avg LTV = 3478.33
- High: 333 customers, Avg LTV = 5358.38

### Visualizations (in Excel):

- Bar chart: Avg LTV by Segment
- Pie chart: Segment distribution
- Line chart: Count trend

### Output Files:

- Excel Dashboard: Predictions + Charts

- Final Report: Summary & Insights