# Linear Regression Report — E-commerce Dataset

## Objective

Predict the yearly customer spending (USD) for a clothing store (in-person + online services) based on customer session length, time on app, time on website, and membership length.

## Dataset

Rows: 500, Columns: 8

Source: Kaggle — 'Focusing on mobile app or website' dataset (Ecommerce Customers).

## Model Performance

Mean Absolute Error (MAE): 8.558

Root Mean Squared Error (RMSE): 10.482

R² Score: 0.978

Cross-Validated R² Mean: 0.984

## Feature Coefficients

|  |  |
| --- | --- |
| Feature | Coefficient |
| Avg. Session Length | 25.3805 |
| Time on App | 38.5224 |
| Time on Website | 0.3133 |
| Length of Membership | 61.7902 |

## Conclusion

The Linear Regression model explains about 97.8% of the variance in yearly customer spending. Length of Membership has the strongest positive effect, followed by Time on App. This suggests longer memberships and higher app usage strongly drive customer spending.