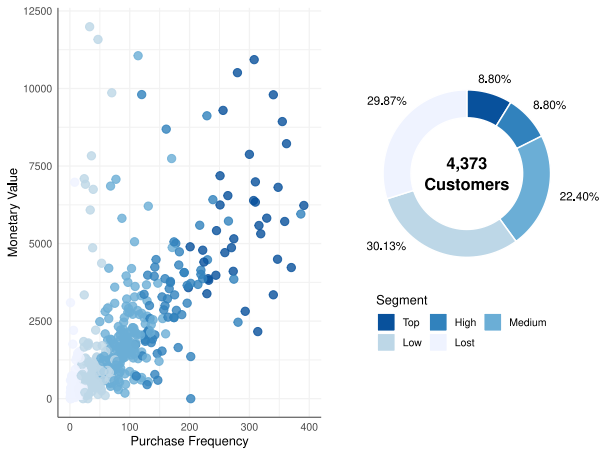


```
SELECT
  DATE(InvoiceDate) AS sale_date,
  ROUND(SUM(Quantity * UnitPrice), 2) AS daily_sales
FROM sales_data
WHERE InvoiceNo NOT LIKE 'C%'
  AND Quantity > 0
  AND UnitPrice > 0
  AND CustomerID IS NOT NULL
  AND InvoiceDate IS NOT NULL
GROUP BY sale_date
ORDER BY sale_date;
```

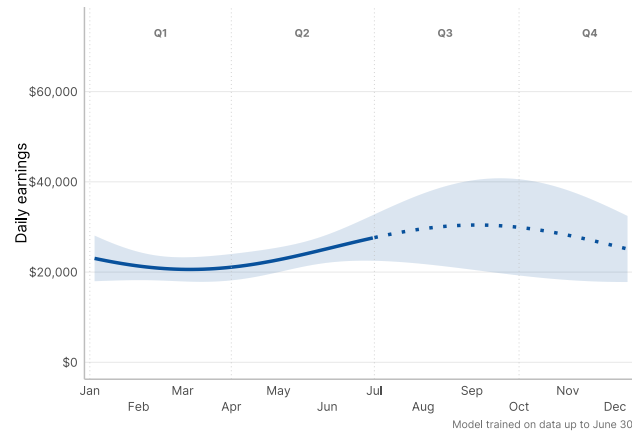
SQL Data Wrangling

This SQL query aggregates valid daily sales while filtering out returns, nulls, and zero values to ensure clean, reliable data for analysis.



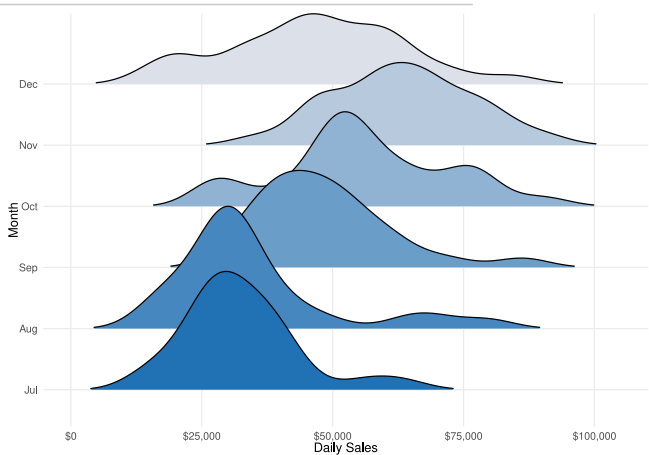
Customer Segmentation (RFM)

Customers are segmented by Recency, Frequency, and Monetary value. The scatterplot shows behavioral clusters, and the donut chart visualizes their proportions.



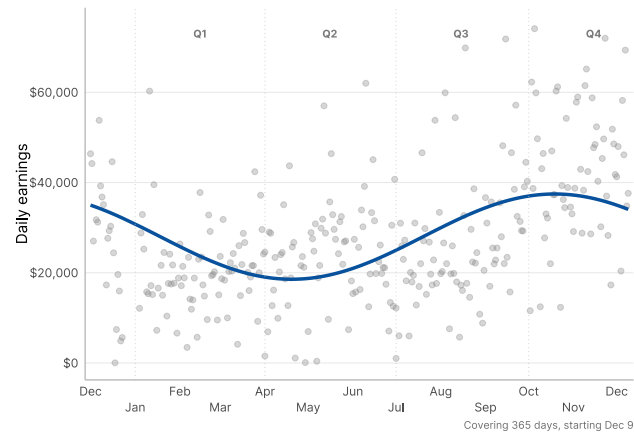
Predictive Modeling & Forecast

A predictive model trained on Q1Q2 data forecasts Q3Q4 sales, providing forward-looking insights for inventory and marketing decisions.



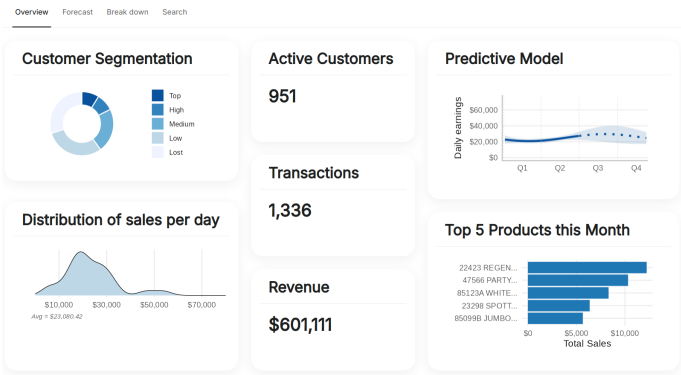
Exploratory Data Analysis (EDA)

The ridge plot reveals monthly sales patterns, showing cyclical behavior and highlighting months with unusual spikes or dips.



Explanatory Modeling

A regression model captures seasonal fluctuations, showing an upward trend during peak months and confirming recurring demand cycles.



Interactive Dashboard

The interactive dashboard combines multiple analyses, enabling stakeholders to explore trends and uncover actionable insights.