

University of Amsterdam

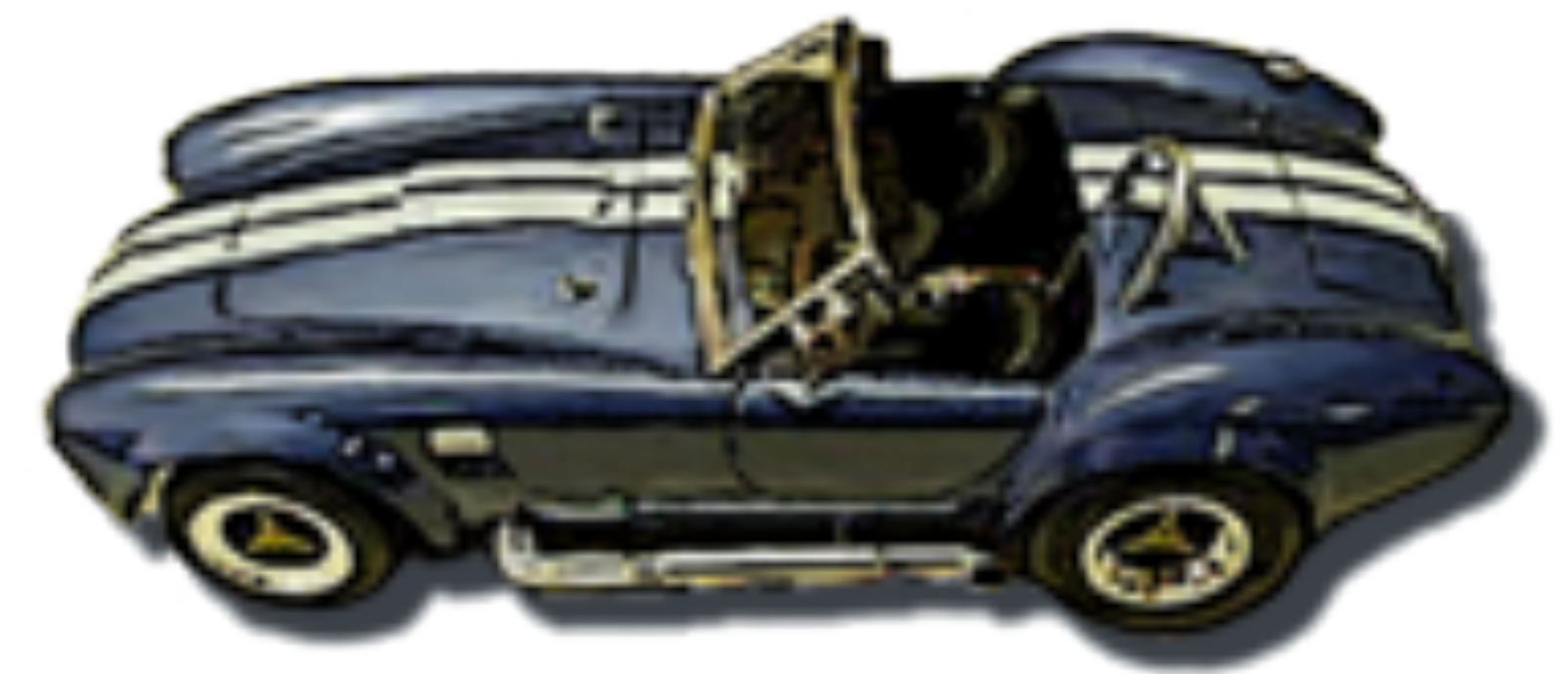
Databases and Data Visualization

December 13, 2024

BI Report

Classic Models Inc.

CLASSIC MODELS



Andrii Dundiaak (14099195)

Domonkos Toth (13567039)

Max Zaslove

Martynas Plėštys

CLASSIC MODELS



Overview

01 Introduction

Analysis of Classic Models Inc. using BIRT dataset

02 Data warehouse

Creation of interactive visualizations using Tableau

03 Balanced Scoreboard

Developing KPIs for Classic Models to measure its performance

04 Dashboard

Focus on key business metrics and insights

01: Introduction

Shortly About Classic Models

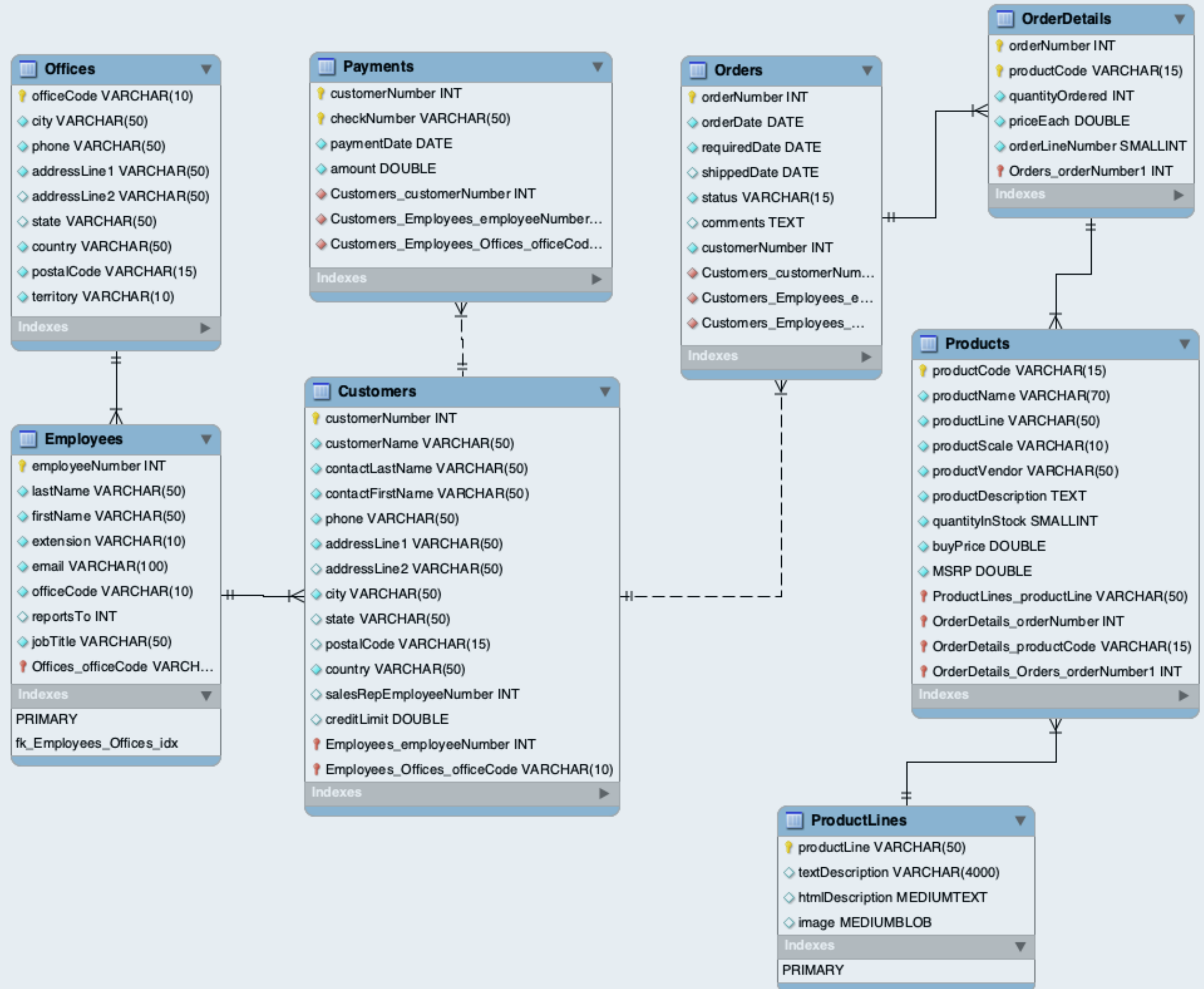
- Global distributor of collectible toy models
- Comprehensive business operations dataset
- International presence with multiple offices
- Diverse product portfolio including classic vehicles on different scales (e.g. 1:18, 1:72 etc.)



OLTP

Online Transaction Processing

- Customer-Centric Structure
- Efficient Order Processing
- Hierarchical Organization
- Product Management
- Data Integrity

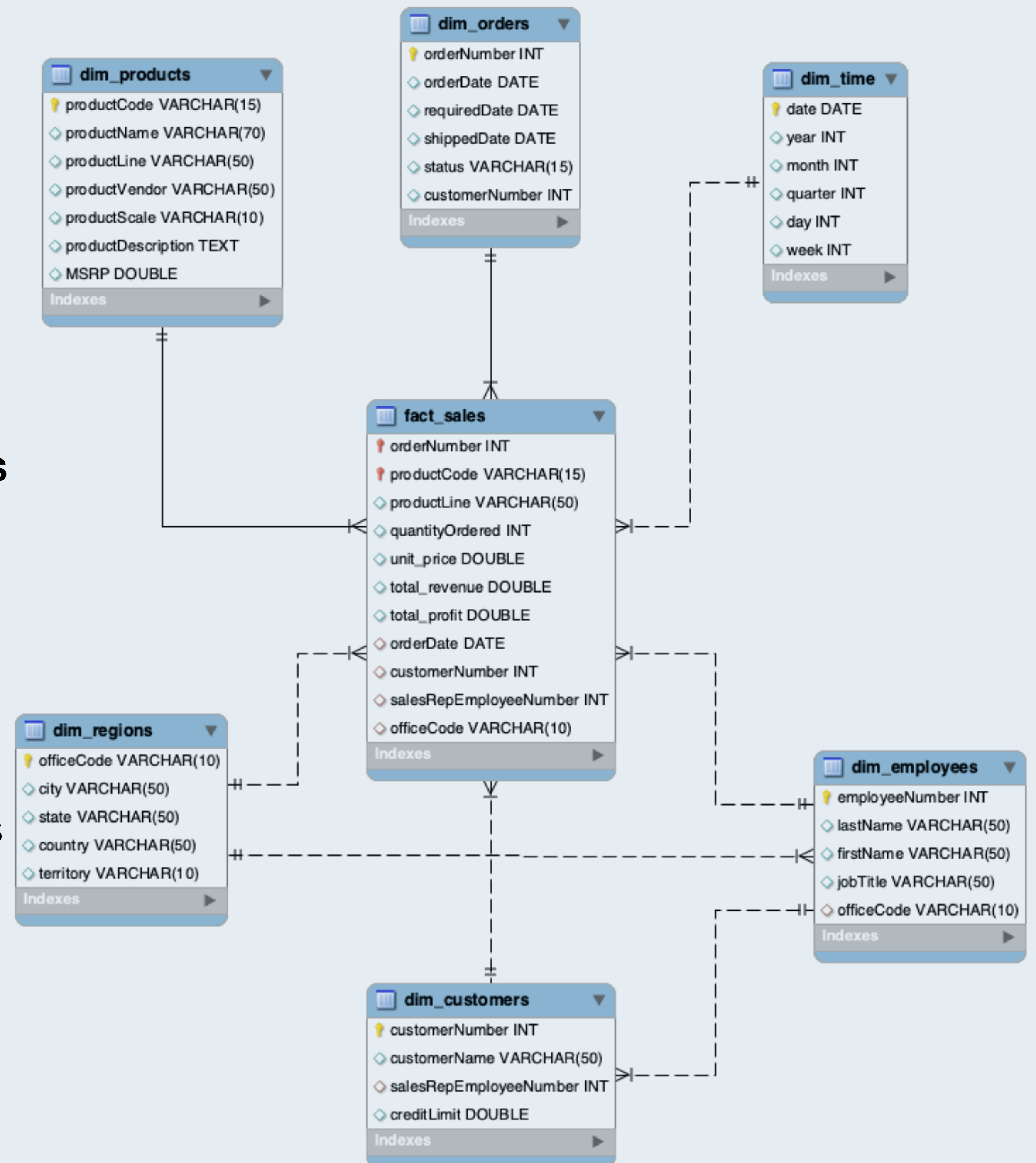


02: Data Warehouse

OLAP

Online Analytical Processing

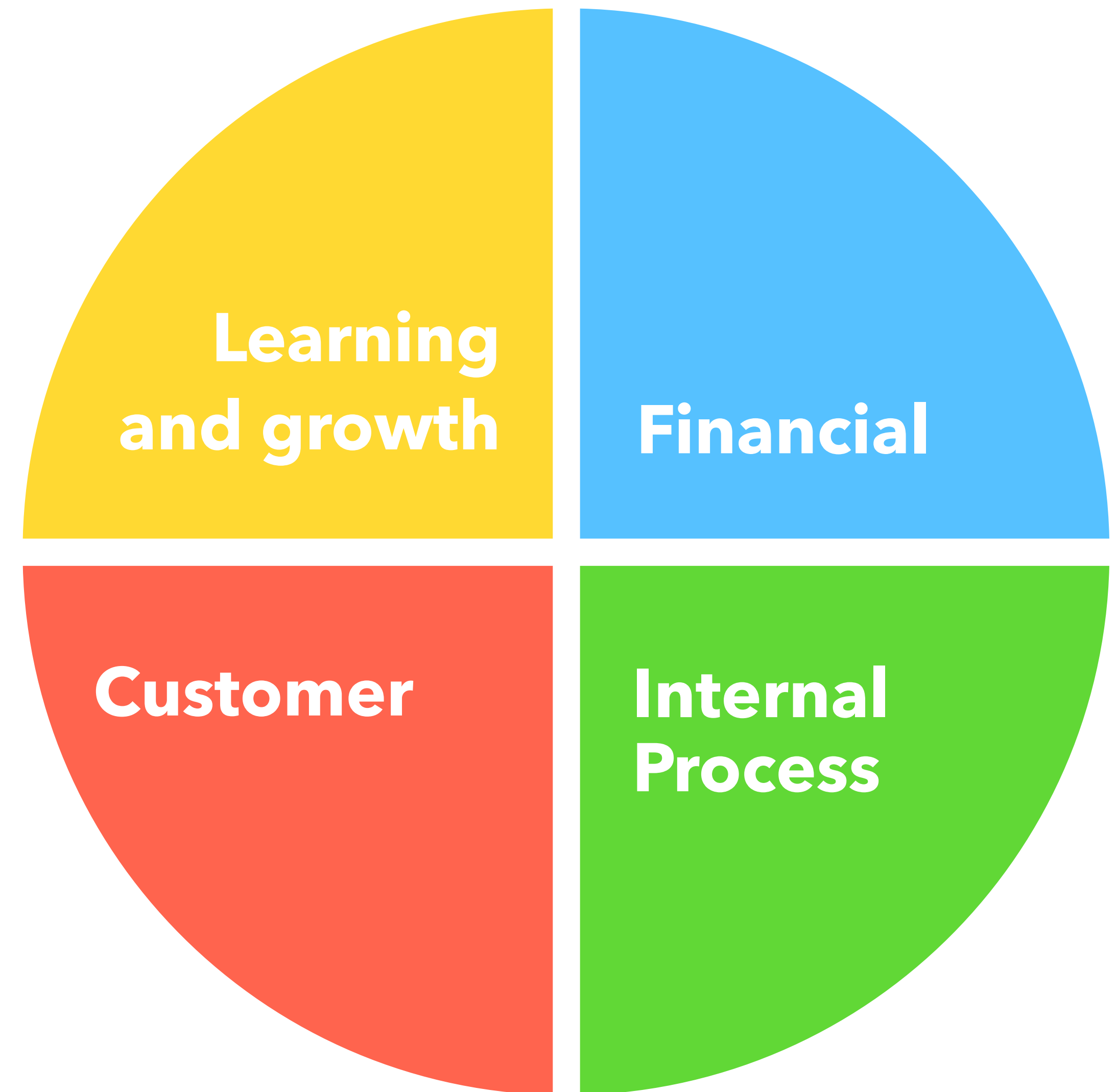
- **Simplified structure** optimized for analysis to provide **actionable business insights** via **KPIs**
 - Analyze sales performance, customer engagement, operational efficiency, and product performance.
- Pre-calculated measures in the fact table
- Denormalized dimension tables
- Dedicated time dimension for temporal analysis
- Streamlined relationships through star schema design



03: Balanced Scoreboard

Balanced Scorecard

& Key
Performance
Indicators



Balanced scorecard

Financial KPIs

- Year-over-Year Revenue Growth Rate
- Product Line Revenue Distribution
- Gross Profit Margins
- Average Order Value
- Revenue by Territory
- Product Pricing Markup



Financial

Balanced scorecard

Financial KPIs

- Classic cars dominate sales volume (~4M units)
- 33% YoY sales growth (2003-2004)
- Highest revenue per order: \$67K
- Product line profitability: 10-11.7%



Financial

Balanced scorecard

Customer KPIs

- Orders per Customer
- Customer Geographic Distribution
- Average Payment Time by Region
- Customer Order Frequency
- New Customer Acquisition Rate
- Order Status Distribution



Customer

Balanced scorecard

Customer KPIs

- Average 1-2 orders per customer annually
- Two VIP customers with 10+ orders/year
- Strong global presence: Europe, North America, Australia
- Paris leads city-level sales performance
- 24 new customers pending in EMEA
- Japanese customers show faster payment cycles



Customer

Balanced scorecard

Internal Process KPIs

- Average Shipping Time by Region
- Order Processing Efficiency
- Order Fulfillment Rate
- Items per Order
- Order Line Item Quantity
- Inventory Turnover Rate



**Internal
Process**

Balanced scorecard

Internal Process KPIs

- 93% successful shipping rate
- Average order composition:
 - 9 unique products
 - 35 units per product
- Shipping times:
 - Japan: 7-8 days
 - Other locations: 1-6 days
- Sales patterns show high volatility
 - Notable spike: Late 2003/early 2004



**Internal
Process**

Balanced scorecard

Learning and growth KPIs

- Sales Rep to Customer Ratio
- Sales Territory Coverage
- New Office Performance
- Employee Sales Performance
- Market Expansion Rate



**Learning
and growth**

Balanced scorecard

Learning and growth KPIs

- New Japan office (2004)
- EMEA expansion required
- Staffing status:
 - Some sales reps without customers (training)
 - Some customers without sales reps (new registrations)

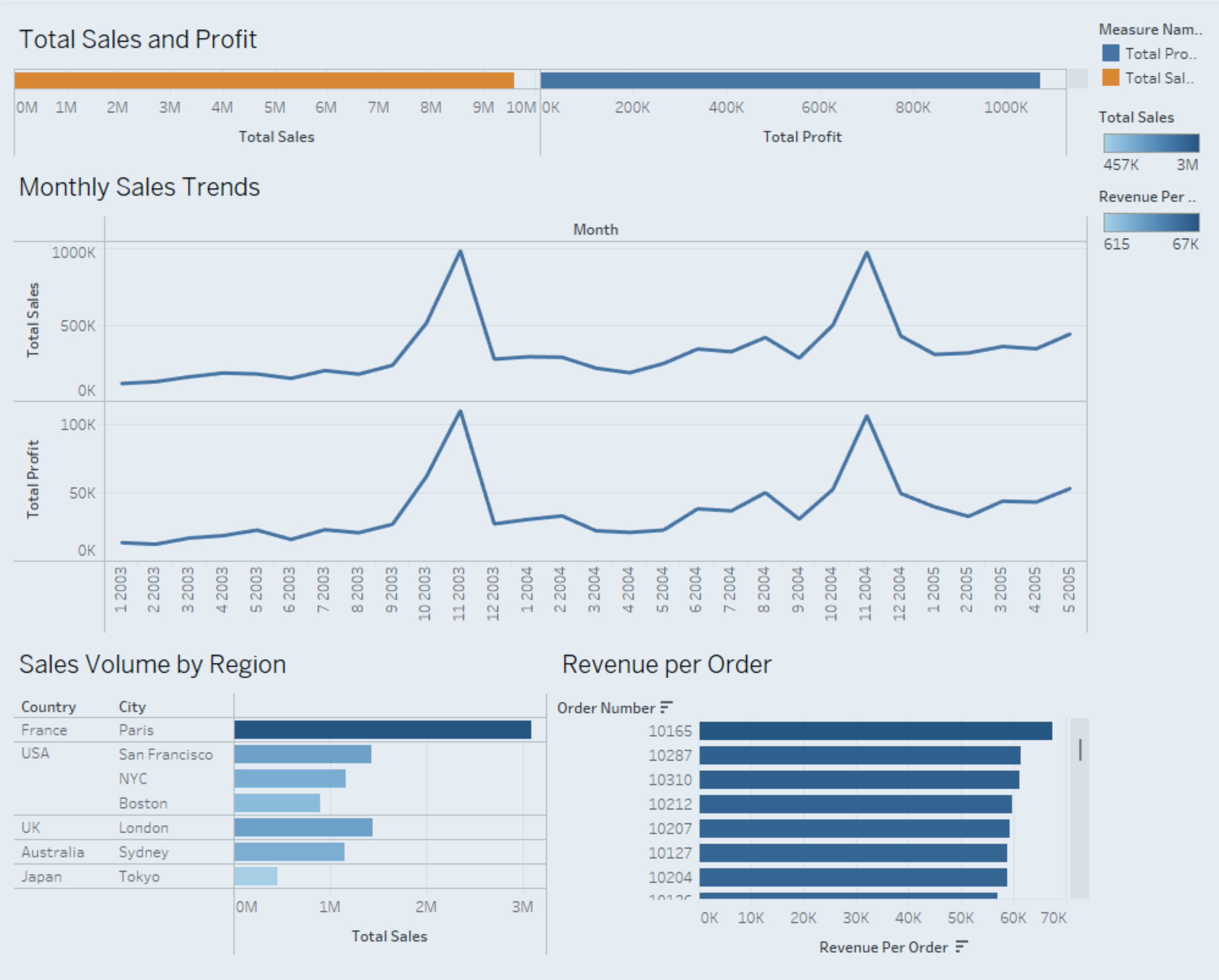


**Learning
and growth**

04: Dashboard

Tableau

Dashboard



And one more thing...

Key insights

Product Strategy

- Classic Cars dominate (~4M units) but operate at 11.17% margin
- Top 3 sellers all premium models (Ferrari, Alpine)

Market Expansion

- Paris leads sales, 24 new EMEA customers waiting
- Sales coverage gaps affecting growth

Revenue Growth

- High-value orders (\$57K-67K) but low frequency (1-2/year)
- Two VIP customers driving significant volume

Priority Actions

- Launch EMEA expansion
 - Align sales coverage with demand
 - Create premium customer program
-

Thank you for your attention!
Questions?
