ERP System

AUTOMOTIVE ERP SYSTEM

for car Dealerships

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Problem Statement

Car dealerships manage multiple processes simultaneously:

01 Vehicle inventory

02 Customer management

03 Sales and billing

04 Financing

05 Sales commissions

06 Warranties

These processes are often handled using different tools, which leads to:

- Fragmented information
- Data inconsistencies
- Financial calculation errors
- Poor vehicle lifecycle traceability
- Difficulty generating reports

PROPOSED SOLUTION

We propose the development of a specialized ERP system for car dealerships
The system will integrate in one platform:

- Inventory management
- Financing management
- Customer management (CRM)
- Commission control
- Sales and billing
- Administrative and financial reports

WHY DEVELOP AN ERP?

Advantages vs Disadvantages

Advantages

- Centralized and integrated information
- Process automation
- Real-time reports
- Better financial control
- Improved customer experience
- Scalability for future modules

Disadantages

- High development effort
- Training required
- Continuous maintenance needed
- Risk if poorly designed

TARGET USERS

The system is designed for:
- Administrators
- Managers
- Sales representatives
- Accounting staff
- Service staff

Indirect beneficiaries:
- Customers (better financing follow-up and service)

RETURN ON INVESTMENT (ROI)

- ✔️ Reduced financial errors
- ⏱️ Time optimization
- 📊 Increased sales tracking
- 📈 Data-driven decisions
- 🤝 Customer loyalty

The ERP improves profitability and competitiveness.

MARKET ANALYSIS
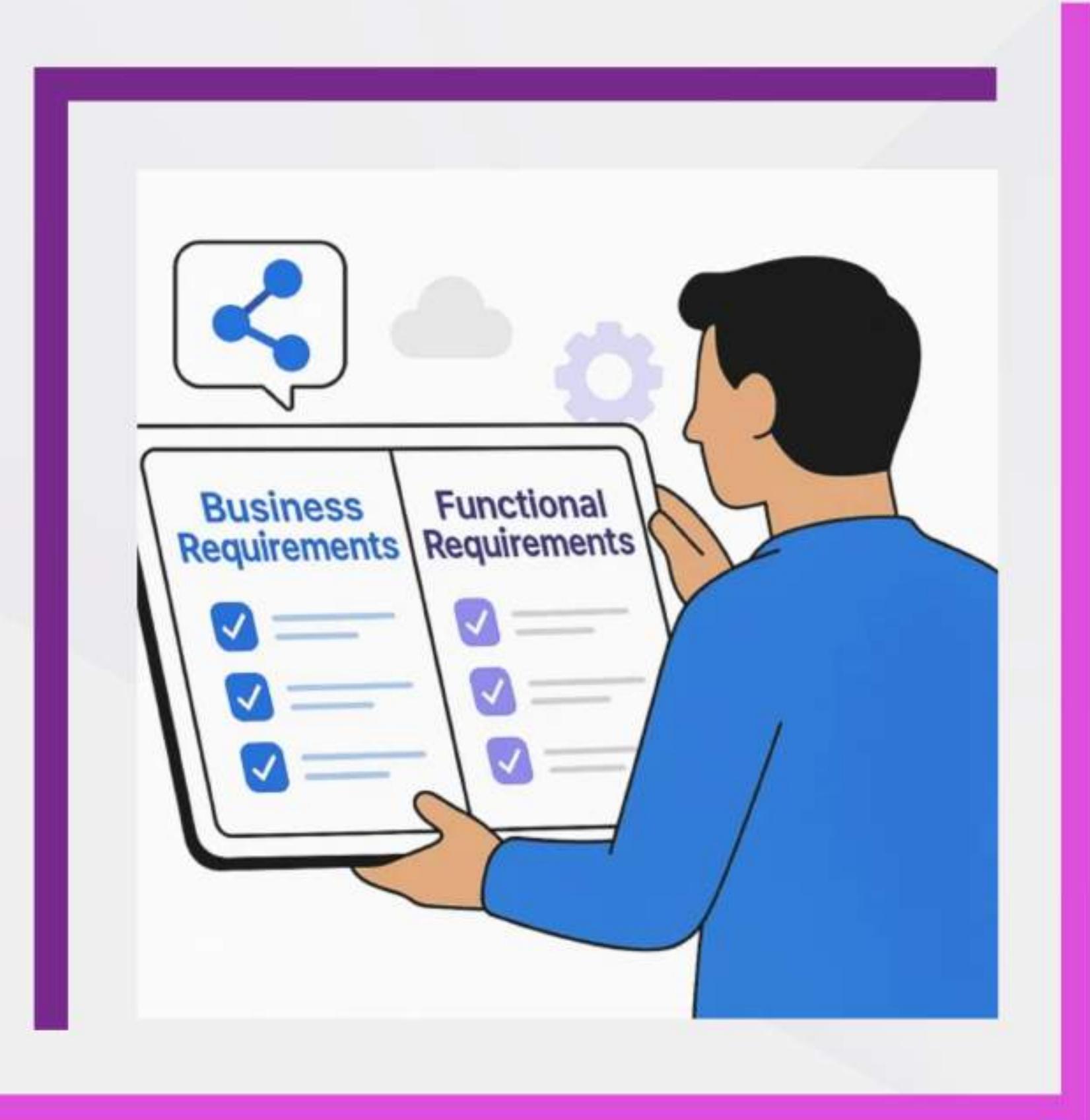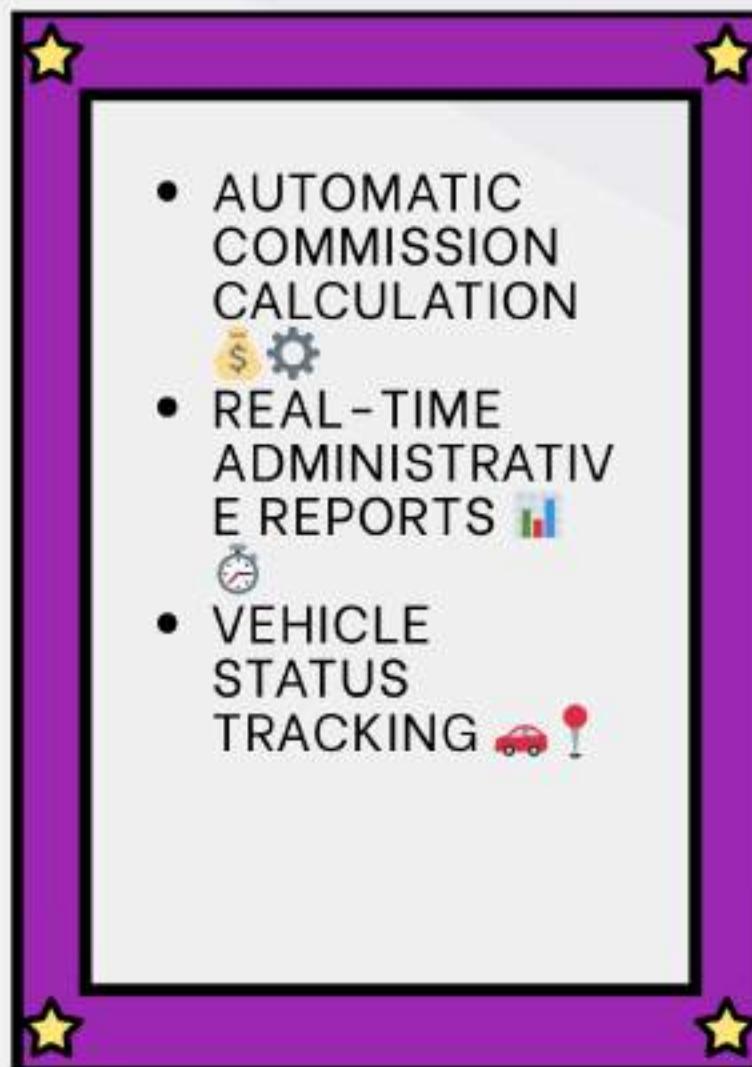
WE ANALYZED EXISTING ERP SYSTEMS:

- Most systems are generic ⚙️📦
- Few are specialized for dealerships 🚗🏢
- Opportunity for vertical ERP solution 📊 🚀

- **Loggro**
- **Odoo**

FUNCTIONAL REQUIREMENTS

MAIN MODULES

- VEHICLE INVENTORY MANAGEMENT 🚗📦
- CUSTOMER MANAGEMENT (CRM) 👤📋
- SALES & ELECTRONIC BILLING 💰🧾
- FINANCING SIMULATION 🏛️📊

- AUTOMATIC COMMISSION CALCULATION 💰⚙️
- REAL-TIME ADMINISTRATIVE REPORTS 📊⏱️
- VEHICLE STATUS TRACKING 🚗📍
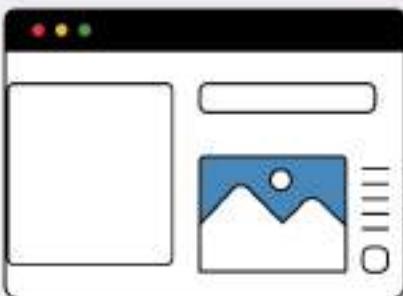
NON-FUNCTIONAL REQUIREMENTS

USABILITY 🖥️✨
- INTUITIVE, RESPONSIVE UI 📱⚡

- **PERFORMANCE** ⚡📊 < 3 SECONDS RESPONSE TIME ⏱️🚀
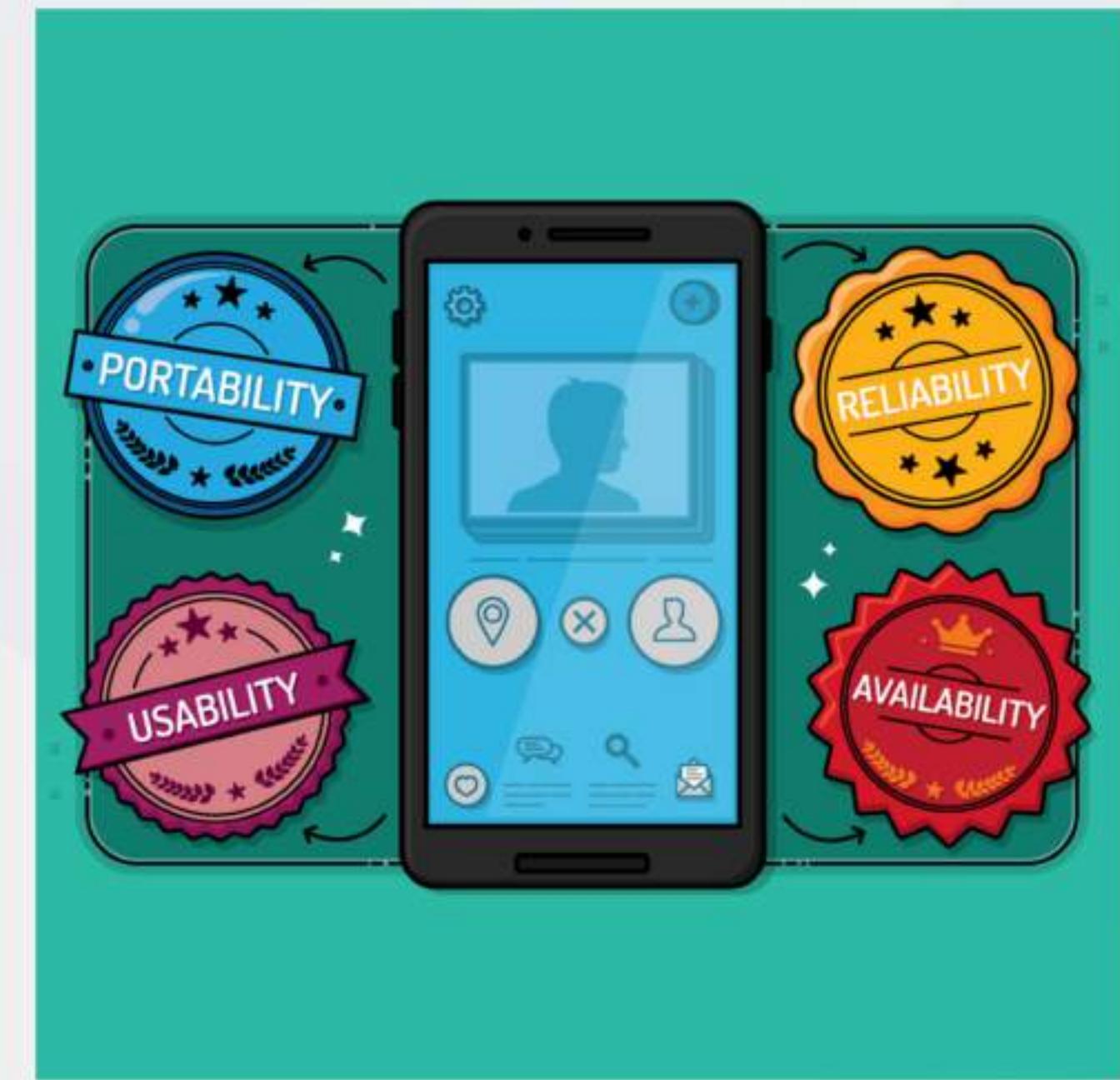
- **SECURITY** 🔐🛡️JWT AUTHENTICATION 🔑✅
- BCRYPT ENCRYPTION 🔒🧬
- ROLE-BASED ACCESS CONTROL 👤🧩
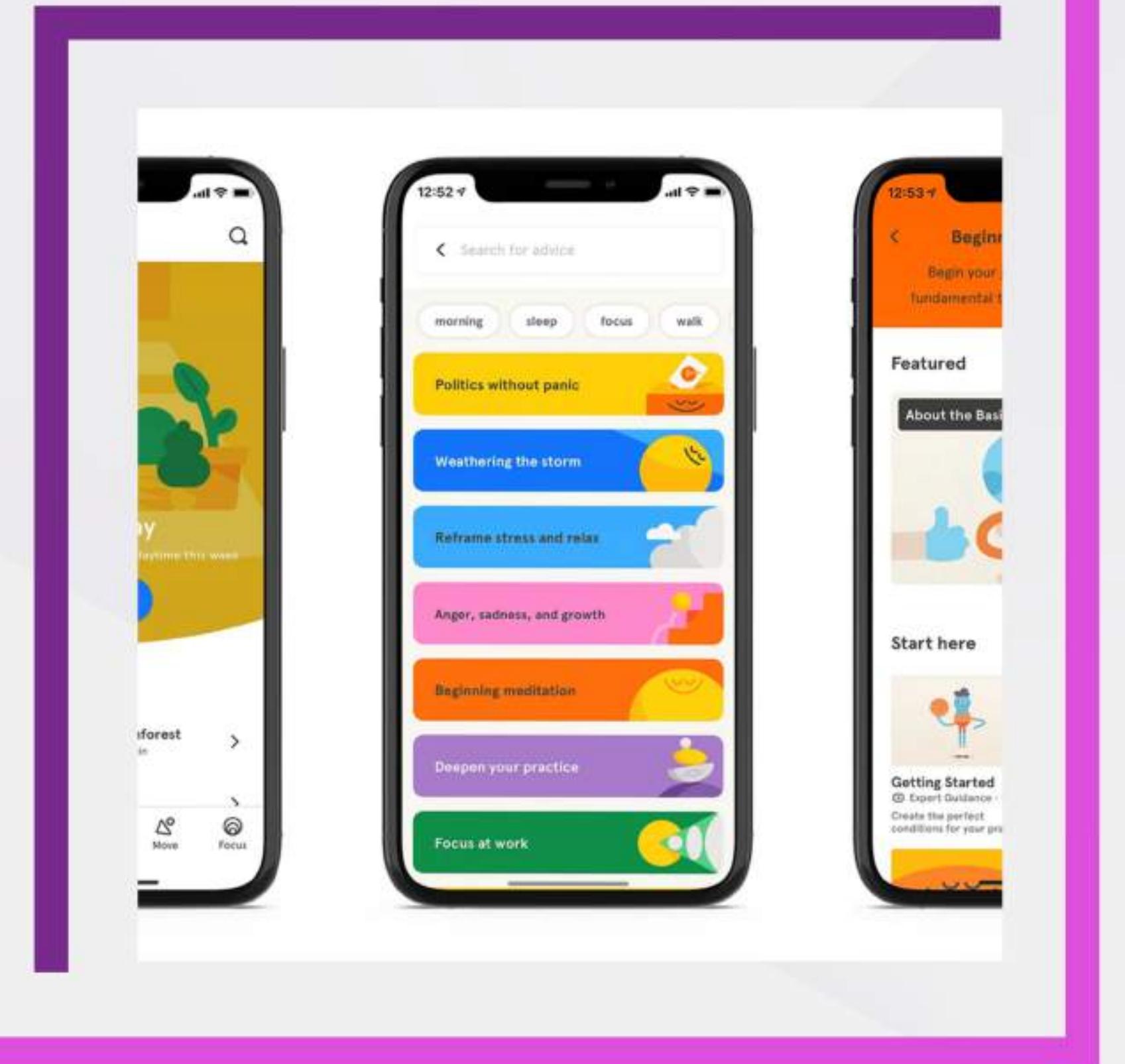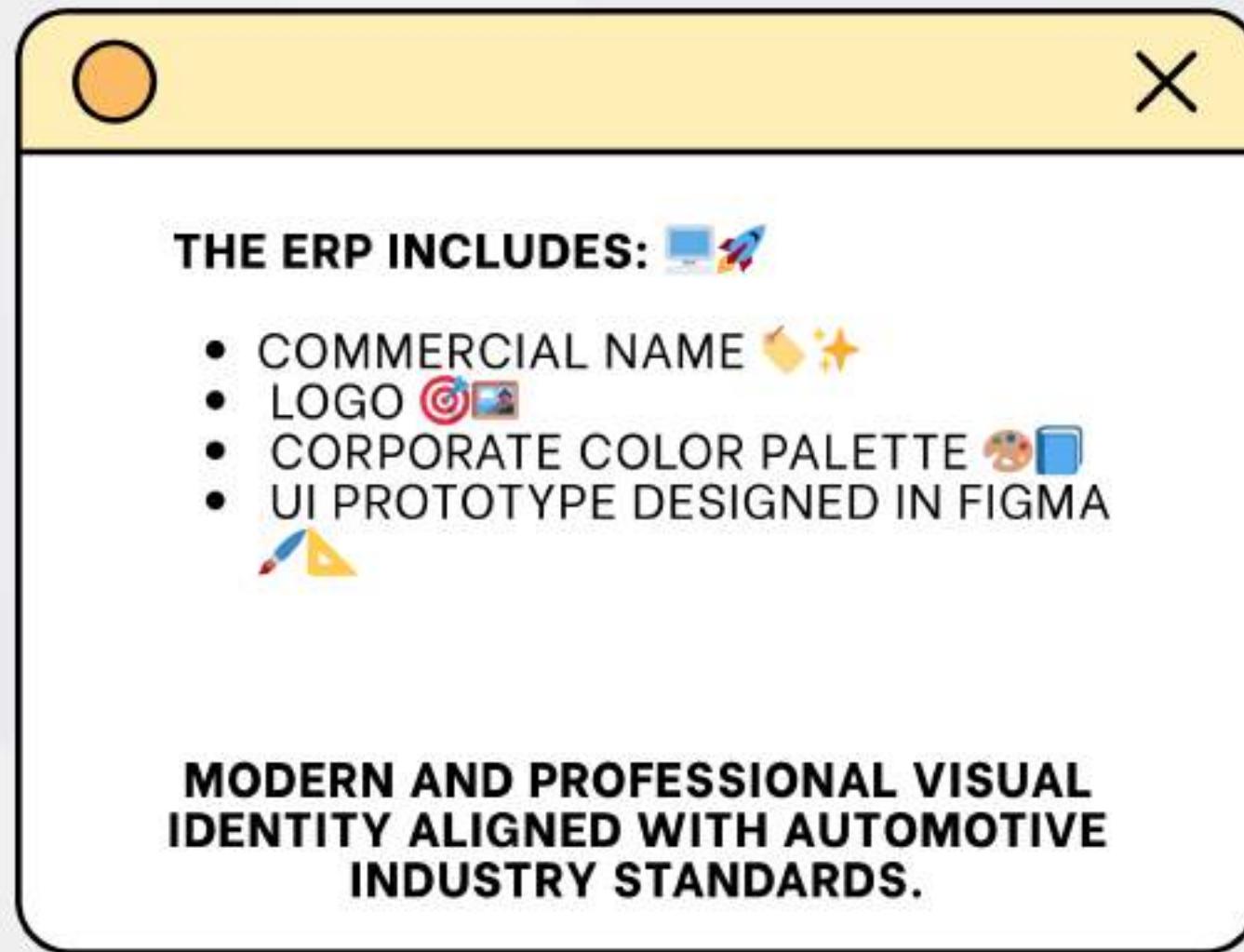
OTHER ⚙️📌
- SCALABILITY: MODULAR ARCHITECTURE 🧱📈
- MAINTAINABILITY: SOLID PRINCIPLES 🧠🔧
- AVAILABILITY DURING BUSINESS HOURS 🕐🏢

BRANDING & UI

THE ERP INCLUDES: 🖥️🚀

- COMMERCIAL NAME 🏷️✨
- LOGO 🎯🖼️
- CORPORATE COLOR PALETTE 🎨🗂️
- UI PROTOTYPE DESIGNED IN FIGMA 🖌️📐

MODERN AND PROFESSIONAL VISUAL IDENTITY ALIGNED WITH AUTOMOTIVE INDUSTRY STANDARDS.

SCOPE & LIMITATIONS

INCLUDED:
- INVENTORY
- CRM
- SALES & BILLING
- FINANCING SIMULATION
- REPORTS

NOT INCLUDED:
- REAL BANKING INTEGRATION
- E-COMMERCE PLATFORM
- NATIVE MOBILE APP
- MULTI-BRANCH SUPPORT

DEFINED ACCORDING TO ACADEMIC SCOPE AND TRIPLE CONSTRAINT.

LIMITATION

Scope

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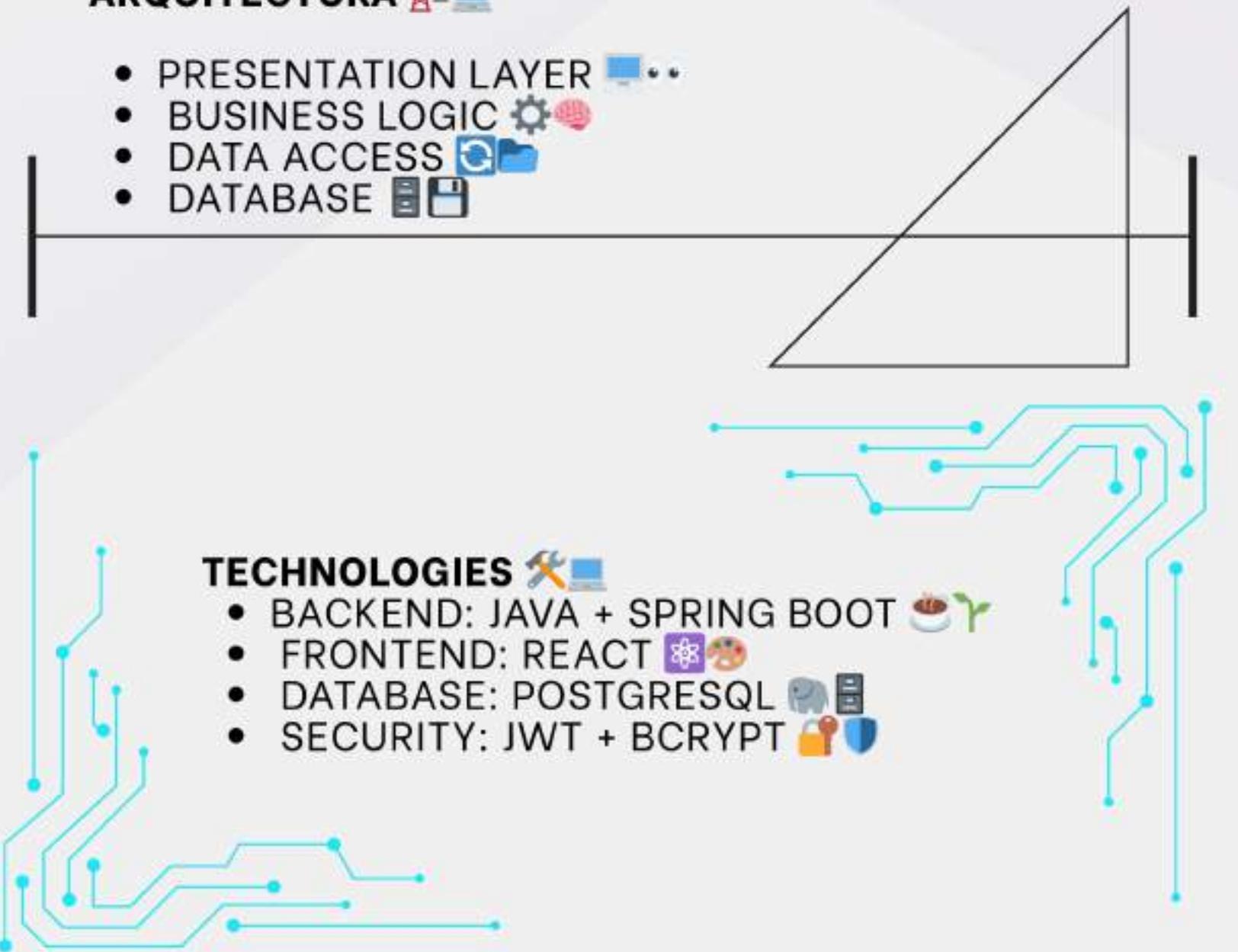
Limitation

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ARCHITECTURE & TECHNOLOGIES

ARQUITECTURA 🏗️💻

- PRESENTATION LAYER 🖥️👀
- BUSINESS LOGIC ⚙️🧠
- DATA ACCESS 🔄📁
- DATABASE 🗄️💾

TECHNOLOGIES 🛠️💻

- BACKEND: JAVA + SPRING BOOT ☕🌱
- FRONTEND: REACT ⚛️🎨
- DATABASE: POSTGRESQL 🐘🗄️
- SECURITY: JWT + BCRYPT 🔐🛡️

FINAL CONCLUSION

Big thanks

IT IS A SCALABLE AND SECURE SOLUTION TAILORED FOR CAR DEALERSHIPS.

- INTEGRATES DEALERSHIP OPERATIONS
- IMPROVES EFFICIENCY AND TRACEABILITY
- SUPPORTS STRATEGIC DECISION-MAKING
- ENHANCES CUSTOMER EXPERIENCE
- ENABLES DIGITAL TRANSFORMATION

THE END