**National University of Computer & Emerging Sciences**

**Karachi Campus**



**Car Showroom Management System**

**Project Proposal**

**Object-Oriented Programming**

**Section: F**

**Group Members:**

**24k-1010 Ahmed Raza**

**24k-0688 Simal Hassan**

**24k-0812 Laiba Jamil**

**Project Proposal: Car Showroom Management System**

**1. Introduction**

The **Car Showroom Management System** is a software application designed to automate and streamline the operations of a car showroom. The system will facilitate inventory management, sales tracking, customer management, and invoice generation while ensuring efficient data handling using Object-Oriented Programming (OOP) in C++. By implementing this system, showroom owners can minimize manual errors, improve record-keeping, and enhance business efficiency.

**2. Existing System**

Currently, many car showrooms rely on manual record-keeping or basic digital tools like spreadsheets to manage inventory and sales. Some businesses use off-the-shelf software that may lack customization, real-time updates, and efficiency in handling large-scale showroom operations.

**3. Problem Statement**

The **current showroom management** methods are either outdated or inefficient due to the following reasons:

1. Manual errors in tracking stock levels, sales, and customer details.

2. No real-time inventory management leads to inaccurate vehicle availability.

3. Limited integration of sales tracking and analytics.

4. Lack of structured customer management and invoicing.

5. Security issues due to unrestricted data access.

**4. Proposed Solution**

The proposed system will be a console-based application developed using OOP principles in C++. It will feature data encapsulation, inheritance, polymorphism, and file handling for efficient management of showroom operations. The system will include: Object-oriented architecture to enhance modularity and maintainability.

* Role-based access control , ensuring secure user interactions.
* Automated inventory updates for stock management.
* Efficient sales tracking and invoice generation.
* Data storage using file handling for persistence.

**5. Salient Features**

**User Roles**

* **Admin:** Manages showroom inventory and employees. Monitors sales reports.
* **Salesperson**:Handles customer orders and generates invoices.
* **Customer:** Views available cars and places orders.
* **Product Management :**Add new car models with specifications and prices.
* **Update stock availability:**Categorize cars (e.g., Sedan, SUV, Hatchback).
* **Customer Management :** Add and update customer details. Search customers by name or purchase history.
* **Sales & Invoice Generation:**Process customer orders. Generate invoices with tax and discount calculations. Support multiple payment methods (cash, credit, installment).
* **Reports & Analytics:**Generate daily/weekly sales reports . Identify best-selling car models.
* **File Handling & Database Management :** Store and retrieve product and customer data using file handling . Maintain previous sales records for reference.

**6. Tools & Technologies**

**Programming Language:** C++ -Object-Oriented Programming (OOP)

**File Handling:** Text Files / Binary Files

**Operating System :** Windows / Linux

**Development Environment :** Visual Studio, or Dev-C++

**Conclusion**

The Car Showroom Management System will offer a secure, efficient, and user-friendly platform for managing inventory, tracking sales, and handling customer data . By leveraging OOP concepts in C++ , the system will ensure modularity, security, and maintainability while addressing the shortcomings of existing solutions.