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**College of Engineering and Technology**

Department of Computer Systems Engineering

**Course name:** Software Engineering

**Project title:**

Car Rental Management System

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# Abstract

Traditional car rental processes require customers to visit multiple agencies or make numerous calls to check **vehicle availability**, making the process inefficient and **time-consuming**. Even after significant effort, customers may not find the desired vehicle, leading to frustration. Similarly, rental agencies relying on **paper-based** record-keeping face challenges in tracking customer details, **vehicle availability**, and **maintenance history**.  
  
Theproposed **Car Rental Management System (CRMS)** is a **web-based platform** that streamlines operations with **real-time fleet availability**, **online reservations**, and automated **customer management**. Customers can browse available vehicles, view promotions, **book rentals**, **manage accounts**, and **submit feedback**. On the other hand, rental agencies benefit from **centralized data storage**, **secure customer record management,** and **efficient vehicle tracking**.  
  
By **digitizing and automating** these processes, the **CRMS** enhances operational efficiency, improves customer satisfaction, and reduces administrative overhead, making car rentals more accessible and manageable for businesses in Palestine.

# Introduction

## Purpose

The purpose of this document is to provide a comprehensive description of the **Car Rental Management System (CRMS)**. It outlines the system’s objectives, features, technical interfaces, operational constraints, and responses to user interactions. It also serves as a reference for stakeholders to ensure the system meets the specified requirements and objectives.

## Document Convention

### Text Styles

| **Style** | **Usage** | **Example** |
| --- | --- | --- |
| **Bold** | Mandatory requirements, key terms. | **real-time fleet availability** |
| *Italics* | examples, technical terms, or emphasis. | (*e.g., insurance, registration*), *API* |

### Abbreviations

| **Abbreviation** | **Meaning** |
| --- | --- |
| **CRMS** | Car Rental Management System |
| **KYC** | Know Your Customer (ID verification) |
| **API** | Application Programming Interface |

### Terminology

* + **Role-Based Access:** Privileged accounts (*e.g., Manager*) with restricted permissions.
  + **Fleet:** Collection of vehicles owned by the rental agency

## Intended Audience and Reading Suggestions

This document is intended for various stakeholders involved in the development and use of the **Car Rental Management System (CRMS)**. The key audiences are:

### System Developers

* + **Role:** Design, implement, and maintain the CRMS.
  + **Focus:** Technical specifications, *API* integration, and security protocols.

### Rental Agency Owners/Managers

* + **Role:** Use the system to manage vehicles, customers, and financial workflows.
  + **Focus:** Business features (*e.g., billing, reporting*) and user roles.

### End Users (Customers)

* + **Role:** Rent vehicles via the CRMS portal.
  + **Focus:** Booking workflows, account management, and feedback submission.

### PTUK Faculty

* + **Role:** Evaluate academic compliance and SRS structure.
  + **Focus:** IEEE formatting, traceability, and project scope.

## Project Scope

This section defines the boundaries of the **Car Rental Management System (CRMS)**, including its core functionalities, technical limitations, and excluded features.

### In-Scope

* **User Management:** Secure accounts (email/password), role-based access (Admin/Customer).
* **Vehicle Management:** Real-time availability, online booking.
* **Payment & Billing:** Automated cost calculation (daily/weekly rates).
* **Business Operations:** Maintenance/insurance tracking, basic reports.
* **Technical Scope:** Web-based (mobile-responsive).

### Out-of-Scope

* Mobile apps.
* GPS tracking.
* Third-Party KYC tools.

### Constraints

* Internet required.
* Budget limits.

### Assumptions

* **User Literacy:** Customers and staff can navigate a web interface.
* **Legal Compliance:** Both Customers and agencies upload valid documentations
* **Manual Verification:** Agencies manually verify customers’ IDs and driver Licenses.

# References

[1] PTUK Software Engineering Course, “*Sw Eng Assignment - Part 1.pdf: Software Requirements Specification (SRS)*” 2025. [Online]. Available: <https://lms.ptuk.edu.ps/mod/assign/view.php?id=633283>

[2] IEEE Standards Association, “*IEEE Recommended Practice for Software Requirements Specifications*” IEEE Std 830-1998, 1998. [Online]. Available: <https://standards.ieee.org/ieee/830/1222/>