**Parking Garage Management System**

Software Requirements Specification

Revision History

| **Date** | **Revision** | **Description** | **Author** |
| --- | --- | --- | --- |
| 9/14/2025 | 1.0 | Initial Version | Kegang Peng |
| 9/18/2025 | 1.1 | 4 of 5 Group Members attended. Chris did not know we were meeting. 50 Minutes looking over our SRS document and filling out parts of all sections |  |
| 9/22/2025 | 1.2 | meeting for 40 minutes, discussed roles implementation for completion of several components of the srs, brainstormed system design of the system, modified srs and discussed classes. Assign tasks. | Everyone was in the meeting |
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# Purpose

This document outlines the requirements for the Parking Garage Management (PGM) System.

## Scope

This document will catalog the user, system, and hardware requirements for the PGM system. It will not, however, document how these requirements will be implemented.

## 1.2. Definitions, Acronyms, Abbreviations

PGM: Parking garage management

## 1.3. References

Use Case Specification Document – Step 2 in assignment description - Tuan Kegang

UML Use Case Diagrams Document – Step 3 in assignment description - Chris

Class Diagrams – Step 5 in assignment description - Diego

Sequence Diagrams – Step 6 in assignment description - Matt

## Overview

The Parking Garage Management (PGM) System is designed to manage and monitor parking garages. It automatically records each vehicle’s license plate, entry time, exit time, and calculates the appropriate parking fees. Operators can view records and generate reports. By automating tracking and billing, the system reduces errors and increases efficiency for parking garages

# Overall Description

## Product Perspective

## Product Architecture

The system will be organized into three major modules: the user interface module, the database module, and the billing module.

## Product Functionality/Features

The high-level features of the system are as follows (see section 3 of this document for more detailed requirements that address these features):

## Constraints

List appropriate constraints.

Constraint example: Since users may use any web browser to access the system, no browser-specific code is to be used in the system.

The amount of vehicles that can be actively in use in the system is constrained by the physical space of the parking garage.

Height restrictions that limit the vehicle types that can be accommodated.

Retain a privacy policy to ensure user privacy when paying through a credit card

## Assumptions and Dependencies

List appropriate assumptions

Assumption Example: It is assumed that the maximum number of users at a given time is 15,000.

“Banking/Payment Processor”

# Specific Requirements

## Functional Requirements

### Common Requirements:

3.1.1.1 SR10 Maintain a live count of parked cars and show available parking spaces.

3.1.1.2 SR11 Sufficient memory to record cars entry/exit details.

### User Interface Module Requirements:

3.1.2.1 SR20 Select all day parking for discount

3.1.2.2 SR21 Prevent entries when garage is full.

3.1.2.3 SR22 Operator log in to generate reports.

### Database Module Requirements:

3.1.3.1 SR30 Record car license plate, entry/exit time and total fee

3.1.3.2 SR31 Keep track of revenue and generate reports

3.1.3.3 SR32 Search for specific car by license plate.

### Billing Module Requirements:

3.1.4.1 SR40 Calculate parking fee

3.1.4.2 SR41 Handle payment processing and provide billing options.

## 3.2 External Interface Requirements

3.2.1 SR50 The system must provide a user interface for customers to view their duration of stay, total fee, and payment options.

3.2.2 SR51 The system must provide a user interface for operators to log in. Operators can search for a car by license plate, view the details/histories of the car and print reports.

## 3.3 Internal Interface Requirements

3.3.1 SR60 The system must keep a record of reports generated by operators.

# Non-Functional Requirements

## 4.1. Security and Privacy Requirements

4.1.1 SR70 System must encrypt operator’s username and password.

4.1.1 SR71 System must process credit/debit card payments securely.

## 4.2. Environmental Requirements

4.2.1 SR80 The system requires uninterrupted access to internet services in order to function.

## 4.3. Performance Requirements

4.3.1 SR90 Responsive and user-friendly interface

4.3.2 SR91 Time calculation should be accurate to the minutes to ensure accurate fee calculation, fee should be rounded to 2 decimals.

4.3.3 SR92 Being able to store the information of 17,000 cars in less than 20 minutes.

4.3.4 SR93 Being able to store records (# of cars, average stay, etc.) up to 30 days and generate reports from such records

<https://docs.google.com/presentation/d/1RLb8P_rrBseDSzUFbNVdHD_3QSceWJ8TnijF_eJY4no/edit?usp=sharing>

Classes:

Garage:

* Attributes: spaces available
  + fee rates
  + amount of cars inside of garage
  + closing and opening time
* Methods:
  + print Report

Car:

* Attributes:
  + license plate
  + Ticket(entry/exit time, fee )
* Methods:

OperatorInterface

Attributes:

Methods:

User Interface

Payment

method of payment

when you paid

Report

How many cars

How much was made

Averv age rate of stay