Cairo University  
Faculty of Computers and Artificial Intelligent

**CS251 - Software Engineering I**

Parking Garage System

Software Requirements Specifications (SRS)

Team Names

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# Team

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# Document Purpose and Audience

* **This document is for Yasser to create class diagram and sequence diagram, also for Ahmed and Kareem to create Java source code, and for TAs to review the work.**

# Introduction

## Software Purpose

* **Manage garage parking system**

## Software Scope

* **It’s major functionalities are park-in and park-out**
* **It can also display available slots, calculate total revenue, and count no. of vehicles.**

## Definitions, acronyms, and abbreviations

* **In a table, list all needed ones. Consider the audience**
* **Think as following: Document has abbreviation ATM..IFF audience doesn’t know it, let’s clarify it.**

# Requirements

## Functional Requirements

* Park in
* Park out
* Display available slots
* Register vehicle details
* Calculate parking fees
* Calculate Total Income

## 

## Non Functional Requirements

|  |  |
| --- | --- |
|  | **Details** |
| **Performance** | * **Park in and park out operations should take place within 5 seconds.** |
| **Scalability** | * **System should be able to park in or out up to 8 simultaneous vehicles.** |
| **Security** | * **Once parking fees are calculated they shouldn’t be editable.** |

# System Models

## Use Case Model

**Diagram

Description automatically generated**

## Use Case Tables

|  |  |  |
| --- | --- | --- |
| Use Case ID: | UCD1 | |
| Use Case Name: | Park In | |
| Actors: | Vehicle Owner, System | |
| Pre-conditions: | Free available slot | |
| Post-conditions: | A slot is registered | |
| Flow of events: | **User Action** | **System Action** |
| 1- Vehicle enters the garage. |  |
|  | 2- System checks available slots.  3- System select the slot according to slot configuration. |
| 4- Vehicle Owner parks the vehicle at the selected slot. |  |
|  | 5- System registers vehicle. |
| Exceptions: | **User Action** | **System Action** |
| 1- Vehicle enters the garage. |  |
|  | 2- No available slots.  3- System rejects parking request. |
| Includes: | The customer has a vehicle | |
| Notes and Issues: |  | |

|  |  |  |
| --- | --- | --- |
| Use Case ID: | UC2 | |
| Use Case Name: | Park Out | |
| Actors: | Vehicle Owner, System | |
| Pre-conditions: | A registered slot | |
| Post-conditions: | A slot is unregistered | |
| Flow of events: | **User Action** | **System Action** |
| 1- Vehicle Owner requests to leave garage. |  |
|  | 2- System marks departure time.  3- System calculates department fees. |
| 4- Vehicle Owner pays parking fees. |  |
|  | 5- System unregister vehicle. |
| 6- Vehicle owner leaves garage. |  |
| Exceptions: | **User Action** | **System Action** |
| 1- Vehicle Owner requests to leave garage. |  |
|  | 2- System finds the slot empty  3- System rejects departure request. |
| Includes: | The vehicle is already parked in | |
| Notes and Issues: |  | |

# Ownership Report

|  |  |
| --- | --- |
| **Item** | **Owners** |
| Functional, non-functional Requirements and Use Case Diagram | *Ahmed El-Zeedy* |
| Class diagram, sequence diagram | *Yasser Mohamed* |
| Java source code | *Ahmed Ayman, Kareem Mohamed* |