Cairo University  
Faculty of Computers and Artificial Intelligent

**CS251 - Software Engineering I**

Parking system

Software Requirements Specifications (SRS)

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# Team

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# Document Purpose and Audience

* This document shows a simple look about Parking in a Garage application.
* It shows how the software work and its purpose.
* The developer of this software can read this document to develop the software easily.
* The admin also can read this document to know how this software can work.

# Introduction

**Software Purpose**

**The purpose of this software is to build an easy-to-use garage system for both the garage owner and the vehicle owner**

**Software Scope**

* **There must be an electronic gate to enter the vehicles automatically**
* **There should be a screen through which the driver can enter his data**
* **Our system must have screens connected to the available slots so that they appear to the garage owner so that he can choose the right place for the vehicle**
* **There must be a good system for recording entry time and exit time**
* **There must be a good system for calculating the fees**
* **The garage system must be linked to bank transactions so that the driver can pay by credit card**

## Definitions, acronyms, and abbreviations

|  |  |
| --- | --- |
|  | **Meaning** |
| **Display the available parking slots** | **It displays the available slots for the administrator so that he can choose the appropriate slot for the driver** |
| **Find best fit slot** | **It is based on finding the slot with the minimum dimension to hold the vehicle.** |
| **Find first free slot** | **It is based on using the first free slot available from the parking garage slots** |
| **Time storage** | **It stores entry time and exit time** |

# Requirements

## Functional Requirements

## Parking

## Display the available parking slots

## Payment

## Calculate Time

## Calculate Fees

## Non Functional Requirements

* + **Quick response**
  + **Manipulating**
  + **Credibility of the website**

|  |  |
| --- | --- |
| **Type** | **Details** |
| **Performance** | * **Withdraw operation will be done within 20 second** |
| **Quick response** | * **is the extent to how the software system handles users requests and respond to them.** |
| **Maintainability** | * **Is the ease with which faults in a software system can be found and fixed.** |
| **Reliability** | * **Is the extent to which the software system consistently performs the specified functions without fail.** |
| **Usability** | * **System should provide to the user ability to learn, operate, prepare inputs and interpret outputs through interaction with a software system.** |

# System Models

## Use Case Model

**Diagram, schematic

Description automatically generated**

## 

## Use Case Tables

|  |  |  |
| --- | --- | --- |
| Use Case Name: | Parkin | |
| Actors: | Driver and administrator | |
| Pre-conditions: | The driver entered the Garage | |
| Post-conditions: | the driver will park out | |
| Flow of events: | **User Action** | **System Action** |
| 1-the driver enters the Garage |  |
|  | 2- the system request from the driver to enter the model’s name, model year, model id, vehicle width and vehicle depth |
| 3- the driver enters the model’s name, model year, model id, vehicle width and vehicle depth |  |
|  | 4- the screen will display this message” there’s available slots” |
| 5- the administrator requests from the system to display the available slot |  |
|  |  | 6-the system displays the ID of the available slot |
|  | 7-the driver park in the slot showed |  |
|  |  | 8-the system stores the start time |
| Exceptions: | **User Action** | **System Action** |
| 1-the driver enters the Garage |  |
|  | 2- the system displays this message “there’s no available slots” |
| includes: | None | |
| Notes and Issues: | None | |

|  |  |  |
| --- | --- | --- |
| Use Case Name: | ParkOut | |
| Actors: | Driver | |
| Pre-conditions: | The system stores the start time | |
| Post-conditions: | the driver quit from the Garage | |
| Flow of events: | **User Action** | **System Action** |
| 1-the driver parked out from the slot |  |
|  | 2-the system requests from the driver to enter the slot ID |
| 3- the driver enters the slot ID |  |
|  | 4- the system will calculate the time by setting the start time and the end time and calculate the difference between them |
|  | 5- the system will calculate the fees |
|  |  | 6-the system displays the fees on the screen |
|  | 6-the driver pay the fees displayed and go out the Garage |  |
| Exceptions: | **User Action** | **System Action** |
| 1- the driver parked out from the slot |  |
|  | 2-the system requests from the driver to enter the slot ID |
|  | 3- the driver enters the slot ID |  |
|  |  | 4-the system displays the message ”the ID is incorrect” |
| includes: | None | |
| Notes and Issues: | None | |

# 

|  |  |  |
| --- | --- | --- |
| Use Case Name: | First free slot | |
| Actors: | Administrator and driver | |
| Pre-conditions: | The driver requests for available slot | |
| Post-conditions: | The driver enters the Garage | |
| Flow of events: | **User Action** | **System Action** |
| 1-The driver requests for available slot |  |
|  | 2-the system displays the available slots on the screen of the administrator, and the system has two options which are:  1-find best fit slot.  2-find first free slot |
| 3- the administrator chooses first free slot |  |
|  | 4- the system requests from the administrator to enter the configuration |
| 5-the administrator enters the configuration |  |
|  | 6-the system displays the ID of the slot that has been chosen |
| 7-the driver enters the Garage and Park in the slot |  |
|
| Exceptions: | **User Action** | **System Action** |
|
|
| includes: | None | |
| Notes and Issues: | None | |