Cairo University  
Faculty of Computers and Artificial Intelligent

**CS251 - Software Engineering I**

Project Name: Parking system

Software Requirements Specifications (SRS)

**Team Names:**

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Month & Year

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# Team

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# Document Purpose and Audience

1. **The document Tells us the Functional and non-functional requirements.**
2. **The document explains what the definition of the system is ,its aim and its scope**
3. **Clarify the requirements (functional and non-functional)**

# Introduction

## Software Purpose

* **This software help the drivers to park their cars in a safe place and suitable slots.**

## Software Scope

**Provide the customer with suitable slots for parking, fixed id for payment and provide the admin for easily calculation for the total cost and total time.**

## Definitions, acronyms, and abbreviations

**1. best fit is a slot with the most suitable dimensions for your car**

**2. get ID function help the drivers to tell the system that they need a slot.**

**3. check available function searches for empty slots for a new drivers to park in.**

**4. insert info function asks the driver for his data as: name, car model, car dimensions, etc...**

# Requirements

## Functional Requirements

**The parking system should provide three types of users:**

**1. driver:**

**He Should select between parkin, park out or view functions.**

Park in **function help the driver to park his car in a suitable slot with suitable dimensions.**

**The system should make sure that there is a place for this car.**

Park out **function allow the driver to pay for the hours he stayed in the garage, and allow the admin to calculate the total hours and total cost.**

**The system should check the slot id.**

View **function help the user to view his slot and how to get to it.**

Exit **function help the user to finish his usage for the system.**

**2. admin:**

**He is the only one that ca view total cost and view the number of vehicles inside the garage**

**3. garage owner:**

**He should check each car dimensions to select the way of parking for each car between first and best where first is the first car get to the slot and best is the most suitable dimensions for each car**

## Non Functional Requirements

|  |  |
| --- | --- |
|  | **Details** |
| **Performance** | * **The system has only 1 second delay after press** |
| **Security** | * **The system uses secured network protocols to keep the drivers data secured** |
| **Scalability** | * **The system could allow up to 10,000 withdrawals per minute** |
| **Reliability** | * **The measuring unit for car dimensions is fixed which is meter** |

# System Models

## Use Case Model

## 

## 

## Use Case Tables

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 1 | | |
| Use Case Name: | Park in | | |
| Actors: | Driver – garage owner | | |
| Pre-conditions: | He must choose the driver choice from the home screen | | |
| Post-conditions: | He will get fixed ID for his slot | | |
| Flow of events:  Notes and Issues: | **User Action** | **System Action** | |
| 1. driver select parkin choice | 2. system displays take info screen | |
| 3. user starts to add his info | 4- saves his info and search for suitable slot. | |
|  | 5- gives the driver fixed id for the slot. | |
| **User Action** | **System Action** | |
| 1. there is no empty places | | 2. garage is full message will appear |

|  |
| --- |
| Includes: full garage which is used when there is no empty slots  View which is used to let the driver view its slot  Exit to get out from the program |
| **Notes and issues: The system has only 1 second delay after press**  **The system uses secured network protocols to keep the drivers data secured** |

|  |  |  |
| --- | --- | --- |
| Use Case ID: | 2 | |
| Use Case Name: | Park out | |
| Actors: | Driver – admin | |
| Pre-conditions: | The system asks for the slot id | |
| Post-conditions: | The admin checks the id and give him a ticket | |
| Flow of events: | **User Action** | **System Action** |
| 1. driver select park out choice | 1. system admin asks for the slot id |
| 2. driver give the admin his id and wait for checking | 3- admin checks the slot id |
| 5. the driver gets the ticket. | 4- the admin gets the slot ticket which contains total hours and total cost |
| Exceptions: | **User Action** | **System Action** |
| 1- admin gets invalid id from driver. | 2- system will ask for valid id |
| Includes: invalid ID which is used when the slot id is wrong  View total cost and view number of vehicles which is used by the admin | | |
| Notes and Issues: **The system could allow up to 10,000 withdrawals per minute** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID: | | 3 | | |
| Use Case Name: | | Select | | |
| Actors: | | garage owner | | |
| Pre-conditions: | | Garage select the of parking | | |
| Post-conditions: | | He will get fixed ID for his slot | | |
| Flow of events: | | **User Action** | **System Action** | |
| 1. the garage owner checks for suitable dimensions for each car | 2. the system suggest two ways of parking which is best or first | |
| 3. the garage owner chooses. |
| **User Action** | **System Action** | |
|  |  | 1. there is no empty places | | Garage is full message will appear |
| Includes: first which means the first car asks for a slot  Best which means the most suitable car for a slot  Check dimension which help the garage owner to compare between slots | | | | |
| Notes and Issues: **The measuring unit for car dimensions is fixed which is meter** | | | | |

# Ownership Report

|  |  |
| --- | --- |
| **Item** | **Owners** |
| **Code implementation** | Mahmoud Adel Mamdouh |
| **Design pattern Code implementation, sequence diagrams** | *Muhammed Gabr and* Mahmoud Adel Mamdouh |
| **Class, sequence diagrams** | *Mahmoud Alaa Eldeen Fathy and Muhammed Gabr* |
| **Use case, requirements ,descriptions** | *Mahmoud Alaa Eldeen Fathy* |