Cairo University  
Faculty of Computers and Artificial Intelligent

**CS251 - Software Engineering I**

Project Name

Software Requirements Specifications (SRS)

Team Names

Abdelrahman Ramadan Abulela 20200284

Ezz Eldin ahmed saber 20200325

Ahmed mabrok Yaseen 20200033

Ahmed helal ragab 20200058

Month & Year

Contents

[Instructions [To be removed] 3](#_Toc101814799)

[Team 3](#_Toc101814800)

[Document Purpose and Audience 3](#_Toc101814801)

[Introduction 3](#_Toc101814802)

[Software Purpose 3](#_Toc101814803)

[Software Scope 3](#_Toc101814804)

[Definitions, acronyms, and abbreviations 3](#_Toc101814805)

[Requirements 4](#_Toc101814806)

[Functional Requirements 4](#_Toc101814807)

[Non Functional Requirements 4](#_Toc101814808)

[System Models 4](#_Toc101814809)

[Use Case Model 4](#_Toc101814810)

[Use Case Tables 5](#_Toc101814811)

[Ownership Report 6](#_Toc101814812)

[Policy Regarding Plagiarism: 6](#_Toc101814813)

# Team

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Name** | **Email** | **Mobile** |
| 20200284 | Abdelrahman Ramadan Abulela | Bodya9936@gmail.com | 01281668851 |
| 20200325 | Ezz Eldin ahmed saber | ezzahmef243@gmail.com | 01156288921 |
| 20200033 | Ahmed mabrok Yaseen | ggggahn351@gmail.com | 01114203258 |
| 20200058 | Ahmed helal ragab | ahmedhelalragab@gmail.com | 01010898837 |

# Document Purpose and Audience

This document shows the requirements of the project, its purpose and its scope . it shows also the use case model and use case table.

The audience if this document project manager, developers , customer

# Introduction

## Software Purpose

System determines arrival and departure time of Vehicles,displays available slots and picks a free slot.

Also Calculates parking fees, total income and total number of vehicles

## Software Scope

Application captures arrival time automaticly from system

Application finds the slot with minimum dimension

Application Calculates fees during stay time by get departure time from system

## Definitions, acronyms, and abbreviations

# Requirements

## Functional Requirements

1 application gets the model name of the car, Model year and vehicle dimensions (vehicle width and depth) from the customer and dentify

unique identification number.

2. Customer books a slot and system record arrival time automaticly

3. Application picks slot with the minimum dimension for vehicle

4. If there is no available slot. Application will send a message to customer

5. Application records departure time

6. Application calculates stay time.

7. Application Calculates fees 5 EGP for hour

8. Application shows message of price to customer

9. Application calculates number of vehicles.

10. Application calculates income

## Non Functional Requirements

|  |  |
| --- | --- |
|  | **Details** |
| **Performance** | * **System should pick slot within 25 second** |
| **Scalability** | * **Target double number of slots** |
| **Capacity** | * **System can get slots for 15 customer at same time** |
| **speed** | * **Application should send message if there isn't available slot within 5 second** |
| **Maintainability** | * **Maintainability should not take more than 30 minutes** |

# System Models

## Use Case Model

**Diagram

Description automatically generated**

## Use Case Tables

|  |  |  |
| --- | --- | --- |
| Use Case ID: | 1 | |
| Use Case Name: | Park-in | |
| Actors: | Car owner, Administrator | |
| Pre-conditions: | The system has the full info of the car | |
| Post-conditions: | the car park in the garage | |
| Flow of events: | **User Action** | **System Action** |
| 1- the car owner orders a slot to park |  |
|  | 2- the system checks if there is an available slot or not |
|  | 3-the system found available slots |
|  | 4-the system tries to find the first free slot available from the parking garage slots |
|  | 5-the system tries to find the minimum space to hold the vehicle |
|  |  | 6-the system found the suitable slot for the car |
|  | 7-The car owner park in the garage successfully |  |
|  |  | 8-The system records the arrival time. |
| Exceptions: | **User Action** | **System Action** |
| 1- The car owner cancels their order. | 2-The system marks the used slot as “available” once more. |
|  | 3-The system didn’t find any slot available for the vehicle |
|  |  | 4-the system rejects the car |

|  |  |  |
| --- | --- | --- |
| Use Case ID: | 2 | |
| Use Case Name: | Park-out | |
| Actors: | Car owner, Administrator | |
| Pre-conditions: | The car is already in the garage | |
| Post-conditions: | The car gets out of the garage | |
| Flow of events: | **User Action** | **System Action** |
| 1-the car owner orders to get out of the garage |  |
|  | 2-The system sets the departure time to calculate the parking fees |
| 3-The car gets out of the garage successfully |  |
| Exceptions: | **User Action** | **System Action** |
|  | 1-the system is lost. |
|  |  | 2-The registration is closes. |

|  |  |  |
| --- | --- | --- |
| Use Case ID: | 3 | |
| Use Case Name: | Calculate-parking-fees | |
| Actors: | Administrator | |
| Pre-conditions: | The park-out function occurred successfully | |
| Post-conditions: | The car owner paid successfully | |
| Flow of events: | **User Action** | **System Action** |
| 1- The owner parks in. |  |
|  | 2- The system records the parking time. |
| 3- The owner leaves. |  |
|  |  | 4-The system records the leaving time. |
|  |  | 5-The system calculates the total stay time according to the formula:  stay time = leaving time – parking time. |
|  |  | 6- The system calculates the total fee according to the formula:  5\*stay time. |
|  |  | 7- The system sends a confirmation message including the total fees. |
|  | 8- The user confirms the payment process. |  |
|  |  | 9- The system records the fee. |
| Exceptions: | **User Action** | **System Action** |
| 1-The user doesn’t have enough money in his credit card. |  |
|  | 2-The system offers other payment methods. |
|  | 3- The user doesn’t confirm the payment message. |  |
|  |  | 4- The system re-sends the payment message. |
|  | 5- The user refuses to pay. |  |
|  |  | 6-The system adds to the user to the black-list. |

|  |  |  |
| --- | --- | --- |
| Use Case ID: | 4 | |
| Use Case Name: | Display-available-slots | |
| Actors: | The car owner | |
| Pre-conditions: | The owner ordered to park. | |
| Post-conditions: | The owner selects a slot or cancels their order. | |
| Flow of events: | **User Action** | **System Action** |
| 1- The owner orders to park. |  |
|  | 2-count number of the slots in the garage |
|  |  | 3-count the number of the vehicles in the garage in this time |
|  |  | 4-the difference between the two points is the available slots |
|  |  | 5-display the available slots |
|  | 6- The owner chooses a slot. |  |
|  |  | 7- The system marks the chosen slot as “taken”. |
|  | 8- The owner cancels the order. |  |
| Exceptions: | **User Action** | **System Action** |
| 1- The owner cancels the order after choosing a slot. |  |
|  | 2-The system redeems the slot as “available”. |

# Ownership Report

|  |  |
| --- | --- |
| **Item** | **Owners** |
| Software scope and purpose and requirements | *Abdelrahman ramadan* |
| Use case diagram | *Ahmed helal* |
| Use case table | *All team* |