Cairo University
Faculty of Computers and Artificial Intelligent

CS251

Software Engineering 1

Project Name: Software Design

Team Names:

ID	Name
20200558	Mennatullah Sayed Abo-Elhgag
20201080	Reham Hatem Mohamed
20200813	Youssef Diaa El-Sayed
20200510	Marwan Tarek Awad

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Software Requirements Specifications

Document Purpose and Audience

- This document is related to a software project which is talking about a parking area and it includes the functional and non-functional requirements and use case table that expresses how the system components should work;
- it is allowable to be read by our TA or Doctor or customer;

Introduction

Software Purpose

- **the purpose of the software is to solve a problem faced the customer and as we are a software engineers, we must handle the problem to the customer after listening to his requirements**

Software Scope

- Software for the parking area system having many benefits and many features on it which make the system easily to use and its performance quick.
- The system also is safe because it contains camera's and there's also security guards to make the parking area system safer.
- The feature of the system is that it present to the user the best place to park in in the parking area and it also take the entry time of the driver automatically so it can calculate how many hours have the car parked in the parking area.

Definitions, acronyms, and abbreviations

ATM: Automated teller machine.
APP: Application.
Src code: source code.

Requirements

Functional Requirements

- The system allows the customer to parking his car by entering an electronic gate to find an empty slot to put his car in ,in each slot there is a maximum size that is suitable for the car to be putted in and the system provide to the customer which slot is suitable for the user by scanning the car size and giving him a ticket having the id number of this slot.
- The system calculating the entry time that the customer put his car in the parking to calculate the cost when the customer will leave.
- The system provides the user two ways for paying which is pay in cash or using his ATM card.
- The system is secured by cameras and bodyguards to make the customer car in a safe place.

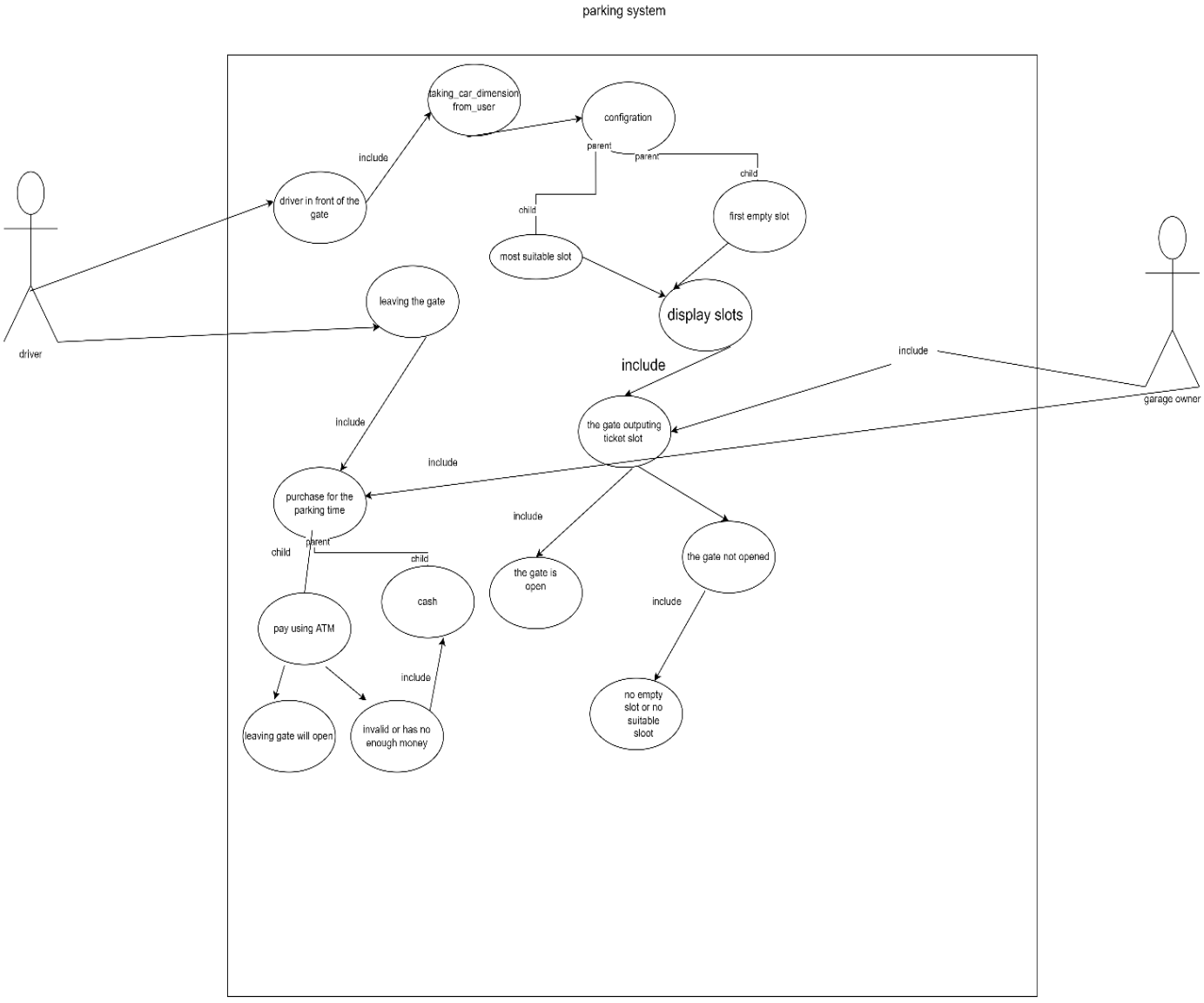
Software Requirements Specifications

Non-Functional Requirements

- The system performance can accept a car to enter within 30 sec which means that the system performance per min is to accept two cars.
- The system scalability is to accept 100 cars.
- The system has a feature which it is easy to be usable, the user just needs to be in front of the electronic gate and everything is automated by the system.

System Models

Use Case Model



Software Requirements Specifications

Use Case Tables

Use Case ID:	1	
Use Case Name:	Paying for the parking	
Actors:	The driver	
Pre-conditions:	Entering the parking area	
Post-conditions:	Exiting the parking area	
Flow of events:	**User Action**	**System Action**
	1- User Enter the electronic gate	
		2- System Verify the user car
	3- User get his slot ticket	
		4- System open the electronic gate
	5- the user put his car in the slot number that he is found it on ticket	
	6-the user exiting the parking area	
		7-the system calculating the time that the car was in the parking area
	8-the user pay for the time in the parking by a cash way	
		The system opens the gate for the user to leave
Exceptions:	**User Action**	**System Action**
	1- User Enter the electronic gate	
		2- System Verify the user car
	3- User get his slot ticket	

		4- System open the electronic gate
	5- the user put his car in the slot number that he is found it on ticket	
	6-the user exiting the parking area	
		7-the system calculating the time that the car was in the parking area
	8-user paying for his parking time but he found that he does not having enough money so he will pay using ATM card.	
		9- the system drops down.
		10- the security guy used to calculate the payment of the user using the ticket which is having the arrival time until the system come back and then recording the process to it.
Includes:		
Notes and Issues:		

Use Case ID:	2	
Use Case Name:	Getting the slot ticket	
Actors:	The driver	
Pre-conditions:	Entering the parking area	
Post-conditions:	The user got his ticket to enter the parking area	
Flow of events:	**User Action**	**System Action**

	1- User is in front of the electronic gate	
		2- System Verify the user car to give him suitable slot
	3- User get his slot ticket	
		4- System open the electronic gate
	5- the user out his car to slot and he found that it is suitable for the car	
Exceptions:	**User Action**	**System Action**
	1- User is in front of the electronic gate	
		2- System Verify the user car to give him suitable slot
	3- User get his slot ticket	
		4- System open the electronic gate
	5- the user put his car in the slot number that he is found it on ticket, but he found that the slot is not suitable for his car size	
	6- the user returned to the system to change the ticket	
		7- the system changed the slot area for the user after scanning the car size once more
	8- the user put his car in the slot, and he found that it is suitable for the car	
Includes:		

Notes and Issues:	

Use Case ID:	3	
Use Case Name:	Driver enters the gate	
Actors:	The driver, security	
Pre-conditions:	The driver is front of the gate	
Post-conditions:	Entering the gate	
Flow of events:	**User Action**	**System Action**
	1-the driver is front of the gate	
		2-The gate scanning the car size
		3- the gate outing the ticket id
	4-the driver gets the ticket	
		5- the gate opens
Exceptions:	**User Action**	**System Action**
	1- The driver is front of the gate	
		2- The gate scanning the car size
		3- the gate outing the ticket id
	4- the driver gets the ticket	
		5- the gate doesn't open

		6- the security opens the gate manually
Includes:		
Notes and Issues:		

Use Case ID:	4	
Use Case Name:	The parking is full	
Actors:	The driver, security	
Pre-conditions:	Getting the ticket and entering the parking	
Post-conditions:	The driver parks his car	
Flow of events:	**User Action**	**System Action**
	1-the driver is front of the gate	
		2-The gate scanning the car size
		3- the gate outing the ticket id
	4- the driver gets the ticket	
		5- the gate opens
	6- the driver finds place and parks his car	

Software Requirements Specifications

Exceptions:	User Action	System Action
	1-the driver is front of the gate	
		2-The gate scanning the car size
		3- the gate outing the ticket id
	4- the driver gets the ticket	
		5- the gate opens
	6- the driver enters the parking and finds no place to park in	
	7- the driver returns to the gate and rechange his ticket	
		6- the security takes the ticket back
Includes:		
Notes and Issues:		

Ownership Report

Item	Owners
functional requirements, Nonfunctional requirements	**Marwan Tarek Awad**
Use case model	**Youssef Diaa El-Sayed**
Use case table	**Reham Hatem Mohamed**