

PROJECT ON  
**Parking Management System**  
**In Jeddah**

**DESIGNED AND DEVELOPED**

BY

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UNDER THE GUIDANCE OF

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UNIVERSITY OF

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**(2022-2023)**

# INTRODUCTION

## Introduction

Nowadays, urban demographics and population growth require new approaches and models for delivering public services and new lifestyles. There is a global trend to present these ideas as enhanced services with a technology called (SMART). That is why policies in urban cities around the world are competing for effective initiatives to implement smart city concepts to ensure modern living standards and keep pace with the rapid and continuous development of technologies. Some may see the concept of smart cities as a luxury, but it will be necessary to improve the quality of life for citizens and increase economic growth in the future. In Saudi Arabia and especially in the city of Jeddah, there are ongoing initiatives to adopt smart city concepts in several areas such as health, government, energy, transportation, etc. This project is focused on transportation. This project presents a smart parking system as a solution to organize the parking process in public places such as hospitals and markets

This project presents the work of smart parking in Jeddah as follows:  
Transportation in Jeddah An overview of the current situation and government initiatives with parking problems. It also provides a smart parking system GUI, project analysis, business model, and illustrations of how the project works.

## **Stage I: Pre-initiation and Initiation**

## **1.1 Business case:**

A business case outlines the overall costs and risks and compares them to the benefits that justify the initial and ongoing commitment of time, resources, and funding for a parking Management System.

### **1.1.1 Strategic business objective**

The main objective of the car parking system project is to manage the details of the car, car parks, parking spaces, car park, parking area located in Jeddah. Manages all information about the vehicle, parking fee, parking area and vehicle. The purpose of the project is to build an application software to reduce the manual work of car management, parking lots, parking fees and parking lots. It tracks every detail about parking spots, parking slot, and parking are

## **Definition of problem:**

The problem in this project is the lack of knowledge of the details of the car or the available parking spaces in the city of Jeddah, and to reduce the manual work of cars, parking lots and parking fees paid by the owner of the car because he does not know whether this place can park the car or not

### **1.1.2 Software requirement**

The Software Requirements is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioral description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

## **System requirements:**

- System needs store information about new entry of Car
- System needs to help the internal staff to keep information of
- Parking and find them as per various queries.
- System need to maintain quantity record.

- System need to keep the record of Parking Space
- System need to update and delete the record.
- System also needs a search area.
- It also needs a security system to prevent data.

### **User Requirements**

The following user requirements were attained:

- The system allows drivers/clients to create accounts on it
- The system allows the system administrator to: book the parking place, printing their receipt , managing the client and parking lot information(such as deleting, updating, adding viewing the client information and viewing different type of parking lot status)
- The system allows drivers to locate and reserve a parking place online through accessing it on web platform
- The system allows the client and the system administrator to view the parking status (either available or already reserved)
- The system allows authentication of registered users
- The system is easy to use and learn.
- the system allows the clients to view their account info (booking status) and also to print receipt

### **Functional Requirements**

- The application enables employees to set the reaching date and time for the car also the departure date and time.
- The application enables employees to cancel a parking place.

### **Non Functional requirements**

- The designed system should have little or no down time. It should always be up and running.
- The system should have a fast response time. System should not take more than 30 seconds minus loading
- The system should be secure. User should fill in his/her email address and password so as to be authenticated to the system
- The system should allow the customer to park without making a reservation.

- The system should be scalable. Even with an increasing number of users, system should be able to perform effectively
- The system should be user friendly with ability to show users where they are in the system and guide them on some processes through programmed controls.
- The system should be reliable. In case of system failure, the system should be able to recover quickly and continue working normally

### **1.1.3 Budget estimates**

Software cost comprises a small percentage of overall computer-based system cost. There are a number of factors, which are considered, that can affect the ultimate cost of the software such as -human, technical, Hardware and Software availability etc.

The main point that was considered during the cost estimation of project was its sizing. In spite of complete software sizing, function point and approximate lines of code were also used to "size" each element of the Software and their costing.

The cost estimation done by me for Project also depend upon the baseline metrics collected from past projects and these were used in conjunction with estimation variables to develop cost and effort projections.

We have basically estimated this project mainly on two bases

#### **1) Effort Estimation**

This refers to the total man-hours required for the development of the project. It even includes the time required for doing documentation and user manual.

#### **2) Hardware Required Estimation**

This includes the cost of the PCs and the hardware cost required for development of this project.

### **1.1.4 Project Scheduling**

An elementary Gantt chart or Timeline chart for the development plan is given below. The plan explains the tasks versus the time (in weeks) they will take to complete.

	January				February				March			
Requirement Gathering												
Analysis												
Design												
Coding												
Testing												
Implement												
	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4

## 1.2 stakeholder register

Name	position	Internal\external	Project role	Contact
Aya montazr	Department manager	internal	sponsor	ayamontazr@gmail.com
Lujain Aloufi	Senior Consultant	Internal	Team member	lujainaloufi@gmail.com
Ahmed abdallh	Business analyst	external	advisor	Ahmed55@gmail.com
Mohamed mostafa	Business analyst	external	advisor	mohamedmostafa@gmail.com
Magdy omer	CEO	internal	sponsor	Magdyomer@gmail.com



### 1.3 strategy of stakeholders

Name	Level of interest	Level of influence	Potential management strategies
Aya montazr	interest	high	Aya is interested of this project and want this project to be helpful as possible to Jeddah
Lujain Aloufi	interest	high	Lujain is interested in the project because she has a subject and wants to make a project by studying this subject
Ahmed abdallh	interest	high	When Ahmed heard about this idea, he gave it all his interests because it is being discussed
Mohamed mostafa		high	Mohamed was not interested in this idea at all, but when we suggested it to him, he changed his mind and preferred to stay with us and work on this project.
Magdy omer	interest	high	He want to Make money from this project

### 1.4 project charter

**Project name :** Parking Management System In Jeddah

**Project start date :** 1/1/2023

**project finish date:** 23/3/2023

**Budget information :** the firm has allocated 5000.00 \$ for this project

**Project manager:** Jana Aloufi Janaaloufi@gmail.com

**Project objectives:** The main objective of the car parking system project is to manage the details of the car, car parks, parking spaces, car park, parking area located in Jeddah. Manages all information about the vehicle, parking fee, parking area and vehicle. The purpose of the project is to build an application software to reduce the manual work of car management, parking lots, parking fees and parking lots. It tracks every detail about parking spots, parking slot.

Main project success criteria: the project should pay for itself within one year of completion

ROLES AND RESPONSIBILITIES

Name	position	Internal\external	Project role	Contact
<b>Aya montazr</b>	Department manager	internal	sponsor	ayamontazr@gmail.com
<b>Lujain Aloufi</b>	Senior Consultant	Internal	Team member	lujainaloufi@gmail.com
<b>Ahmed abdallh</b>	Business analyst	external	advisor	Ahmed55@gmail.com
<b>Mohamed mostafa</b>	Business analyst	external	advisor	mohamedmostafa@gmail.com
<b>Magdy omer</b>	CEO	internal	sponsor	Magdyomer@gmail.com

## 1.5 kick-off meeting

**Project name :** Parking Management System In Jeddah

**Meeting Objective:** get the project off to an effective start by introducing key stakeholders and discuss the plan

**Agenda :**

- Introduction of attendees
- Review project background
- Discussion of project organizational structure
- Discussion of project scope, time and cost
- Discussion of other important topics
- List of action items from meeting

Action item	Assigned to	Due date
Financing the required cost of the project	Aya montazr and Magdy omer	26 February
Help in doing project analysis	Ahmed abdallh and Mohamed mostafa	20 January
Help the team to doing the project in the time	Lujain Aloufi	30 march

## **Stage II: Planning Stage of Scope, Time, and Cost.**

## **2.1 project scope statement**

### **2.1. Planning scope**

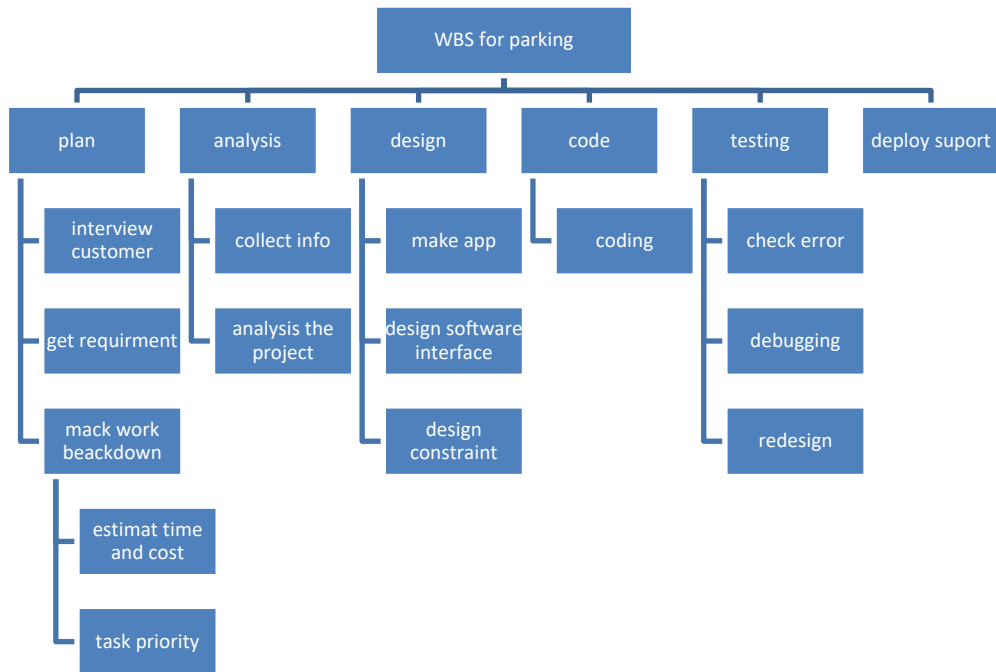
#### **Scope:**

It may help collect perfect management in details. In a very short time, the combination will be clear, simple and affordable. It will help a person to fully and clearly know the management of the past year. It also assists in all current works related to the car parking system. The collection cost of management and collection procedures will also be reduced smoothly.

Our project is aimed at automating business processes, that is, we have tried to computerize the various processes of the parking system.

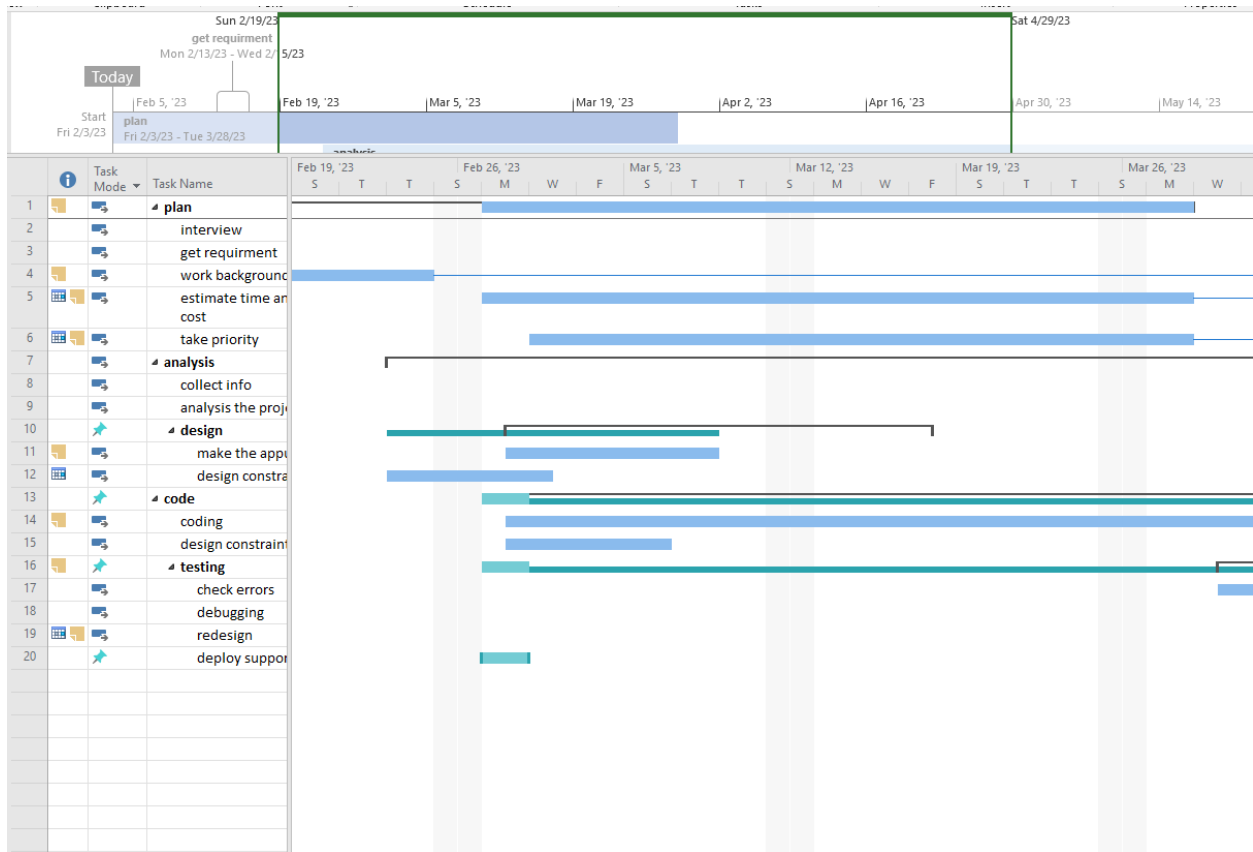
- It will be easy for the person to fill in the various forms and it is easy to create a number of copies of the forms at a time.
- It is not necessary to generate the statement but we can print it directly, saving our time. To assist employees in capturing effort in their own work areas.
- Increase their productivity through automation.
- The system generates types of information that can be used for various purposes.
- Meets user requirements.
- Easy to understand by the user and the operator.
- Easy to operate.
- Enjoy a good user interface. Expandable

## **2.2 project WBS (Work Breakdown Structure)**

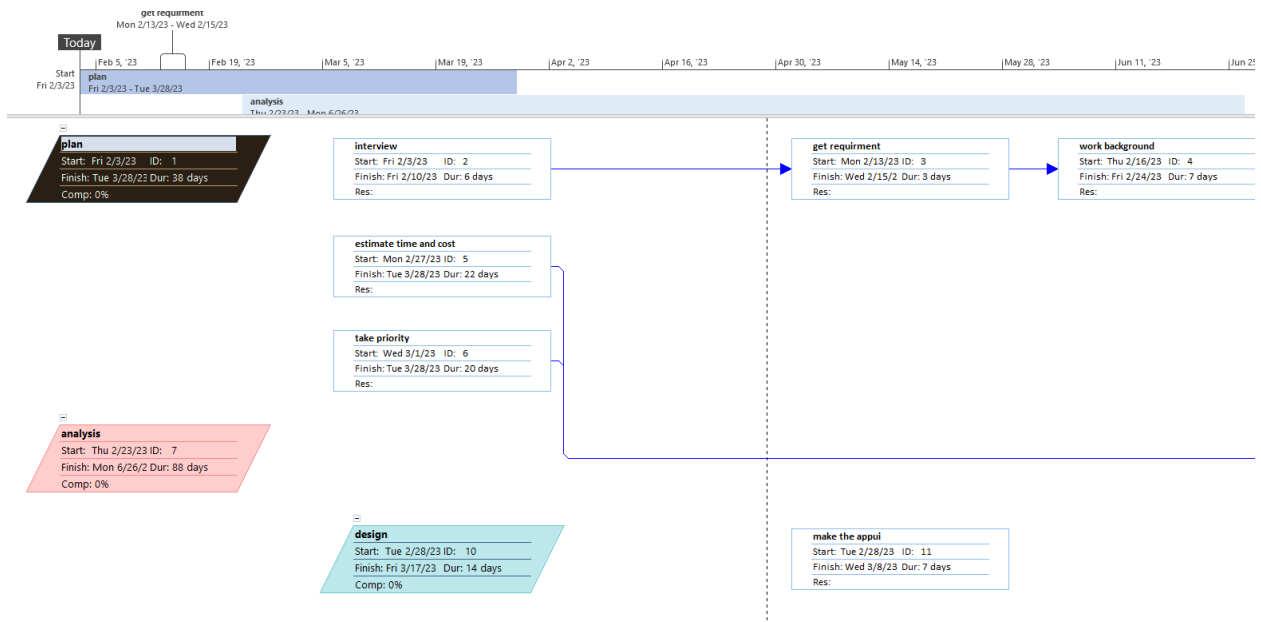


## 2.3 WBS Gantt chart

# Parking Management System



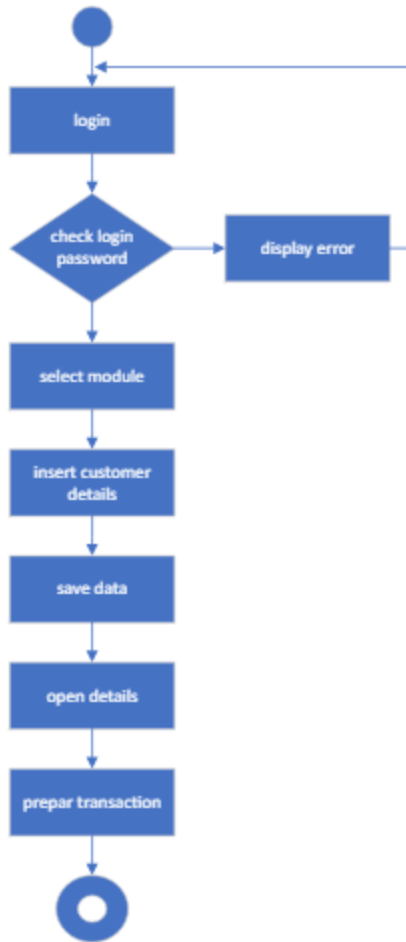
## 2.4 Network Diagram



## User activity



**Admin activity**



## Conclusion

This project works to facilitate life on the city of Jeddah, users can park their cars in the areas allocated to them, and this was done through the project planning through the knowledge of the project, its problem, objectives, illustrations, knowledge of the costs of the project and its beneficiaries.