University of Hail
College of Computer Science and Engineering
Department of Software Engineering

Course Project Handbook: Software Project Management

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First Semester 1447 AH / 2025 CE

Table of content

Phase	Timeline	Expected Deliverables	Marks	Mark
1) Problem Analysis & Scope Definition	Weeks 1–3	Problem statement, objectives, initial risk report	4	
2) Planning & Methodology Selection	Weeks 4–5	Project plan & schedule (Gantt), roles & responsibilities	5	
3) Execution & Design	Weeks 6–8	Prototypes, system design, evidence of tool usage	6	
4) Monitoring & Review	Weeks 9–11	Progress reports, updated risk log, weekly meeting minutes	4	
5) Evaluation & Delivery	Weeks 12–15	Final report, oral presentation, delivery package	6	
Total			25	

Phase-1: Problem Analysis & Scope Definition

Problem statement:

Finding parking slots in university is a daily struggle for students and staff, Cars often circle around looking for available slots, wasting their time And causing unnecessary traffic congestion, this results in late arrivals to classes And inefficient use of available parking slots.

project objectives:

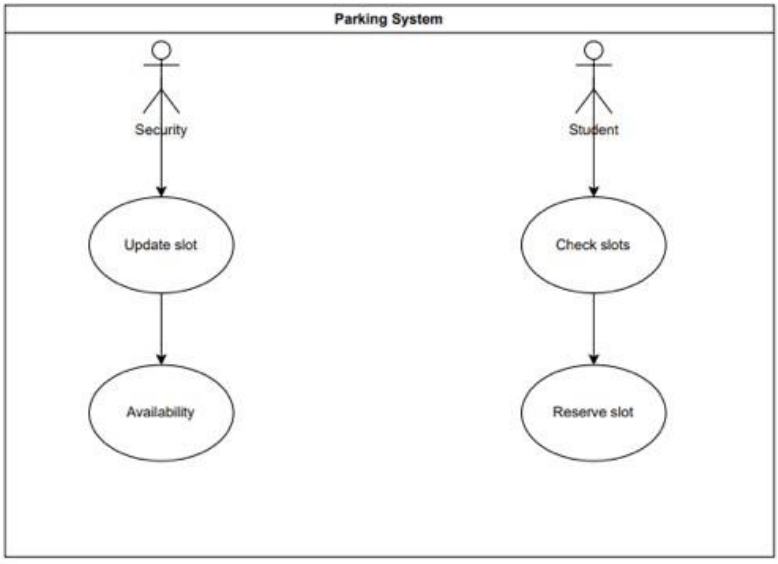
- Provide a simple interface for students to view available parking slots
- Reduce the time to find a parking space
- Improve traffic flow inside the university

Project scope:
In Project Scope we Aimed for:

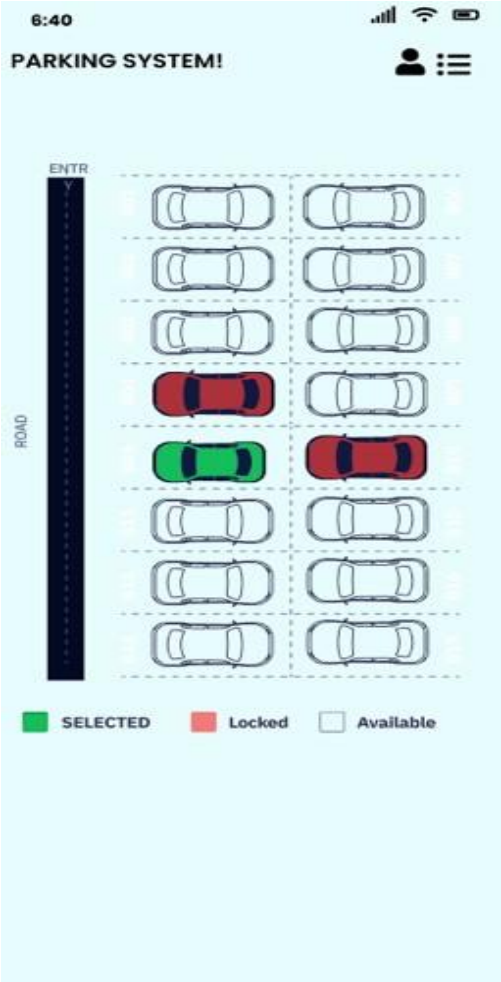
- Mobile mockup to display available slots

- Basic reservation feature (students can reserve a slot for a short time)

In here we made a use case diagram for the System to display what the student will interact with and the same thing for the security



In here we made a map page design for university parking using Figma:



The initial risks for this Project consist of :

Risk	Description	Probability	Impact	Mitigation
R1	Parking slot data not updated on time	Medium	High	Allow manual admin updates
R2	Students don't adopt the app	Low	Medium	Provide awareness & integrate with student portal
R3	Team delays in submitting work	High	High	Weekly meetings + strict deadlines
R4	Miscommunication among team members	Medium	High	Use Click Up or social media Platform like WhatsApp for task tracking

Phase-2: Planning & Methodology Selection

In this phase we make the planning and methodology by making WBS & creating Gantt chart but first we need a suitable methodology for it

In this phase we chose waterfall model, and we will provide the reasons why we chose this methodology

- **We selected waterfall model for the parking slot finder because it offers a structured and sequential process that aligns perfectly with the project phased based grading**
- **The project has clear and well-defined requirements and a fixed semester timeline which makes waterfall suitable for it**

Work breakdown structure (WBS)

Level 1 – Project **Parking slot finder for university**
Level 2 – main deliverables 1. **Problem analysis & scope definition** 2. **Planning & methodology** 3. **Execution & design** 4. **Monitoring & review** 5. **Evaluation & delivery**
Level 3 – subtasks per main task
1. **Problem analysis & Scope definition** **1.1 Problem statement** **1.2Define Objectives** **1.3Define project scope** **1.4Create use case diagram** **1.5Provide a Figma example** **1.6Identify risks** **1.7Assign roles & responsibilities**
2. **Planning & methodology** **2.1 Chose a methodology** **2.2Create WBS** **2.3Create Gantt chart**
3. **Execution & design** **3.1Create Figma mockup** **3.2Design system Diagram** **3.3Review & update design**
4. **Monitoring & review** **4.1Conduct team meeting** **4.2Prepare progress report** **4.3Update the risks Table**
5. **Evaluation & Delivery** 5.1 **Prepare final report** 5.2 **Final review meeting** 5.3 **Prepare PowerPoint presentation**

Phase-3: Execution & Design

In this Phase we will Provide The full Design and Explain How the System Works

Credentials Page:

- **The System will Have a Login Page using university Email – password**

Main Page:

- **Home Page To Display the Time and Today`s date and a Reservation button + Change button if a student Want to cancel reservation**

Reservation Page:

- **A Page Where a Student Can see a Calander and colors on each day to represent if that day will be trafficked or not**
- **A page to showcase a design that looks like a map to visualize if the specific parking slot is available or locked by another student**

Confirmation Page:

- **Last Page to Confirm Reservation**

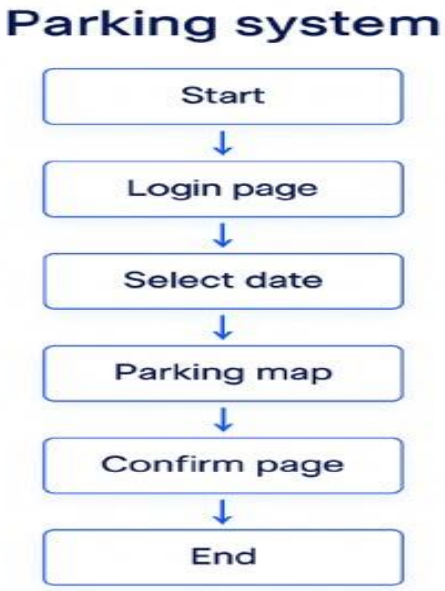
Execution:

- **The System is Made in Figma so The Execution Cant be done as intended but the execution should be as follows:**

  - **Student Reserve a Parking Space**
  - **Receive a message with the Parking space Number**
  - **Cancellation if the student wanted**

The Design Solves a huge problem regarding the rate of late students or sometimes the staff can't find a space so they also be late for the classes

- **Solves Traffic**
- **Solves searching time**
- **Reduce the accidents rate**



Phase-4: Monitoring & Review

During the Monitoring & Review phase, the project team consistently tracked progress through weekly reports, task completion sheets, and scheduled evaluations. This phase aims to confirm that all deliverables from the Execution & Design phase were completed on time and that any delays were effectively addressed.

Meeting minutes:
We calculated all meeting minutes using discord timer
And averaged 30 minutes per meeting and the Total is
360 minutes from October 5th until November 30th

Task Tracking:

We Tracked Each Phase Using Weekley reports and there were minor delays (1 Day delay at Max) caused by personal events for 2 members but managed correctly

Using Pair Programming method and Correct Task distribution

Leadership and Member fairness in Tasks:

We Faced a Few Problems Regarding How we will distribute tasks between members and what is the most fair way to do it And the Most effective way was the Pair Programming method and the plan was like this:

- **2 system designers, 1 designer lead and the other follows and make the diagram and this made both members work equally well and learn together**
- **2 UI/UX Design the Project and work on 2 pages for each on and a total of 4 Pages**

Updated Risk Table:

Risk	Probability	Impact	Mitigation
Some members couldn't work designing due to personal events lack of devices	low	high	Use pair programming method and make the member with no device lead the design and decided everything
Inconsistent diagrams or UI screens not matching the system flow	Low	high	Re-check diagrams and screens to ensure the flow is correct

References

No Refrence.

Appendixes

Appendix-A: Weekley Reports

REPORT #1 Phase #1 WEEK 7

Objectives
State the problem & set Objectives
Project scope and a diagram to visualize the flow
Provide a FIGMA Mockup to visualize how the parking Project will look like
Create a risk table for now and Update in Later Phases

Task distribution

Member	Role	Task	Work Done
Sultan Alqassim	Project Manager	State Problem&Objectives	100%
Nawaf Alsaqabi	System designer	Diagram	100%
Abdulaziz Alshammari	System Designer	Project Scope	100%
Abdulaziz Alsaeed / Amir Alshammari	UI/UX designer	FIGMA Design	100%

(problem analysis and scope)
Problem statement (by project manager):

Finding parking slots in university is a daily struggle for students and staff,
Cars often circle around looking for available slots, wasting their time
And causing unnecessary traffic congestion, this result in late arrivals to classes
And inefficient use of available parking slots.

project objectives (by project manager):

- **Provide a simple interface for students to view available parking slots**
- **Reduce the time to find a parking slot**
- **Improve traffic flow inside the university**

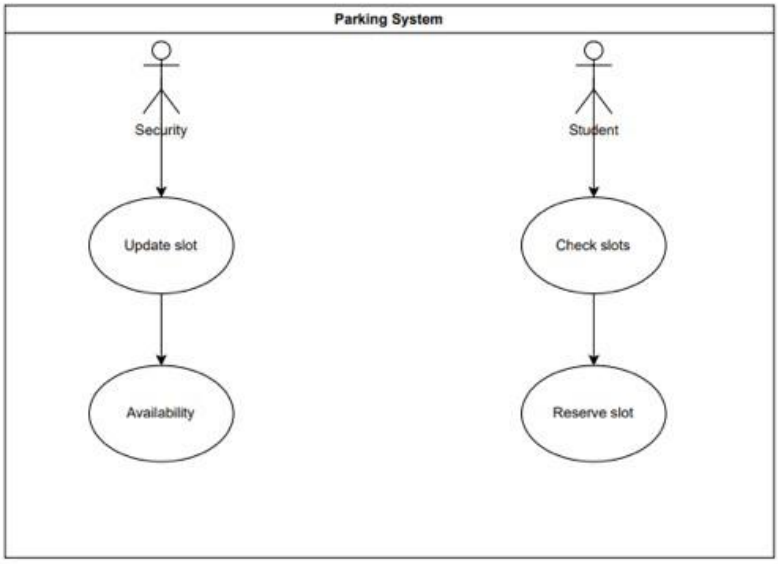
Project scope (By System designers):

In Project Scope we Aimed for:

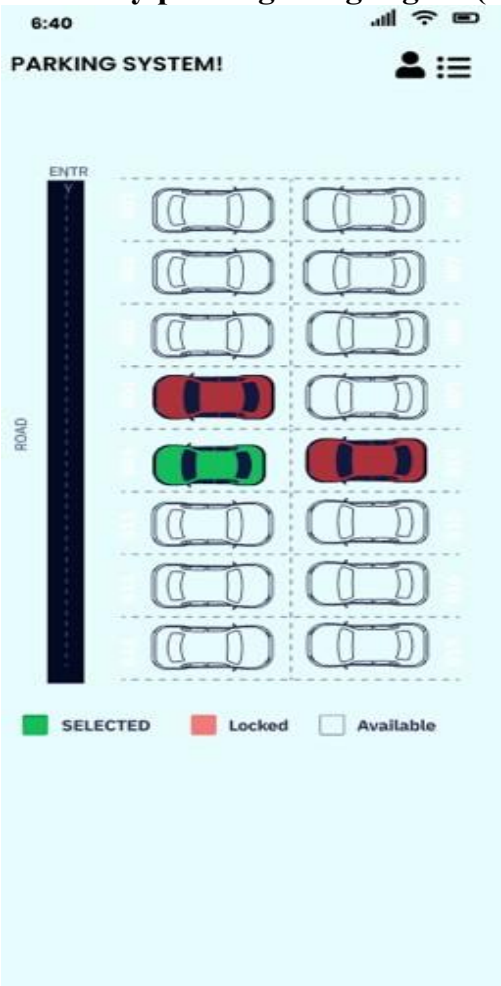
- **Mobile mockup to display available slots**

- **Basic reservation feature (students can reserve a slot for a short time)**

In here we made a use case diagram for the System:



In here we made a basic initial design without interactions for university parking using Figma (By UI/UX designers):



After 2 meetings (45 min each) we discussed potential risks that might occur in this system (By All members)

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202102506	Sultan Alqassim	Project Manager	Task assignment, host meetings, plans and do Gantt chart, Track Progress Documentation and reports
202103763 202103418	Nawaf Alsaqabi, Abdulaziz Alshammari	System Designers	Project scope, System Diagrams, reviews, Update Risk Table
202200046 202100919	Abdulaziz Alsaeed, Amir Alshammari	UI/UX Designers	Figma Design, Review & Update Design, Update Risk Table

- **Note that we are adopting a (pair programming) method to make sure every member can work equally and to make the review process easier.**

REPORT #2 WEEK 10

PHASE #2

Create Work Breakdown Structure

Create Gantt chart

This Phase is done by PM Because It is a Planning & methodology Phase only

Phase 2 – planning & methodology

In this phase we make the planning and methodology by making WBS & creating Gantt chart but first we need a suitable methodology for it

In this phase we chose waterfall model, and we will provide the reasons why we chose this methodology

- We selected waterfall model for the parking slot finder because it offers a structured and sequential process that aligns perfectly with the project phased based grading
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Work breakdown structure (WBS)

Level 1 – Project

Parking slot finder for university

Level 2 – main deliverables

6. Problem analysis & scope definition
7. Planning & methodology
8. Execution & design
9. Monitoring & review
10. Evaluation & delivery

Level 3 – subtasks per main task

6. Problem analysis & Scope definition	1.1 Define Problem statement 6.2 Define Objectives 6.3 Define project scope 6.4 Create use case diagram 6.5 Provide a Figma example 6.6 Identify risks 6.7 Assign roles & responsibilities
7. Planning & methodology	2.1 Chose a methodology 7.2 Create WBS 7.3 Create Gantt chart
8. Execution & design mockup	3.1 Create Figma 8.2 Design system Diagram 8.3 Review & update design
9. Monitoring & review meeting	4.1 Conduct team 9.2 Prepare progress report 9.3 Update the risks Table
10. Evaluation & Delivery	5.1 Prepare final report 10.2 Final review meeting 10.3 Prepare PowerPoint presentation

REPORT#3 PHASE#3 WEEK12

In this week our Plan is to discuss what should be done this week starting from NOV16th
And after our meeting on Sunday we discussed what diagram should be used
And we decided that we will make System flow diagram to visualize the design from
Start to finish, and based on it we will design using FIGMA.

- The flow should look like this

Login Page
Main Page featuring schedule button

Schedule Page to pick the Date and time
Parking Map showcasing Available slots as Cars

We planned by the end of this week we will be done with the First Half of Phase#3
(Design) the next week we will be reviewing the project and make adjustments if needed

- Task distribution this week

Member	Role	Task
Sultan Alqassim	Project manager	Host daily meetings to plan & review
Nawaf Alsaqabi	System design	Design System flow diagram
Abdulaziz Alshammari		
Abdulaziz Alsaeed / Amir Alshammari	UI/UX design	Design The system using FIGMA

What to expect next week?
- A full system flow diagram showcasing the process from start to end

A full FIGMA design showcasing the UI of the System

REPORT#4 PHASE 3,4 WEEK13

In this week we fully finished our work, first we finished our Use case diagram to visualize user interaction with the System and then we designed System flow diagram to visualize The Path and based on it we designed the Figma design, and calculated meeting minutes using discord to track how many minutes we spend discussing the ideas and task distribution
From first week of work until this week we have arranged a meeting every Saturday for 30 minutes

Weekley meeting count

Minutes: 360
Hours: 6

Member	Role	Task
Sultan Alqassim	Project manager	Host daily meetings to plan & review
Nawaf Alsaqabi	System design	Design System

Abdulaziz Alshammari		flow diagram
Abdulaziz Alsaeed / Amir Alshammari	UI/UX design	Design The system using FIGMA

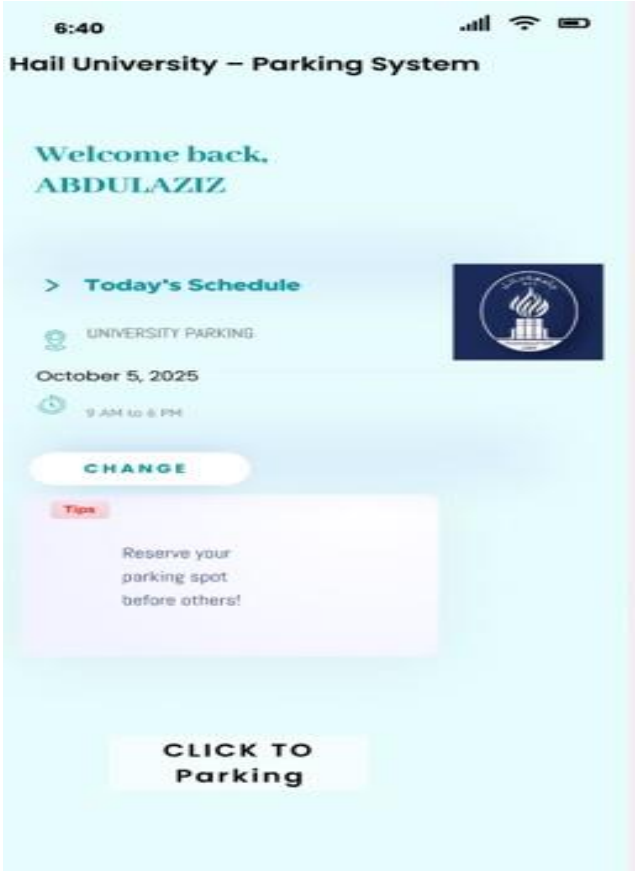
What to Expect Next Week?

- Deliver the final Project and Display it Using PowerPoint
- Distrbute each Tasks on Members to explain What they Did on Each Task

Appendix-B: Protype

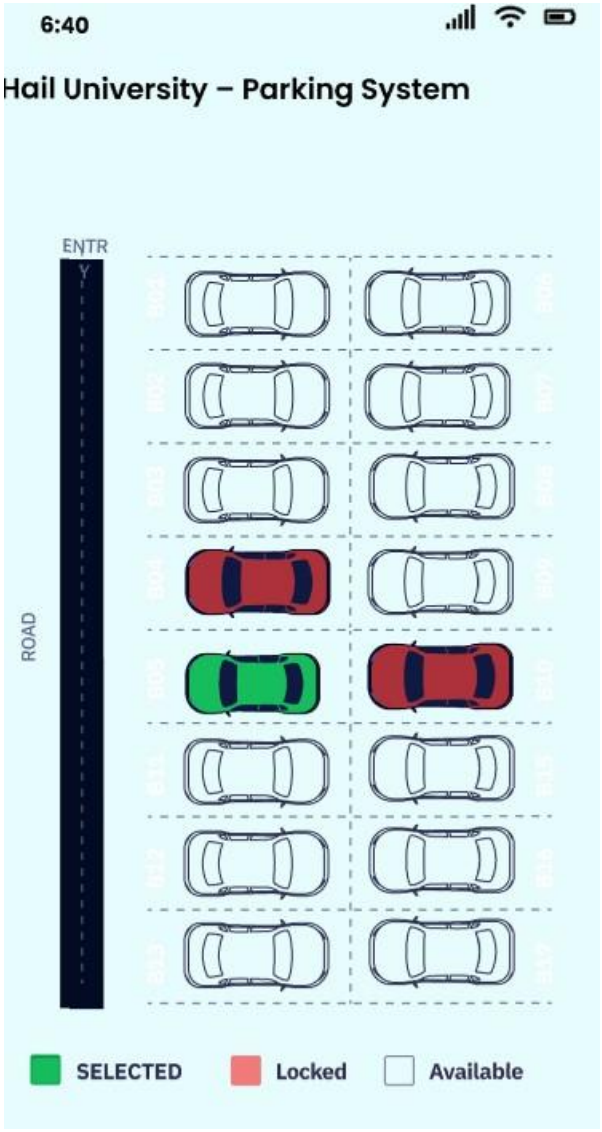
Page 1 : Login Page using University email-password

Home Page where You can change the date or reserve a parking space



Schedule a parking date and visual indectors to show the days where it is trafficked and the normal traffic or there is no traffic

A Map To visualize where exactly you will be going to



Last Page to Confirm Your reservation


6:40
Hail University – Parking System
Confirm PARKING