

C-SW312 – Deliverable #4 Report
Automated University Garage Management System (AUGMS)

Course: C-SW312: Introduction to Software Engineering

Semester: Fall 2025

Submission Date: December 14, 2025

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1. Introduction

- Identification of required user interfaces for the selected use cases.
 - Menu design, including grouping rationale in a table and hierarchical structure with navigation flow.
 - Storyboards depicting user-system interaction sequences for each use case.
 - Web-based UI screen prototypes designed in Figma, adhering to UI/UX best practices, storyboard layouts, and menu consistency.
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2. Selection of Five Core Use Cases for UI Design

#	Use Case ID	Use Case Name	Primary Actor	Reason for Selection (Core + UI-Intensive)
1	UC-101	Register Vehicle	Student / Faculty	First-time user register, many input fields
2	UC-201	Review & Approve/Reject Vehicle Registrations	Garage Admin	Classic admin screen with decision flow
3	UC-104	View Real-Time Parking Availability & Dashboard	ParkingUser	Most frequently used, data-rich screen
4	UC-105	Request Additional Service (EV Charge / Car Wash)	ParkingUser	Transactional, status tracking
5	UC-201 + UC-203	Manage Vehicles & Service Requests (Admin)	GarageAdmin	Represents the admin side

3. User Interfaces Required to Support the Five Use Cases

Complete List of User Interfaces

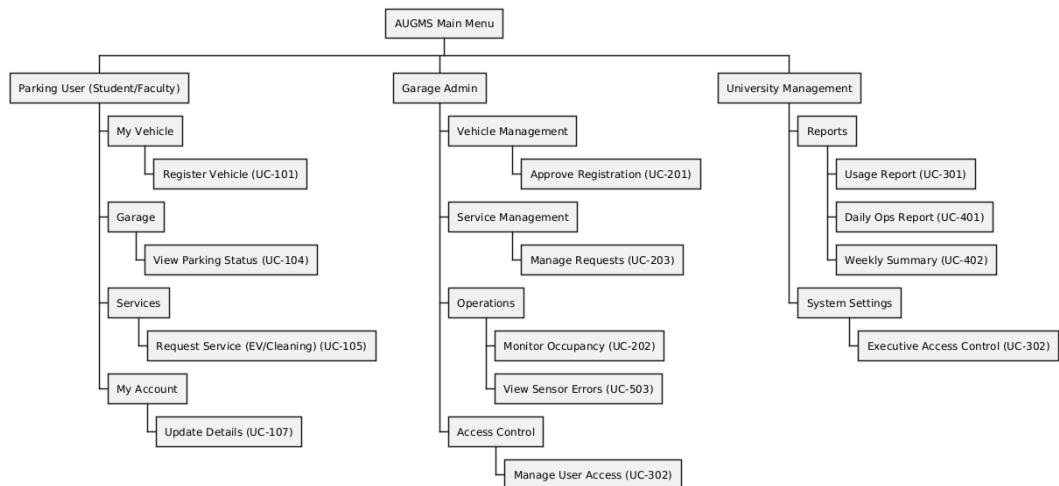
UI ID	Interface Name	User Role	Device / Access Method
UI-01	Registration Screen	All	Mobile
UI-02	Login Screen	All	Mobile
UI-03	Vehicle Registration Form	ParkingUser	Mobile
UI-04	Check Vehicle Registration Status	ParkingUser	
UI-05	Real-Time Parking Map & Availability / Home Dashboard (User)	ParkingUser	Mobile
UI-06	Select Parking Sport	ParkingUser	Mobile
UI-07	Service Request Form	ParkingUser	Mobile
UI-08	Service Transaction	ParkingUser	Mobile
UI-09	My Service Requests (Status Tracking)	ParkingUser	Mobile & Web
UI-10	Service Request Management	GarageAdmin	Web
UI-11	Pending Vehicle Approvals	GarageAdmin	Web

3. Menu Design

(a) The Menu Category Table

User Role	Top-Level Menu	Submenu Item	Linked Use Case (ID)
Parking User	My Vehicle	Register Vehicle	UC-101
	Garage	View Parking Status	UC-104
	Services	Request Service	UC-105
	My Account	Update Details	UC-107
Garage Admin	Vehicle Mgmt	Approve Registration	UC-201
	Operations	Monitor Occupancy	UC-202
	Operations	View Sensor Errors	UC-503
	Service Mgmt	Manage Requests	UC-203
	Access Control	Manage User Access	UC-302
University Mgr	Reports	Usage Report	UC-301
	Reports	Daily Ops Report	UC-401
	Reports	Weekly Summary	UC-402
	System Settings	Executive Access Control	UC-302

(b) The Menu Hierarchy Diagram



Menu Design Principles Applied

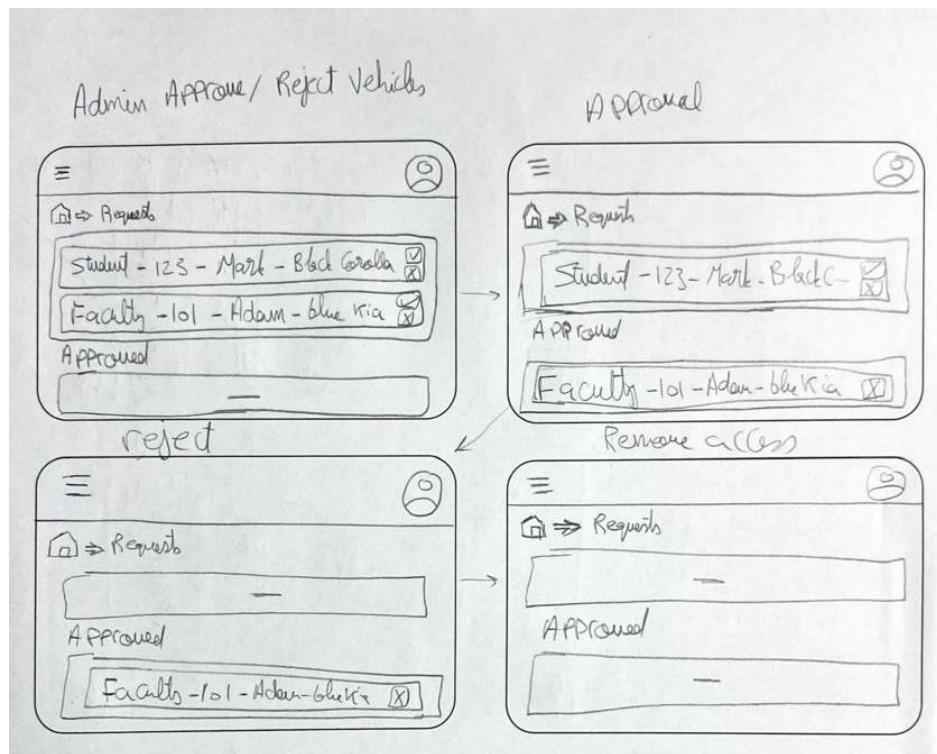
- Frequency-based: Most used items (Park Now, Dashboard) at top / bottom bar
- Task-based grouping
- Role-based separation (admin vs user menus are completely different)
- Maximum 5 items in mobile bottom bar
- Consistent icons and terminology
- “Home” always returns to real-time map for users

4. Storyboards for the Five Core Use Cases (Low-fidelity sketches described in text)

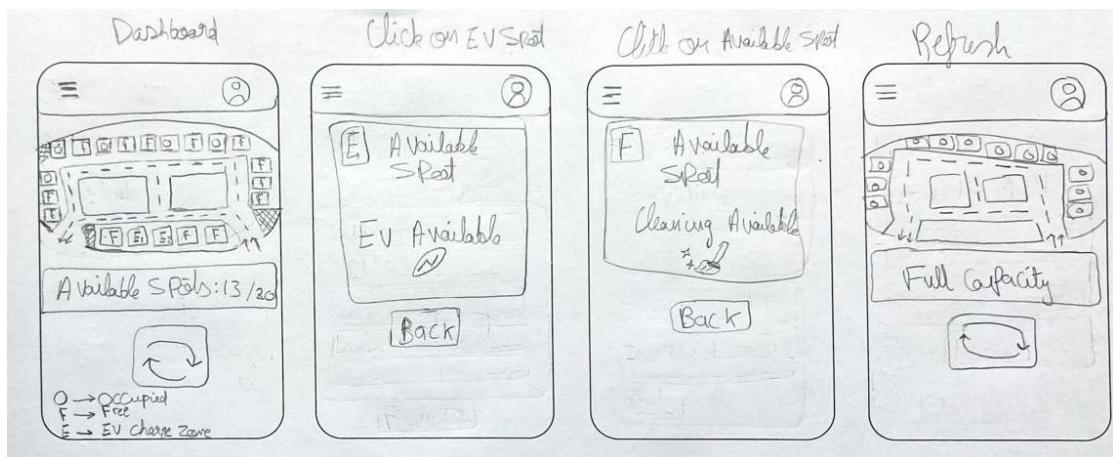
(a) Storyboard 1 – UC-101 User Register Account and Vehicle:



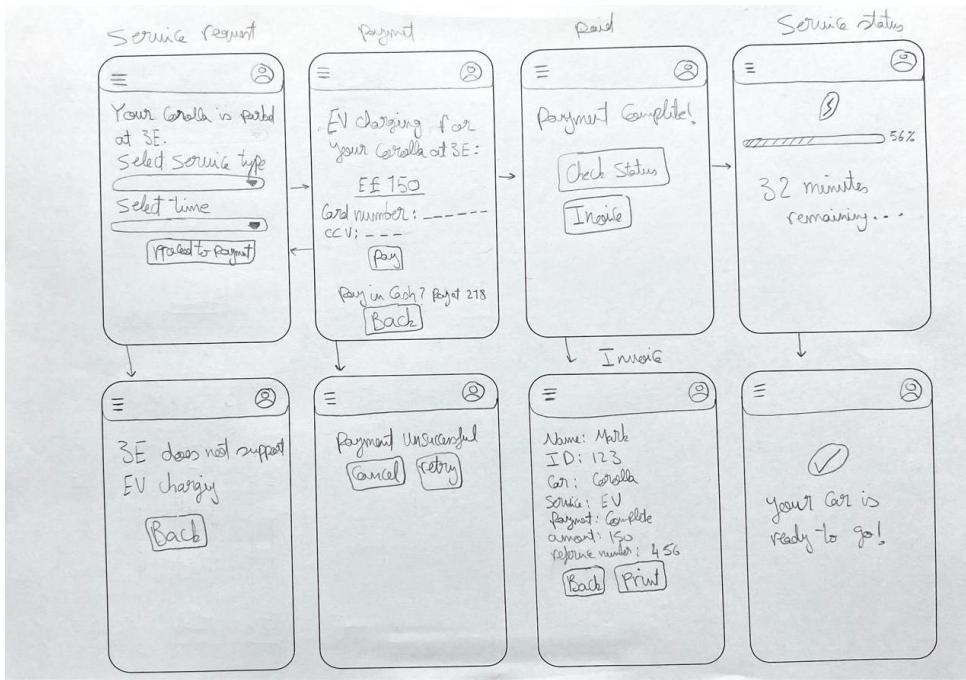
(b) Storyboard 2 – UC-201 Admin Review & Approve/Reject Vehicle Registrations:



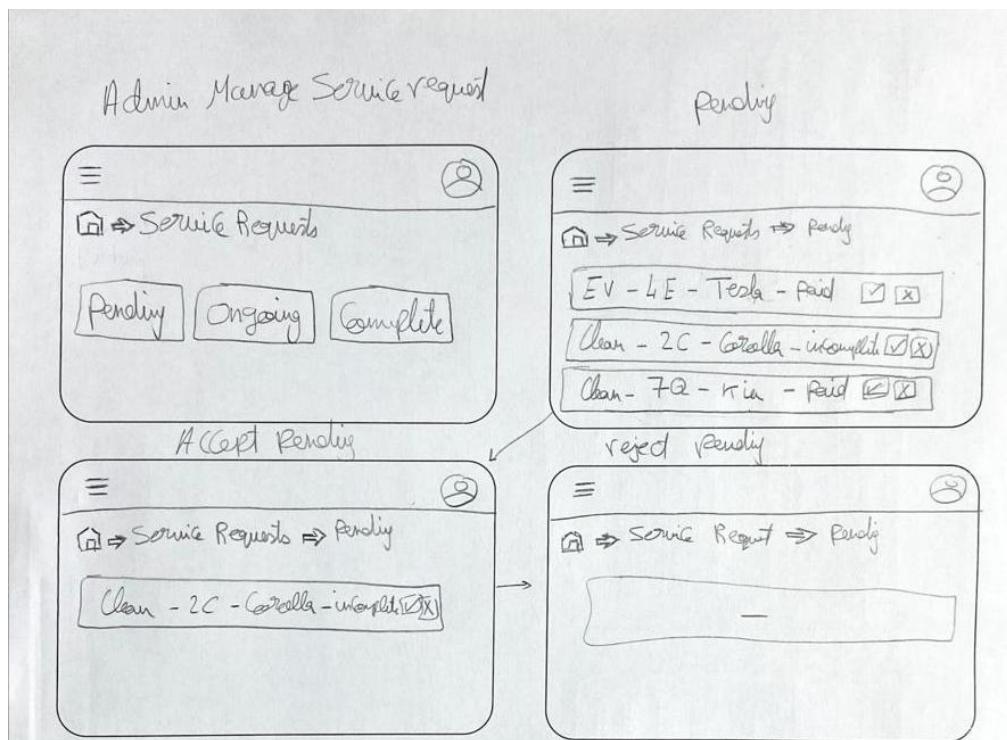
(c) Storyboard 3 – UC-104 View Real-Time Parking Availability:

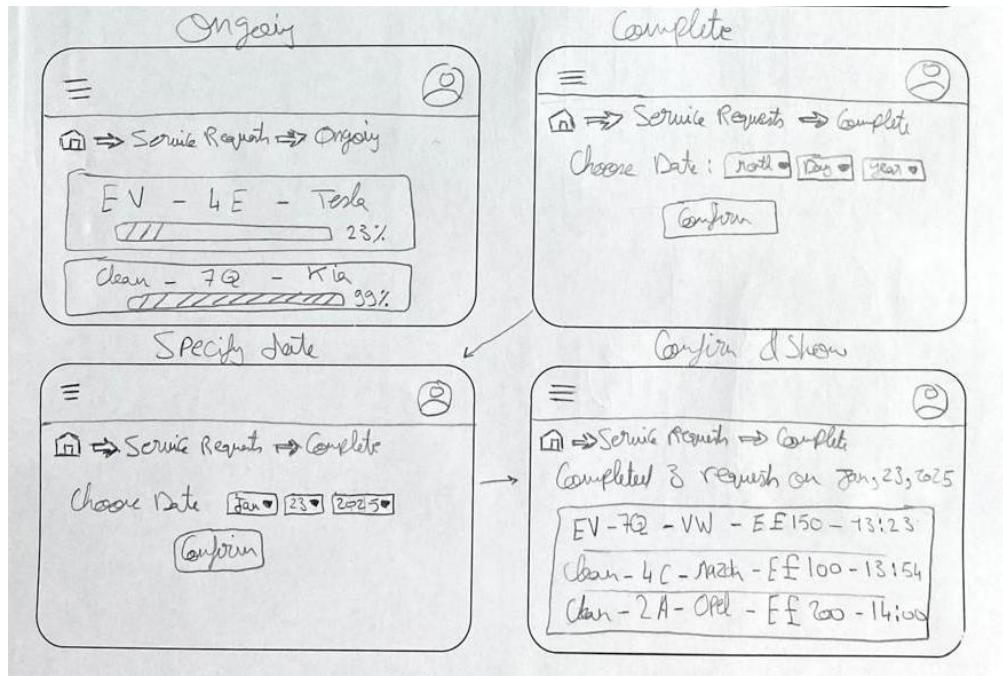


(d) Storyboard 4 – UC-105 Request Service:



(e) Storyboard 5 – Admin: Manage Service Requests

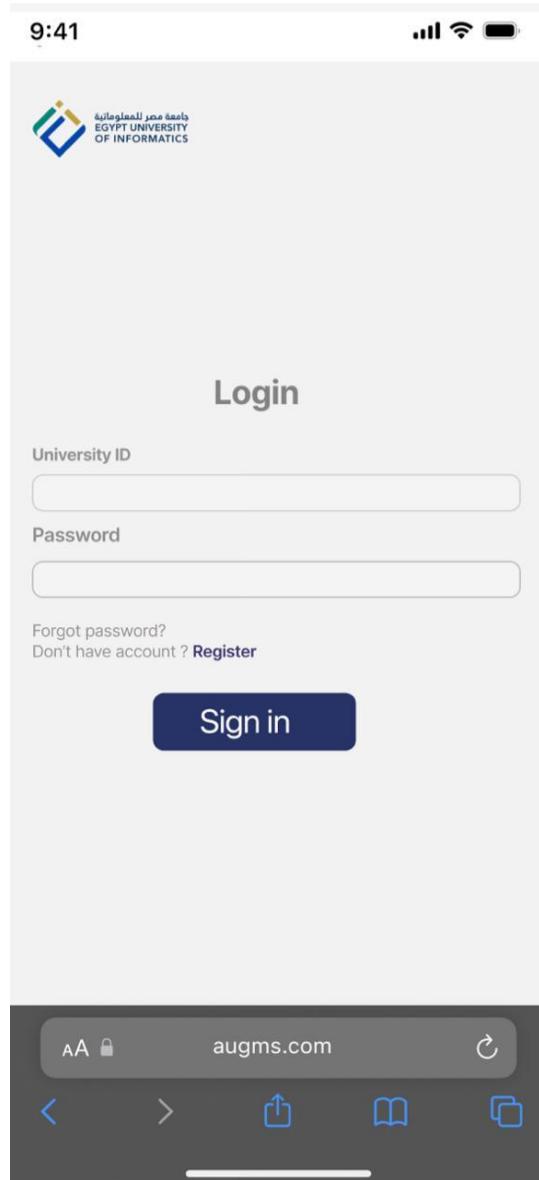




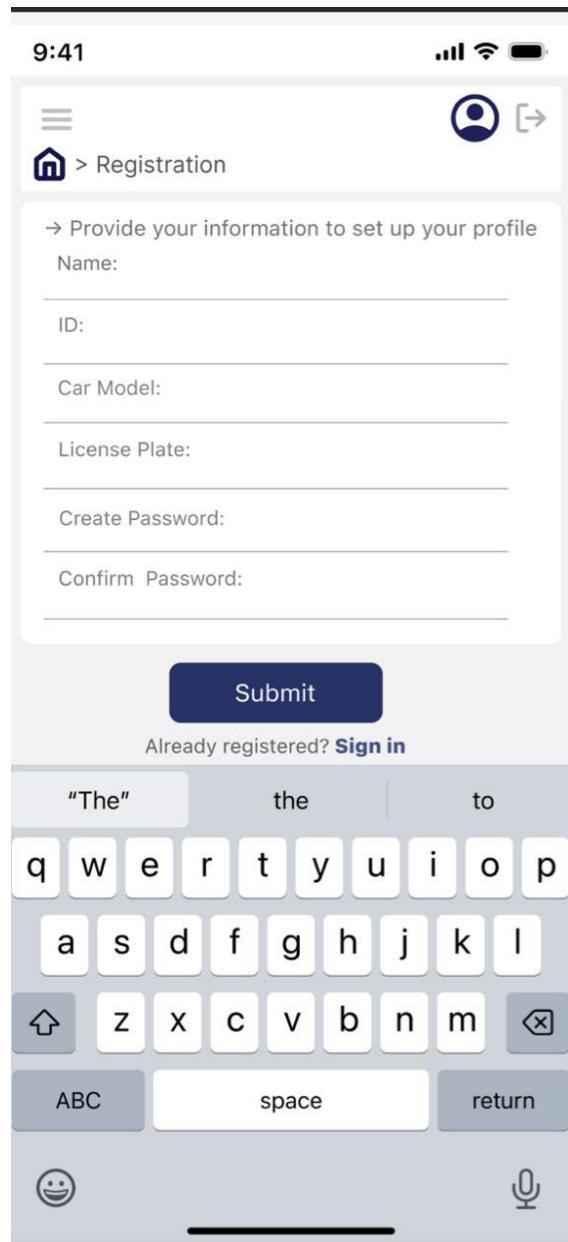
5. User Interface Screens

(a) UI 1 – UC-101 User Register Account and Vehicle – Login (Mobile & Web):

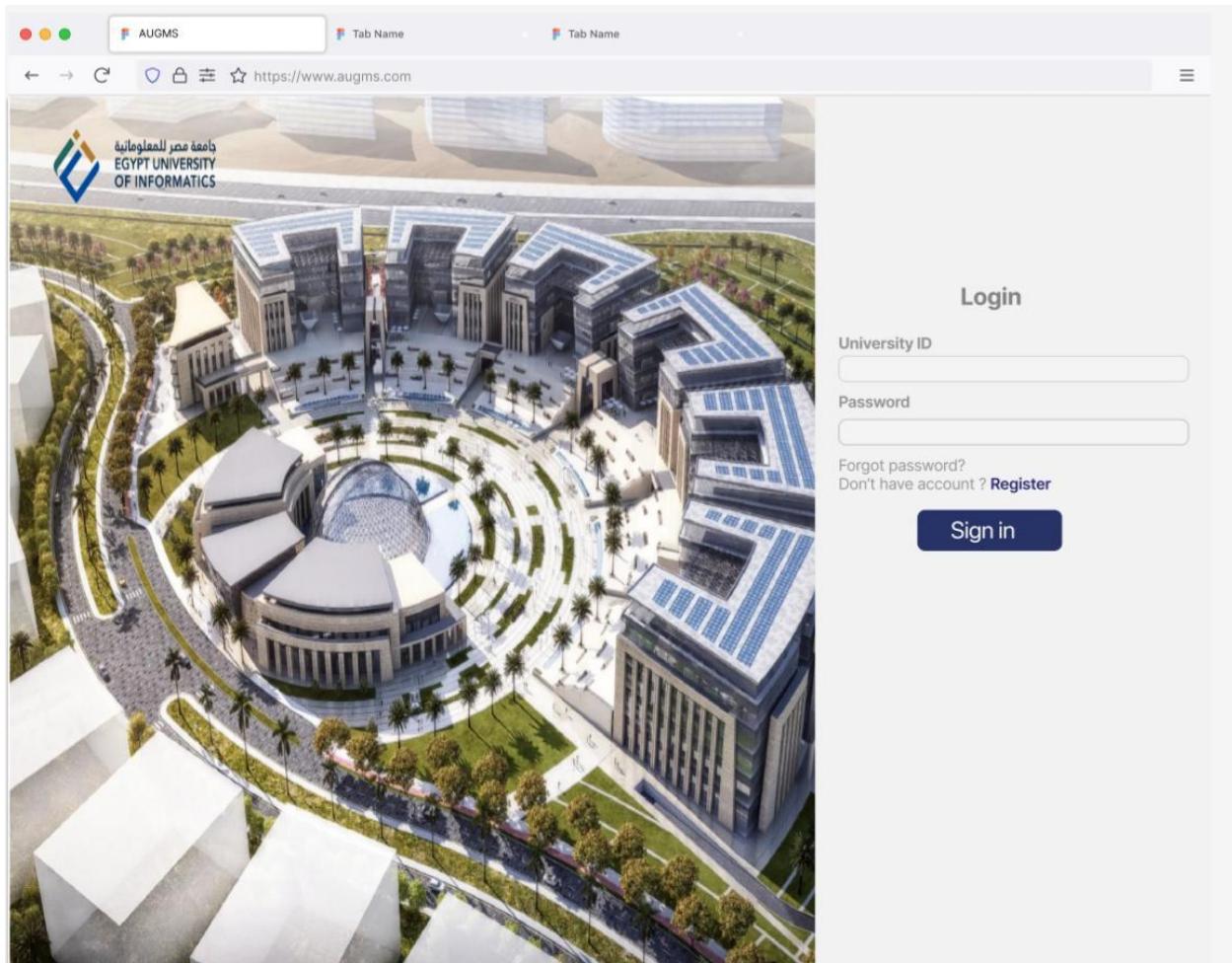
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<https://www.figma.com/design/8kW3mSxYpjbgdtqNv1nzh6/Untitled?node-id=0-1&p=f&t=slphI2vsOQSPTP90-0>



<https://www.figma.com/design/My7c5t6XvJ0CETJ8LaMm15/Untitled?node-id=0-1&p=f>



(b) UI 2 – UC-201 Admin Review & Approve/Reject Vehicle Registrations:

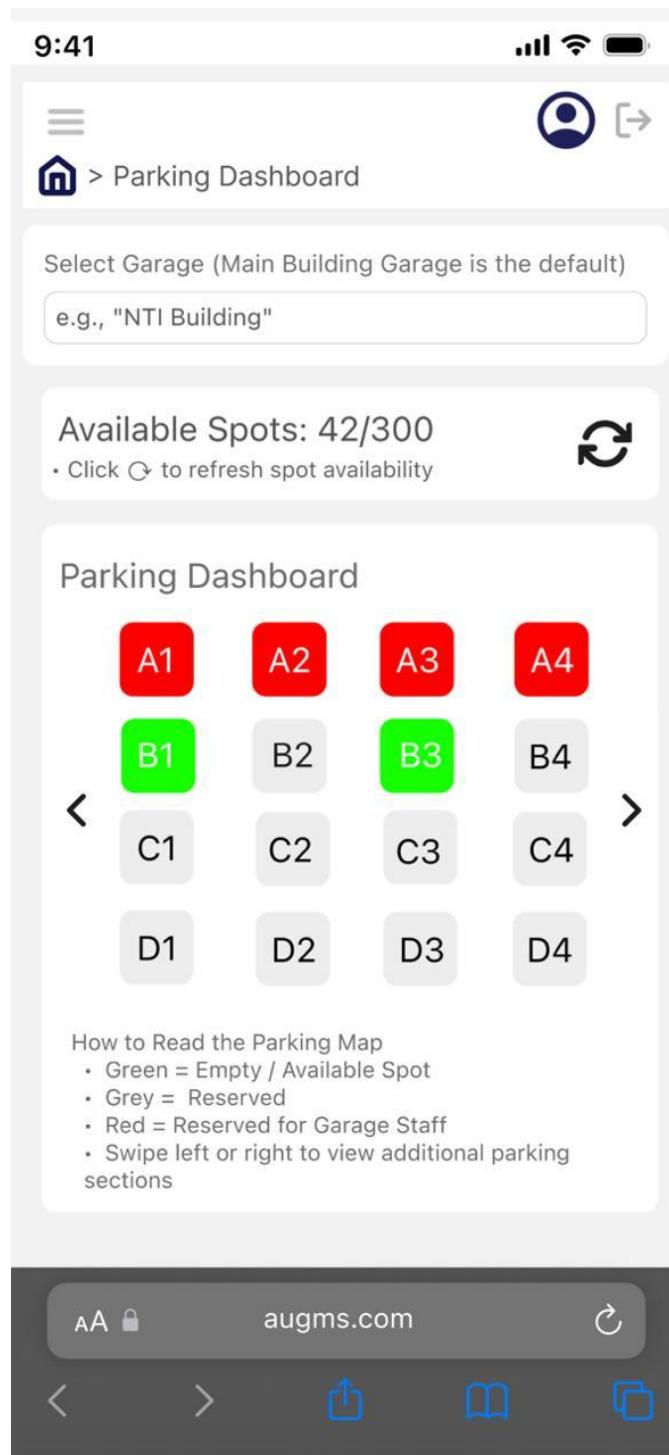
<https://www.figma.com/design/5KfQNL8HMca16dRbkRDPUP/Untitled?node-id=0-1&t=7MXBOJS5VLm4YbOI-1>

The screenshot shows a mobile application interface for vehicle approvals. On the left is a vertical navigation sidebar with the following items: Admin Dashboard, Pending Vehicle Approvals, Registered Vehicles List, Service Request, Reports, Profile & Settings, and Logout. The main content area has a header "Vehicle Approvals" and a sub-header "Register New Vehicle". Below this is a table titled "Vehicle Approvals" with the following data:

Name	Vehicle Plate	Type	Status
name	ABC-123	Car	Approved
name	XYZ-456	EV	Pending
name	ABC-123	Car	Approved
name	XYZ-456	EV	Rejected
name	ABC-123	Car	Approved
name	XYZ-456	EV	Pending
name	ABC-123	Car	Approved
name	XYZ-456	EV	Pending
name	ABC-123	Car	Rejected
name	XYZ-456	EV	Pending
name	ABC-123	Car	Approved
name	XYZ-456	EV	Pending
name	ABC-123	Car	Approved
name	XYZ-456	EV	Pending
name	ABC-123	Car	Approved
name	XYZ-456	EV	Pending
name	ABC-123	Car	Rejected
name	XYZ-456	EV	Rejected
name	ABC-123	Car	Approved
name	XYZ-456	EV	Pending
name	ABC-123	Car	Approved
name	XYZ-456	EV	Rejected
name	ABC-123	Car	Approved

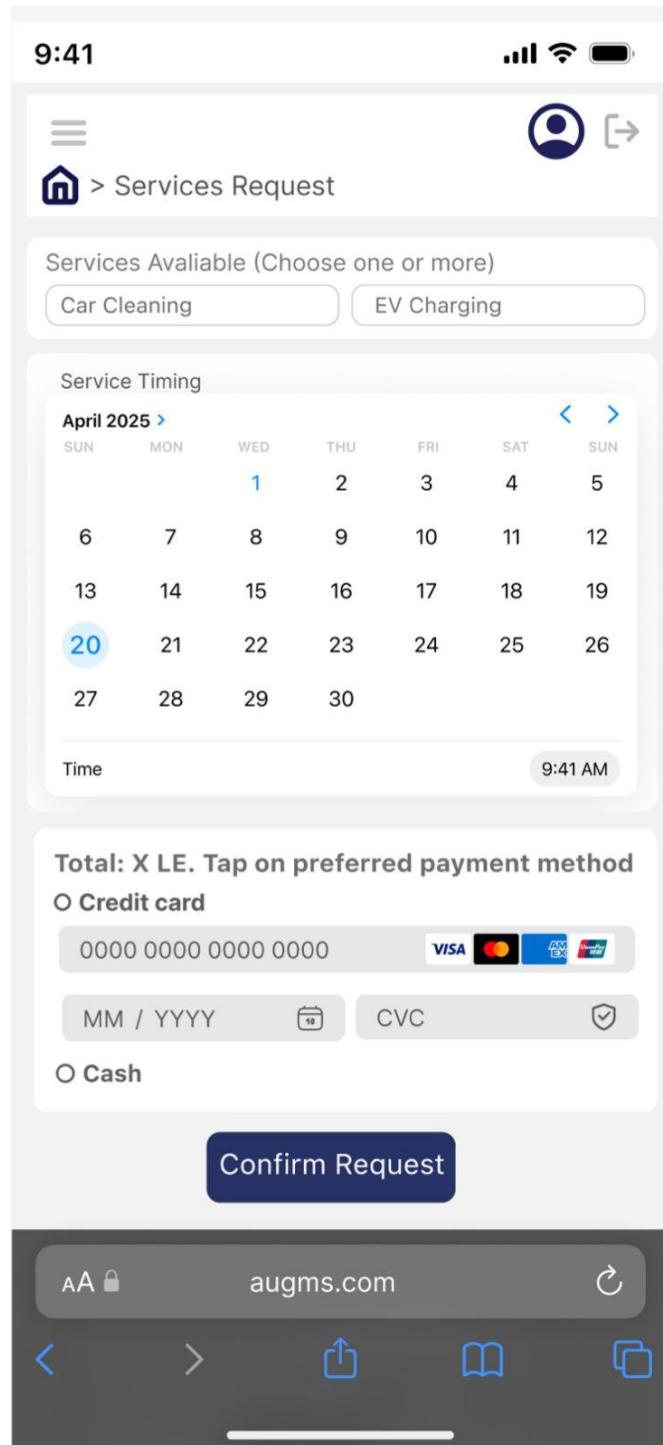
(c) UI 3 – UC-104 View Real-Time Parking Availability:

<https://www.figma.com/design/m9z9nRq9vMj6Zp9pbpXjrM/Untitled?node-id=0-1&p=f&t=d93PtZ4r5bn1GAPb-0>



(d) UI 4 – UC-105 Request Service:

<https://www.figma.com/design/r2uSksRWTowO0yRNKLEH9E/Untitled?node-id=0-1&p=f&t=tqrZl70rVAYGMx7K-0>



(e) UI 5 – Admin: Manage Service

<https://www.figma.com/design/5KfQNL8HMca16dRbkRDPUP/Untitled?node-id=0-1&p=f>

The screenshot shows a web-based administrative interface for managing service requests. On the left, there is a vertical sidebar with navigation links: Admin Dashboard, Pending Vehicle Approvals, Registered Vehicles List, Service Request (which is the active page), Reports, Profile & Settings, and Logout. The main content area is titled "Service Request" and contains a table with the following data:

Action	Type	Vehicle ID	Payment Method	Date	Count	Status
↓	wash	ABC-123	Cash	Tuesday 10:00 am	20/12	✓ ✘
↓	EV	ABC-123	Cash	Tuesday 10:00 am	24/12	✓ ✘
↓	EV	ABC-123	Cash	Sunday 10:00 am	25/12	✓ ✘
↓	wash	ABC-123	Credit	Tuesday 10:00 am	1/12	✓ ✘
↓	EV	ABC-123	Cash	Monday 10:00 am	2/12	Pending.....
↓	wash	ABC-123	Cash	Tuesday 9:00 am	2/12	Pending.....
↓	wash	ABC-123	Cash	Tuesday 10:00 am	2/12	Pending.....
↓	EV	ABC-123	Credit	Thursday 10:00 am	2/12	Rejected
↑	wash	ABC-123	Credit	Tuesday 1:00 pm	24/12	

Below the table, there is a summary row:

Details: Paid 150 Done by user 1 Finished 1:30 pm Completed

6. Jira Screenshots:

The screenshot shows the Jira Board interface for the 'My Software Team' space. The board has three columns: TO DO, IN PROGRESS, and IN REVIEW. A sidebar on the left contains links for 'For you', 'Spaces', 'Recent', and 'My Software Team'. On the right, a sidebar lists tasks categorized by status: DONE (4 items), PENDING (1 item), and IN PROGRESS (1 item). A 'Quickstart' button is at the bottom right.

The screenshot shows the Jira Timeline interface for the 'My Software Team' space. It displays a Gantt chart with tasks across months from December to March. The tasks are grouped into sprints, with some tasks completed ('DONE') and others still in progress. A sidebar on the left shows 'For you', 'Spaces', and 'Recent' links. A 'Quickstart' button is at the bottom right.

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Jira

Spaces My Software Team ...
Summary Backlog Board Code Timeline Pages Forms +

Search board Filter

TO DO 2 IN PROGRESS 1 IN REVIEW DONE 1
Create Storyboards Dec 13, 2025 SCRUM-8
UI Screens Dec 15, 2025 SCRUM-10
+ Create

Design Menu Dec 11, 2025 SCRUM-2
Identify interfaces Dec 7, 2025 SCRUM-1

Give feedback on the n...

Quickstart

Column	Item	Owner	Completed Date
TO DO	Create Storyboards	SCRUM-8	Dec 13, 2025
TO DO	UI Screens	SCRUM-10	Dec 15, 2025
IN PROGRESS	Design Menu	SCRUM-2	Dec 11, 2025
DONE	Identify interfaces	SCRUM-1	Dec 7, 2025

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Jira

Spaces My Software Team ...
Summary Backlog Board Code Timeline Pages Forms +

Search board Filter

TO DO 1 IN PROGRESS IN REVIEW DONE 2
UI Screens Dec 15, 2025 SCRUM-8
+ Create

Create Storyboards Dec 13, 2025 SCRUM-8
Identify interfaces Dec 7, 2025 SCRUM-1
Design Menu Dec 11, 2025 SCRUM-2

Give feedback on the n...

Quickstart

Column	Item	Owner	Completed Date
TO DO	UI Screens	SCRUM-8	Dec 15, 2025
IN PROGRESS	Create Storyboards	SCRUM-8	Dec 13, 2025
DONE	Identify interfaces	SCRUM-1	Dec 7, 2025
DONE	Design Menu	SCRUM-2	Dec 11, 2025

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Jira

For you Spaces + ...

Recent My Software Team + ...

More spaces Browse templates ... More

Give feedback on the n...

Spaces My Software Team 23 ...

Summary Backlog Board /> Code Timeline Pages Forms +

Search timeline A5 Epic Status category

Work Number December January '26 February '26 March

Sprints

Work	Number	December	January '26	February '26	March
SCRUM-11 Identify interfaces	+ ...	SCRUM Sprint 0			
SCRUM-15 User Interfaces	DONE				
SCRUM-16 System Interfa...	DONE				
SCRUM-12 Menu design	DONE				
SCRUM-13 Create Storyboards	DONE				
SCRUM-14 UI Screens	DONE + ...				

+ Create Epic

Today Weeks Months Quarters ⏪ > Quickstart

Timeline view showing a backlog of user stories across four months. Stories include SCRUM-11 through SCRUM-16, with some completed (DONE) and others in progress (e.g., SCRUM-14). A purple bar indicates the current sprint (SCRUM Sprint 0) in December.

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Jira

For you Spaces + ...

Recent My Software Team + ...

More spaces Browse templates ... More

Give feedback on the n...

Spaces My Software Team 23 ...

Summary Backlog Board /> Code Timeline Pages Forms +

Search timeline A5 Epic Status category

Work Number December January '26 February '26 March

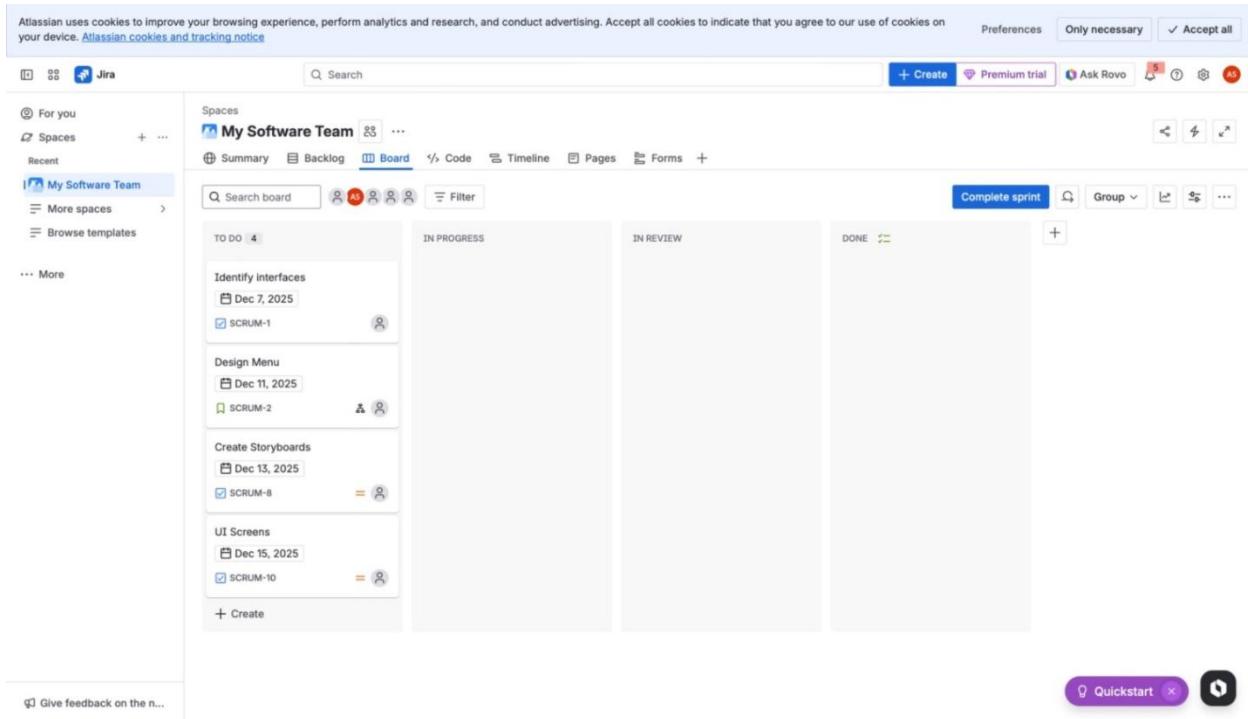
Sprints

Work	Number	December	January '26	February '26	March
SCRUM-11 Identify interfaces	+ ...	SCRUM Sprint 0			
SCRUM-15 User Interfaces	TO DO				
SCRUM-16 System Interfa...	TO DO				
SCRUM-12 Menu design					
SCRUM-13 Create Storyboards					
SCRUM-14 UI Screens					

+ Create Epic

Today Weeks Months Quarters ⏪ > Quickstart

Timeline view showing a backlog of user stories across four months. Stories include SCRUM-11 through SCRUM-16, with most still labeled 'TO DO' in the 'Status' column. A purple bar indicates the current sprint (SCRUM Sprint 0) in December.



7. GitHub Repository:

<https://github.com/alyhassankamel/Automated-University-ParkingSystem.git>

8. Conclusion:

This technical report for Deliverable #4 successfully fulfills the requirements of the User Interface Design phase by identifying essential user interfaces for five core use cases, presenting a well-structured menu design. Developing detailed storyboards that reflect interaction flows from analysis diagrams and designing consistent web-based and mobile screen prototypes in Figma that adhere to established UI/UX principles. The designs prioritize usability, intuitive navigation, and overall user satisfaction while explicitly documenting all assumptions made throughout the process.