

## **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

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### 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 Spot	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

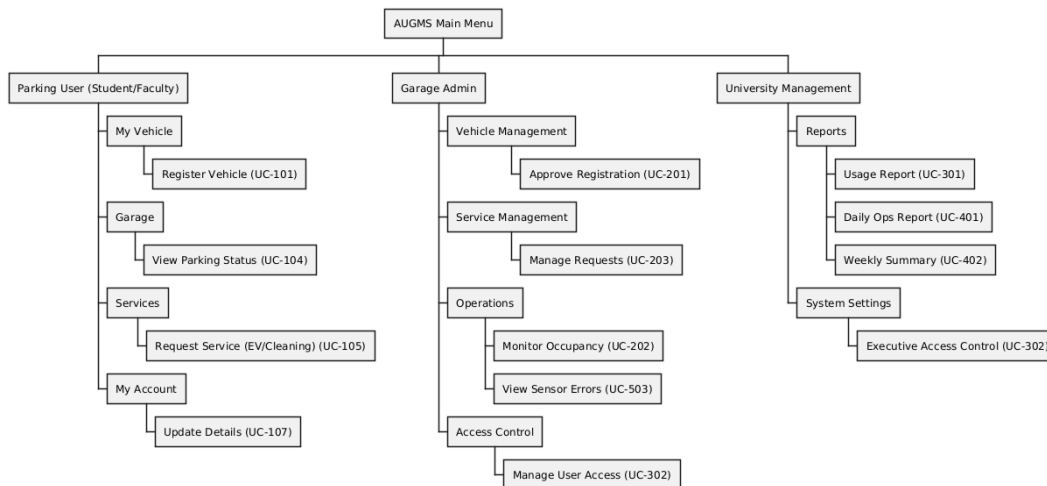
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### 3. Menu Design

(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

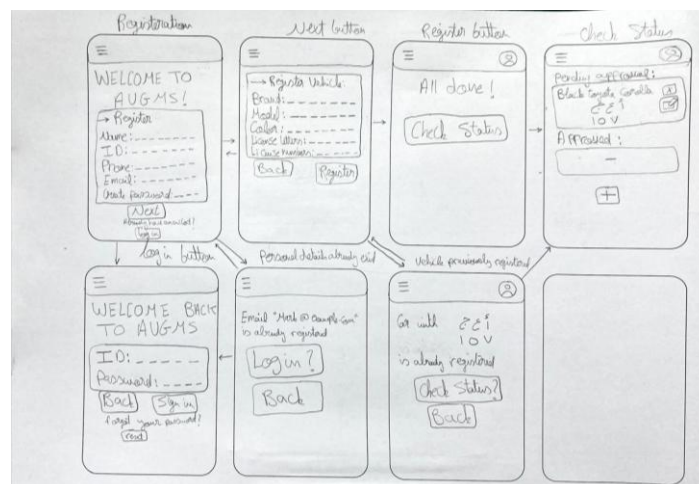


## Menu Design Principles Applied

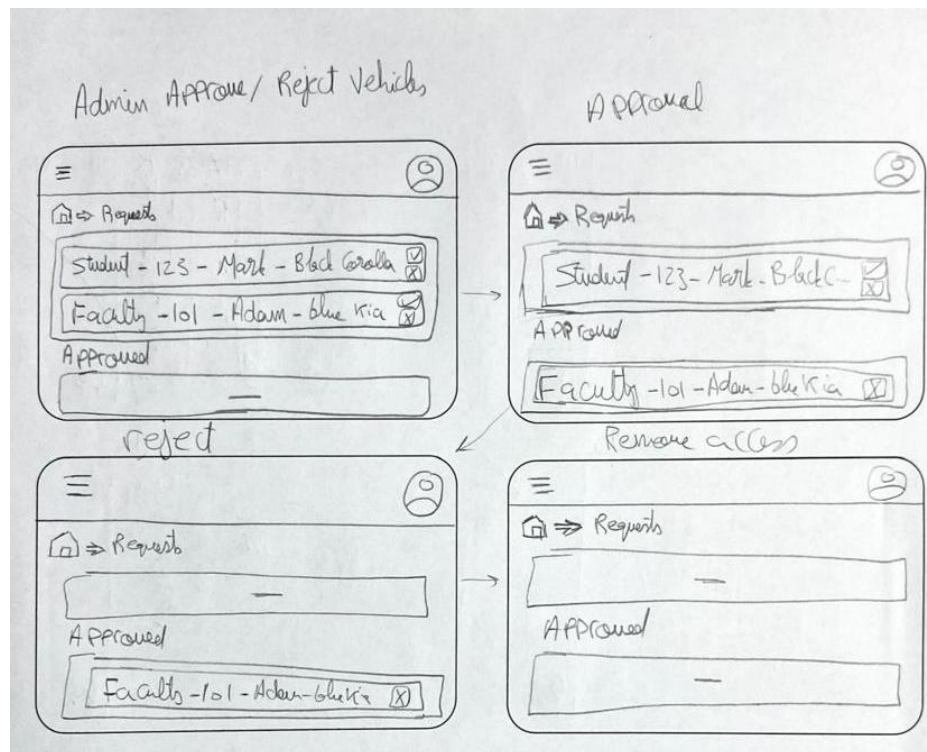
- Frequency-based: Most used items (Park Now, Dashboard) at top / bottom bar
- Task-based grouping
- Role-based separation (admin vs user menus are completely different)
- Maximum 5 items in mobile bottom bar
- Consistent icons and terminology
- “Home” always returns to real-time map for users

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

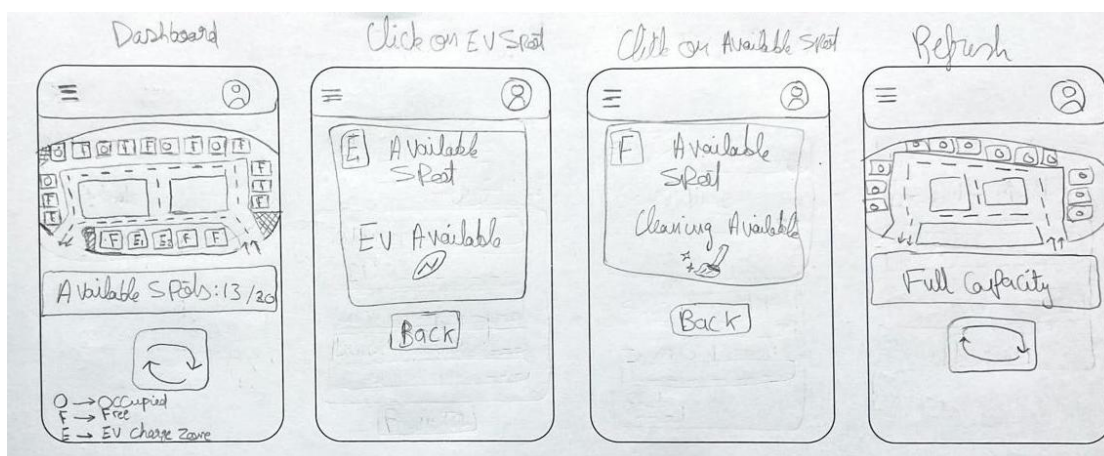
### (a) Storyboard 1 – UC-101 User Register Account and Vehicle:



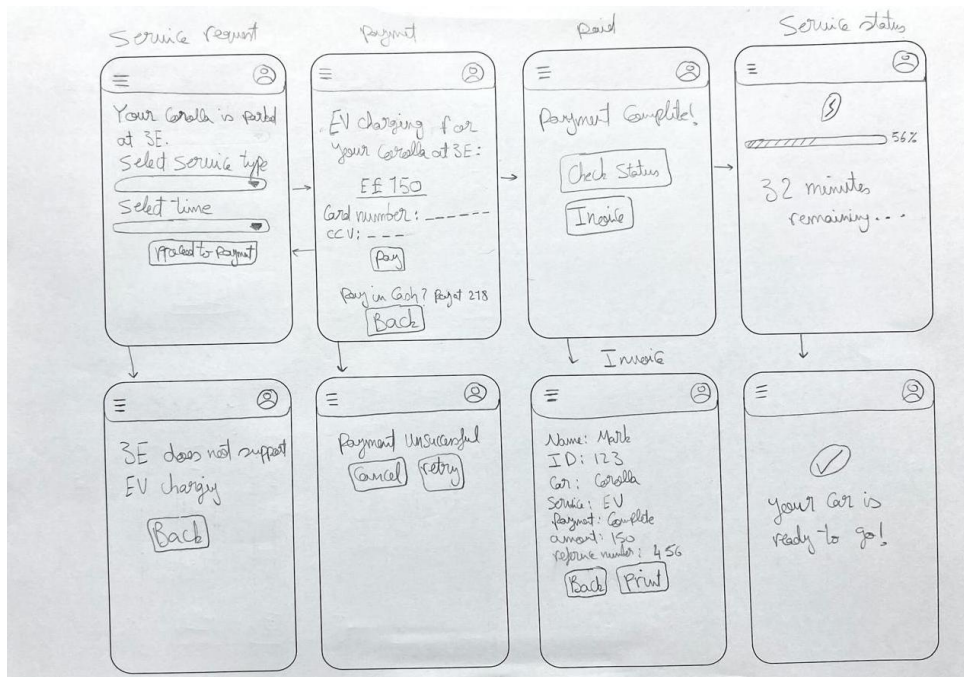
(b) Storyboard 2 – UC-201 Admin Review & Approve/Reject Vehicle Registrations:



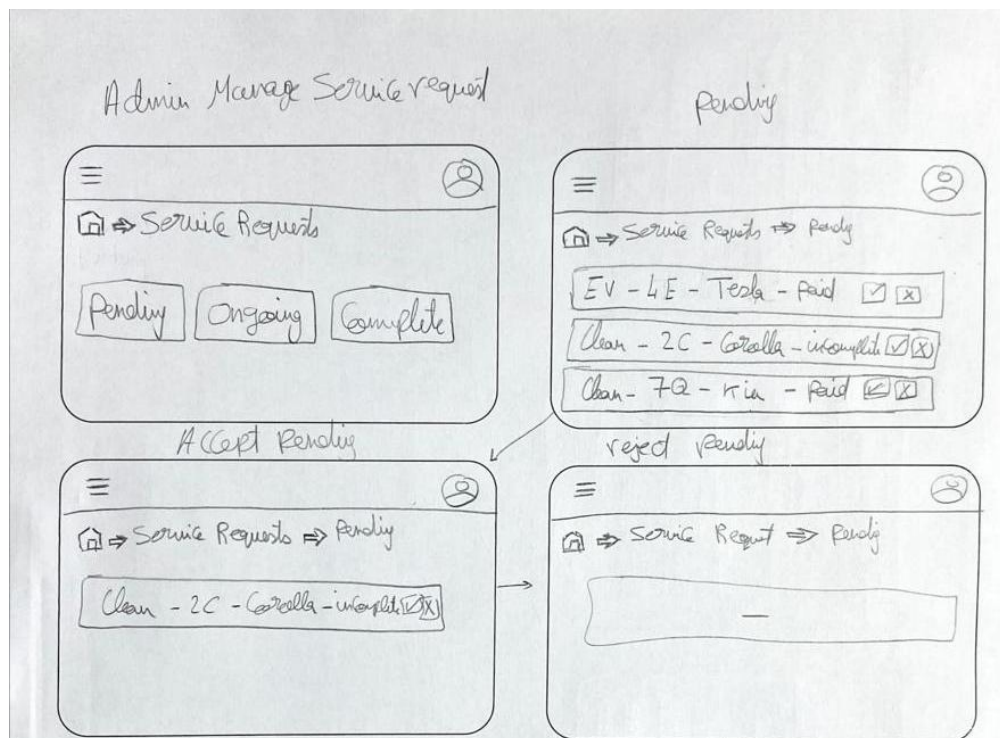
(c) Storyboard 3 – UC-104 View Real-Time Parking Availability:



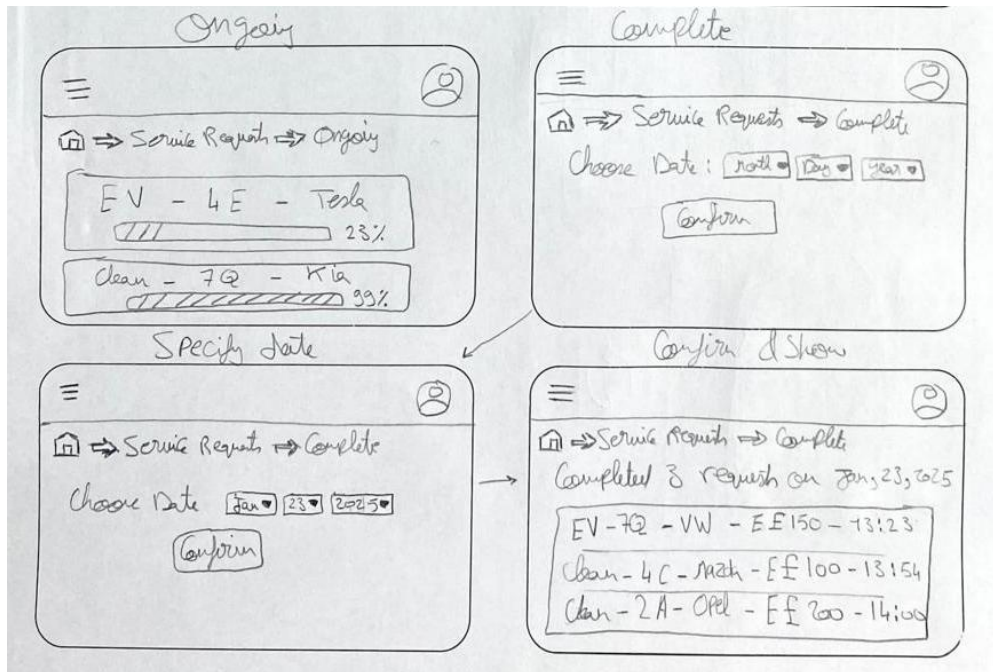
(d) Storyboard 4 – UC-105 Request Service:



(e) Storyboard 5 – Admin: Manage Service Requests



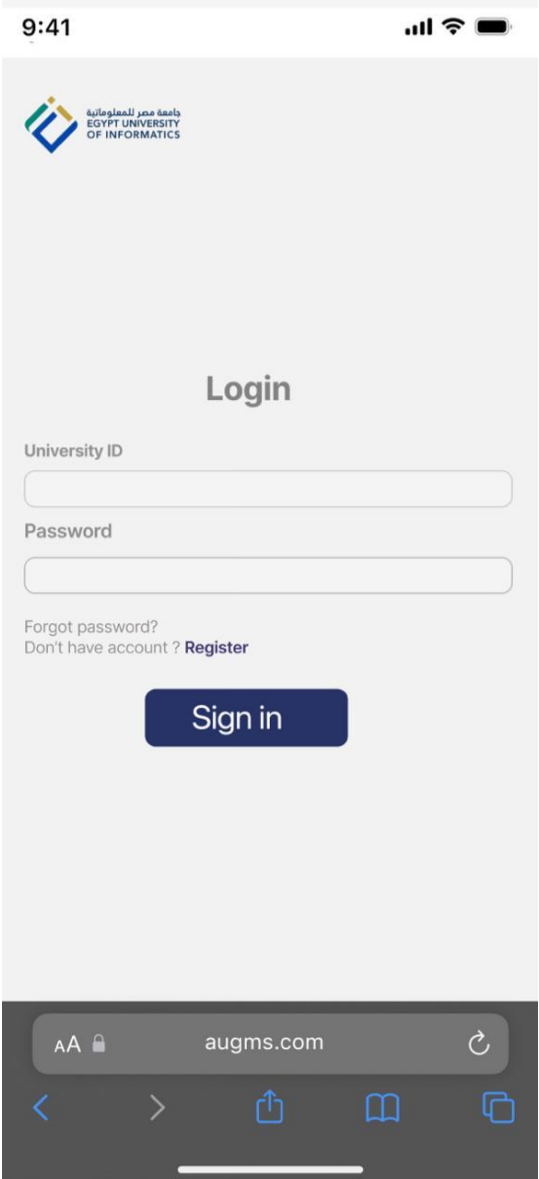




## 5. User Interface Screens

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

<https://www.figma.com/design/yxqIKI29JNrv9TEiGvfgOj/Untitled?node-id=0-1&p=f>



The image shows a mobile application login screen. At the top, the status bar displays the time 9:41, signal strength, Wi-Fi, and battery icons. The app's logo, featuring a stylized 'E' and the text 'جامعة مصر للمعلوماتية EGYPT UNIVERSITY OF INFORMATICS', is in the top left. The main heading 'Login' is centered. Below it are two input fields: 'University ID' and 'Password'. A link 'Forgot password?' is positioned below the password field, and a 'Register' link is below it. A dark blue 'Sign in' button is centered at the bottom of the form area. The bottom of the screen shows a web browser interface with the address bar displaying 'augms.com' and standard navigation icons.

9:41

جامعة مصر للمعلوماتية  
EGYPT UNIVERSITY  
OF INFORMATICS

### Login

University ID

Password

Forgot password?  
Don't have account ? [Register](#)

[Sign in](#)

AA augms.com

<https://www.figma.com/design/8kW3mSxYpjbgtqNv1nzh6/Untitled?node-id=0-1&p=f&t=slphI2vsOQSPTP90-0>

9:41

Registration

→ Provide your information to set up your profile

Name:

ID:

Car Model:

License Plate:

Create Password:

Confirm Password:

Submit

Already registered? [Sign in](#)

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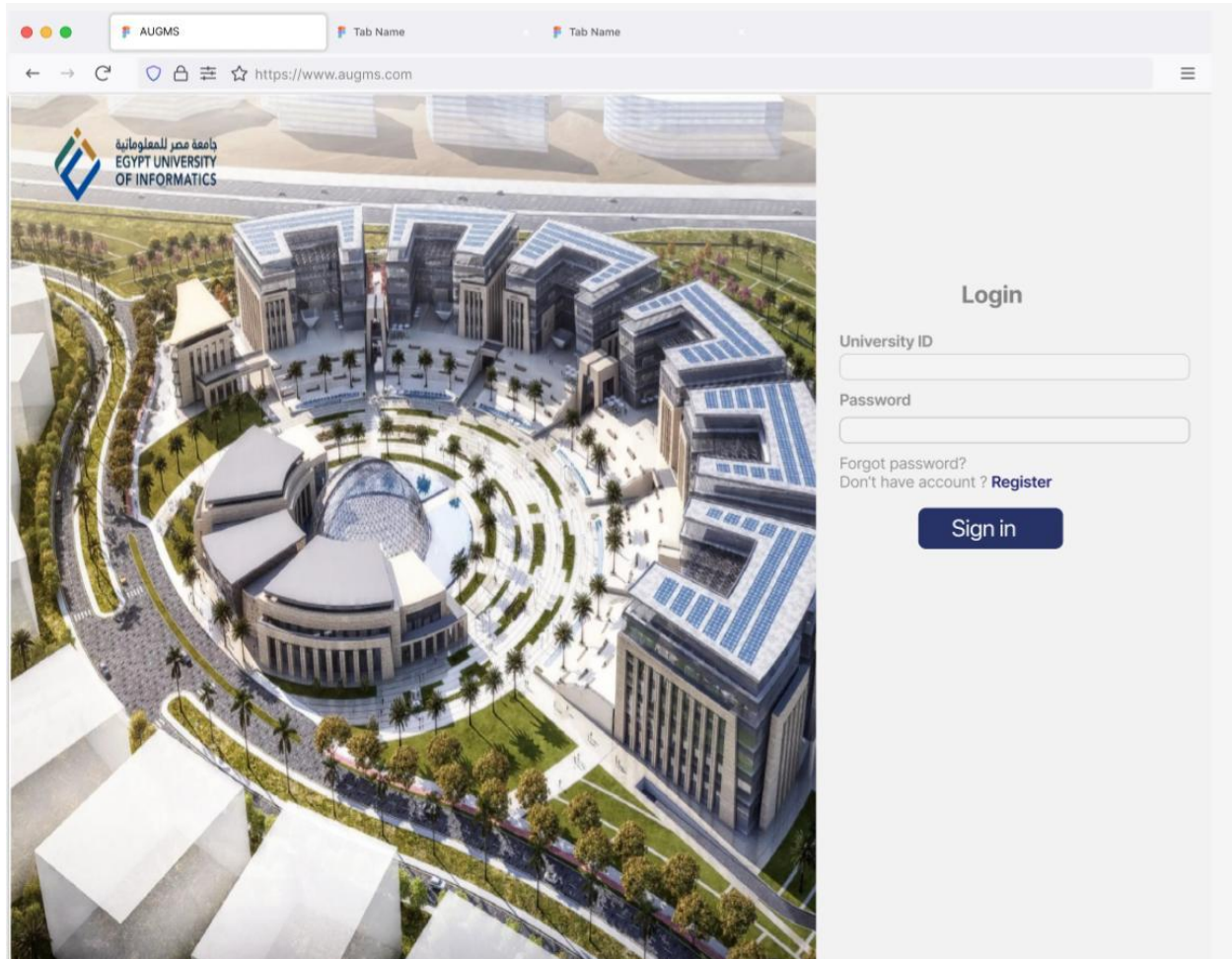
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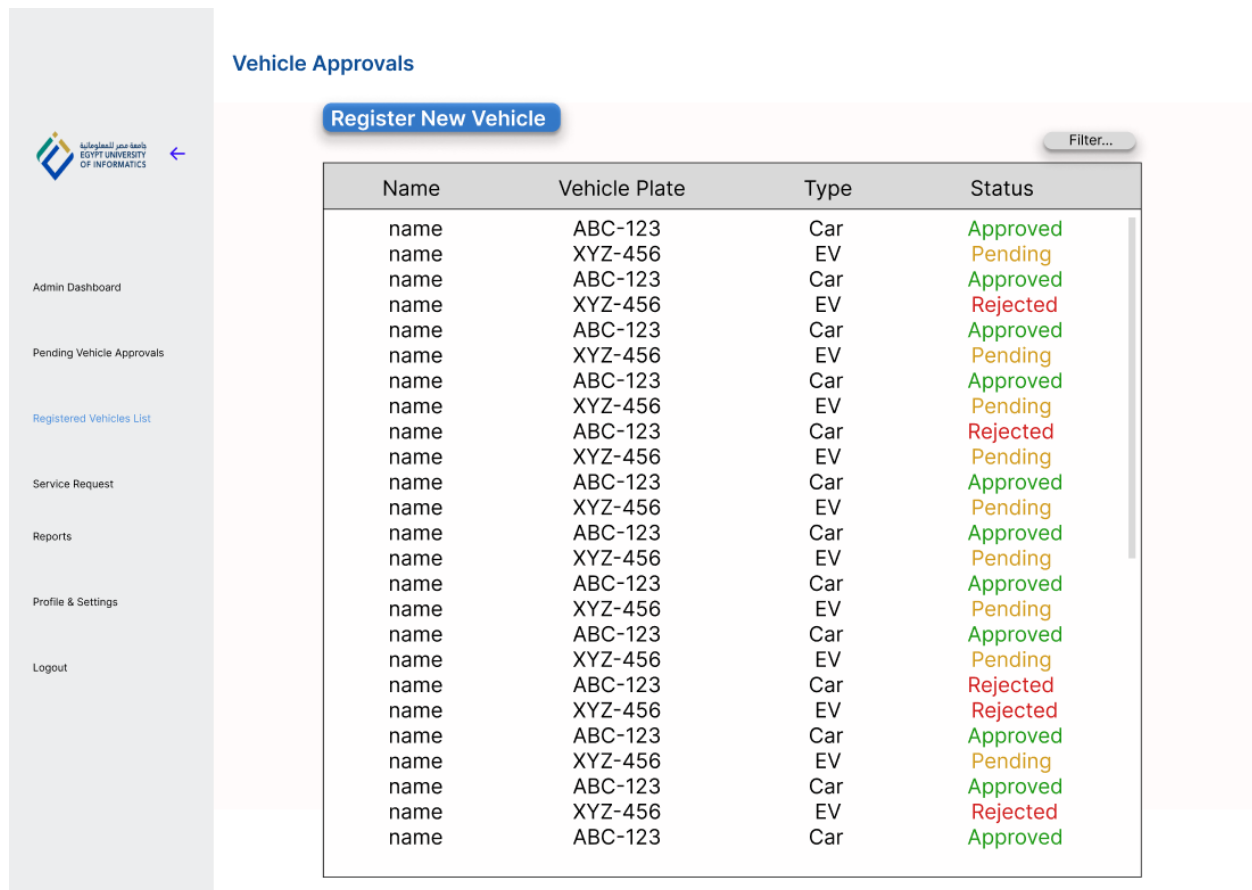


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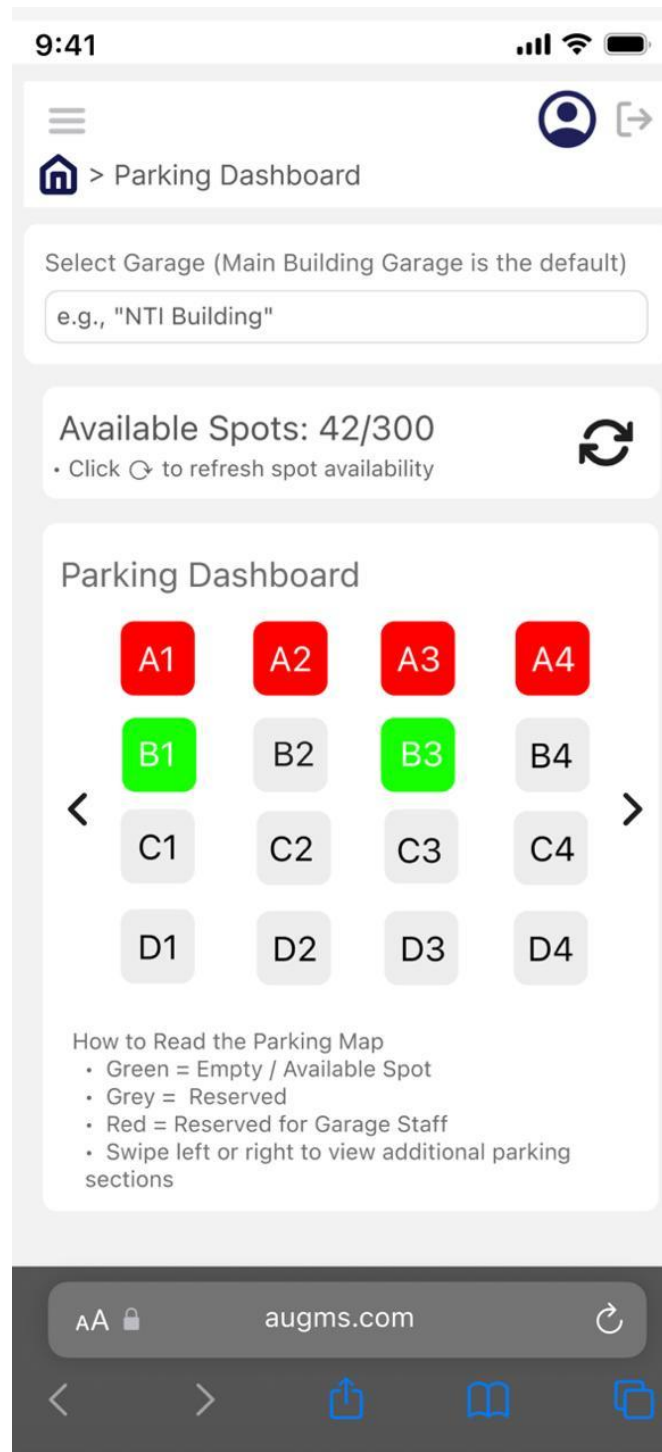
(b) UI 2 – UC-201 Admin Review & Approve/Reject Vehicle Registrations:

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



(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>

The image shows a mobile application interface for requesting services. At the top, the status bar displays the time 9:41, signal strength, Wi-Fi, and battery. The app header includes a hamburger menu, a user profile icon with a share arrow, and the title 'Services Request'. Below the header, there's a section 'Services Available (Choose one or more)' with two buttons: 'Car Cleaning' and 'EV Charging'. The next section is 'Service Timing', which features a calendar for April 2025. The calendar has days of the week as headers and dates 1 through 30. The date 20 is highlighted with a blue circle. Below the calendar is a 'Time' field showing '9:41 AM'. The payment section is titled 'Total: X LE. Tap on preferred payment method' and has two options: 'Credit card' and 'Cash'. The 'Credit card' option is selected and shows a card number '0000 0000 0000 0000', logos for VISA, Mastercard, AMEX, and Discover, and fields for 'MM / YYYY' (with a calendar icon) and 'CVC' (with a shield icon). The 'Cash' option is also visible. At the bottom of the form is a large blue button labeled 'Confirm Request'. The bottom of the screen shows a browser address bar with 'augms.com' and standard mobile navigation icons.

9:41

Services Request

Services Available (Choose one or more)

Car Cleaning EV Charging

Service Timing

April 2025

SUN	MON	WED	THU	FRI	SAT	SUN
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Time 9:41 AM

Total: X LE. Tap on preferred payment method

☒ Credit card

0000 0000 0000 0000 VISA Mastercard AMEX Discover

MM / YYYY CVC

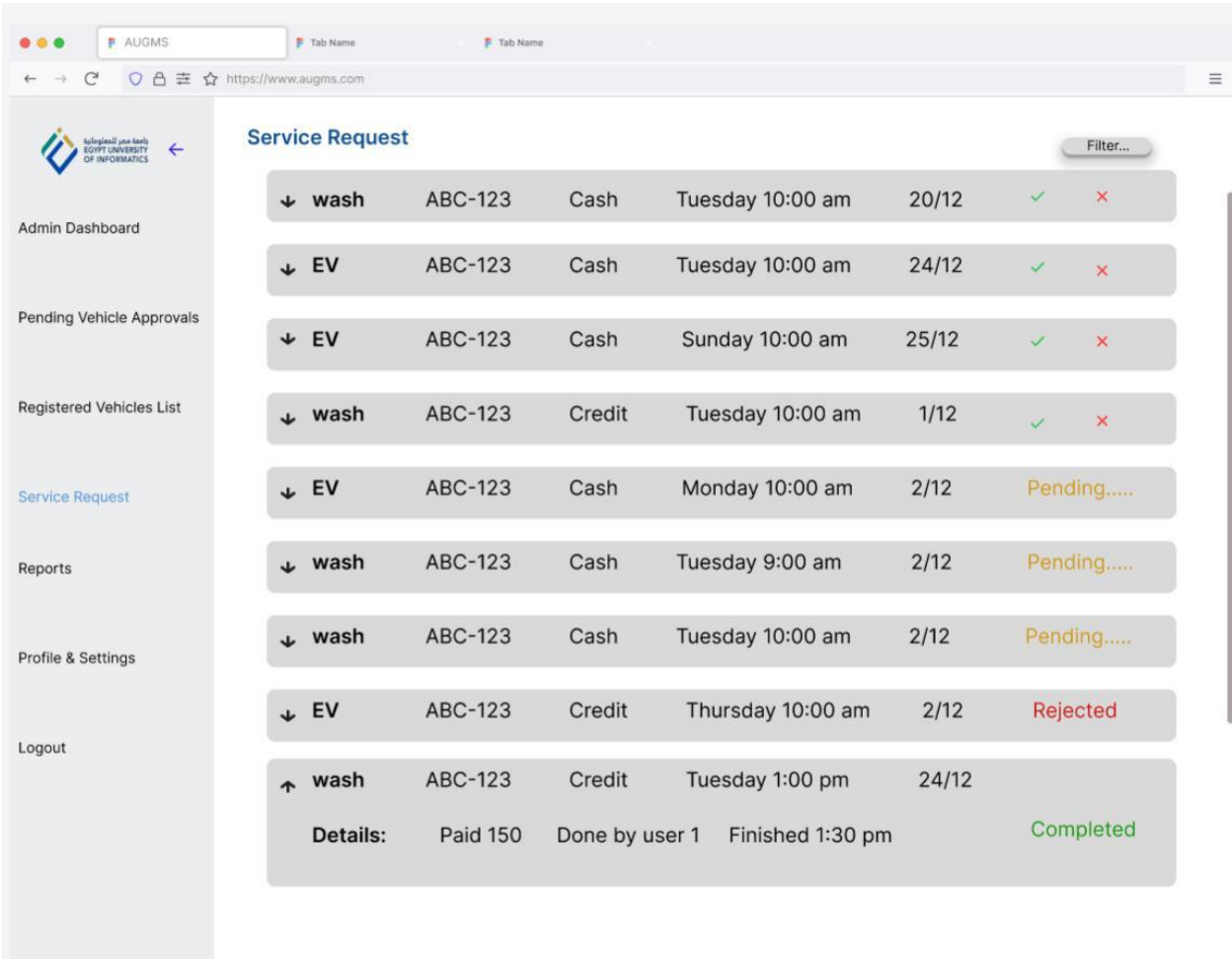
☐ Cash

Confirm Request

augms.com

(e) UI 5 – Admin: Manage Service

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



## 6. Jira Screenshots:

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Identify interfaces

Dec 7, 2025

SCRUM-1

Design Menu

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SCRUM-2

Create Storyboards

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SCRUM-3

UI Screens

Dec 15, 2025

SCRUM-10

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February '26

March

Sprints

SCRUM-11 Identify interfaces

SCRUM-15 User Interfaces DONE

SCRUM-16 System Interfa... DONE

SCRUM-12 Menu design

SCRUM-13 Create Storyboards

SCRUM-14 UI Screens + ...

+ Create Epic

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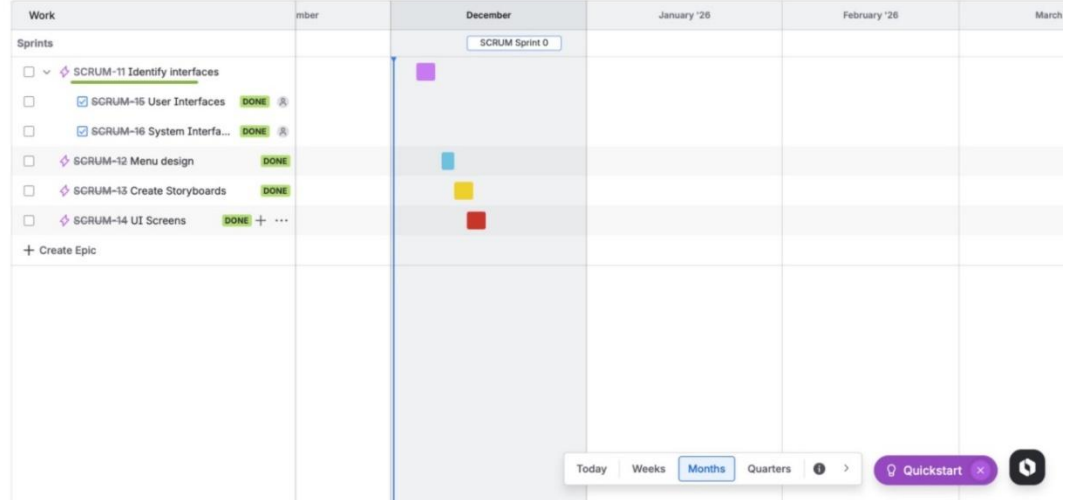
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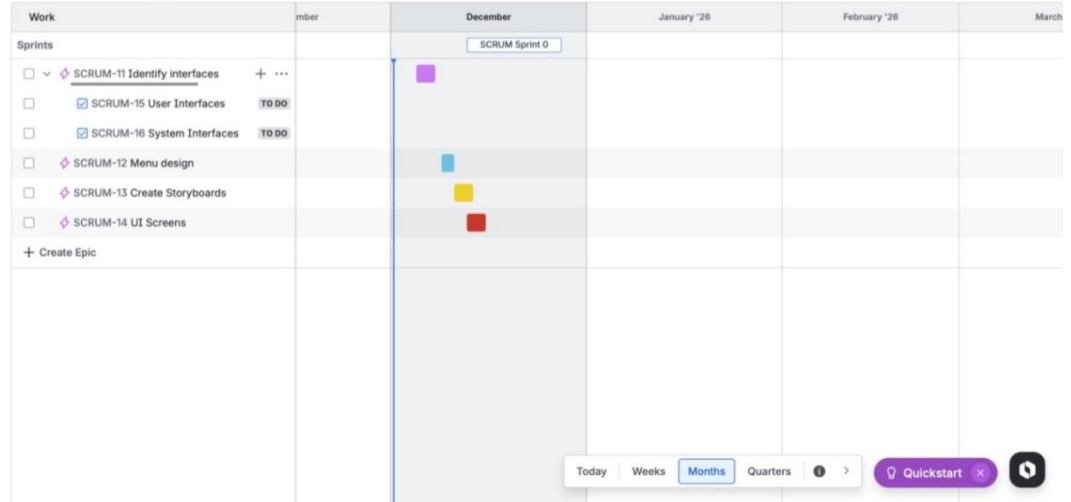
Spaces

My Software Team

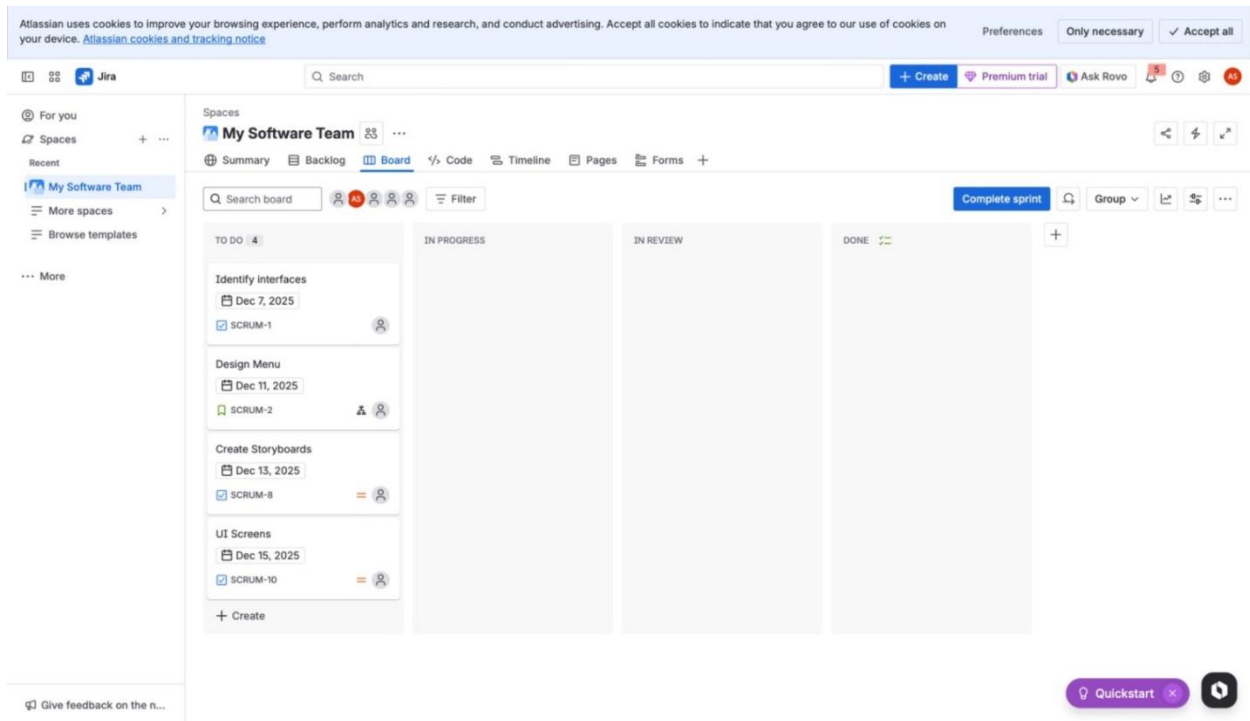
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## 7. GitHub Repository:

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

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## 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.