

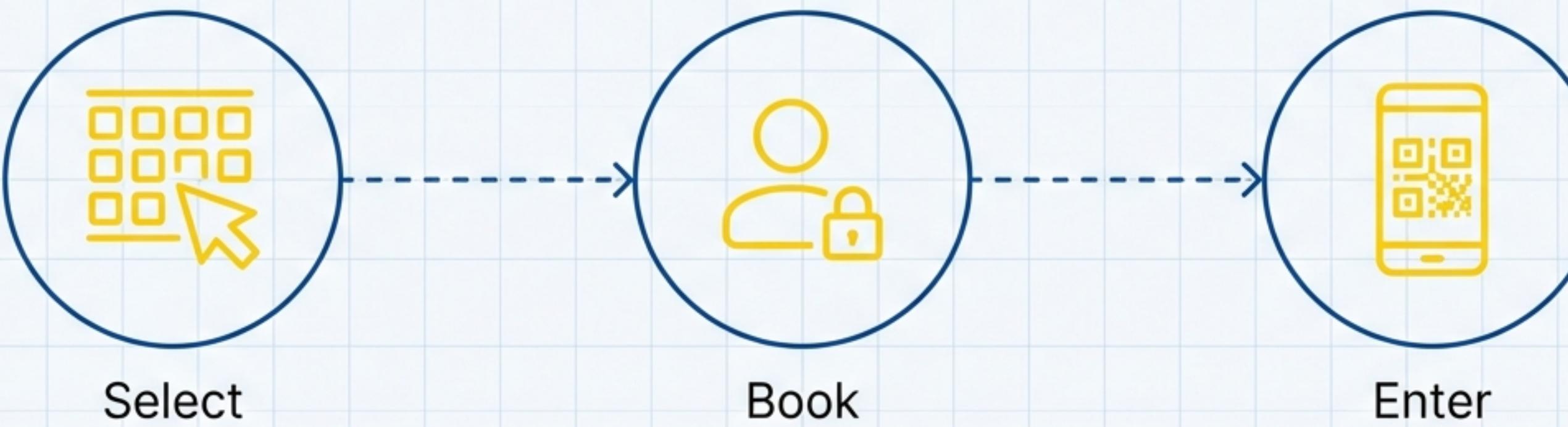
OmniView: A Blueprint for a Modern Cinema Experience



A guided tour of the system architecture,
design, and validation plan.

The OmniView system provides a complete digital ticketing journey.

OmniView is a web-based platform designed to manage the entire cinema booking process, from interactive seat selection to secure digital entry.



- Interactive Visual Seating Map
- Tiered Pricing & Account Management
- Secure, Unique QR Code Ticket Generation

Part 1: The Blueprint — Core System Requirements



This section outlines the essential functional, security, and data constraints that define the OmniView system. These are the foundational rules that govern the entire design.

The user experience is defined by clarity and control.



Visual Seating Map

Users must see a real-time map with a clear color-coded key:

- Green = Available
- Gray = Occupied
- Yellow = Selected



Account Management

A user account is mandatory. Users must create an account and log in to finalize any purchase, securing the transaction.



Digital Ticketing

The system must generate a unique QR code upon successful booking for secure digital verification at entry.

Operational rules govern system structure and security.

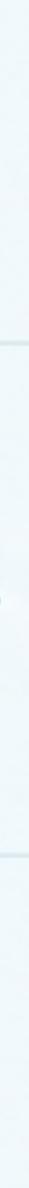
Capacity and Pricing Tiers

Top Left
\$20

Top Right
\$20

Bottom
\$10

Left/Right
\$15



Each section is strictly capped at **100 seats.**



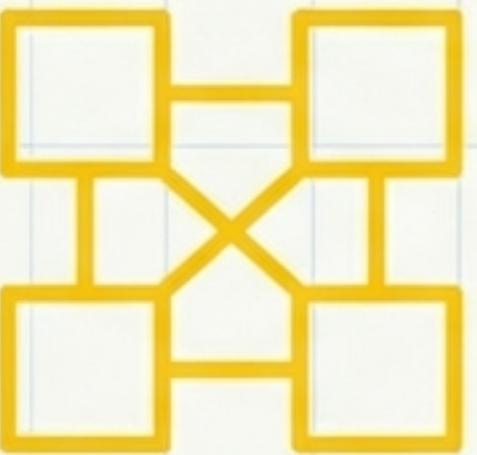
Payment Information Security



A critical security requirement: Payment information must **only** be accessible after a user has successfully logged in. This protects guest data and ensures transactions are tied to verified accounts.

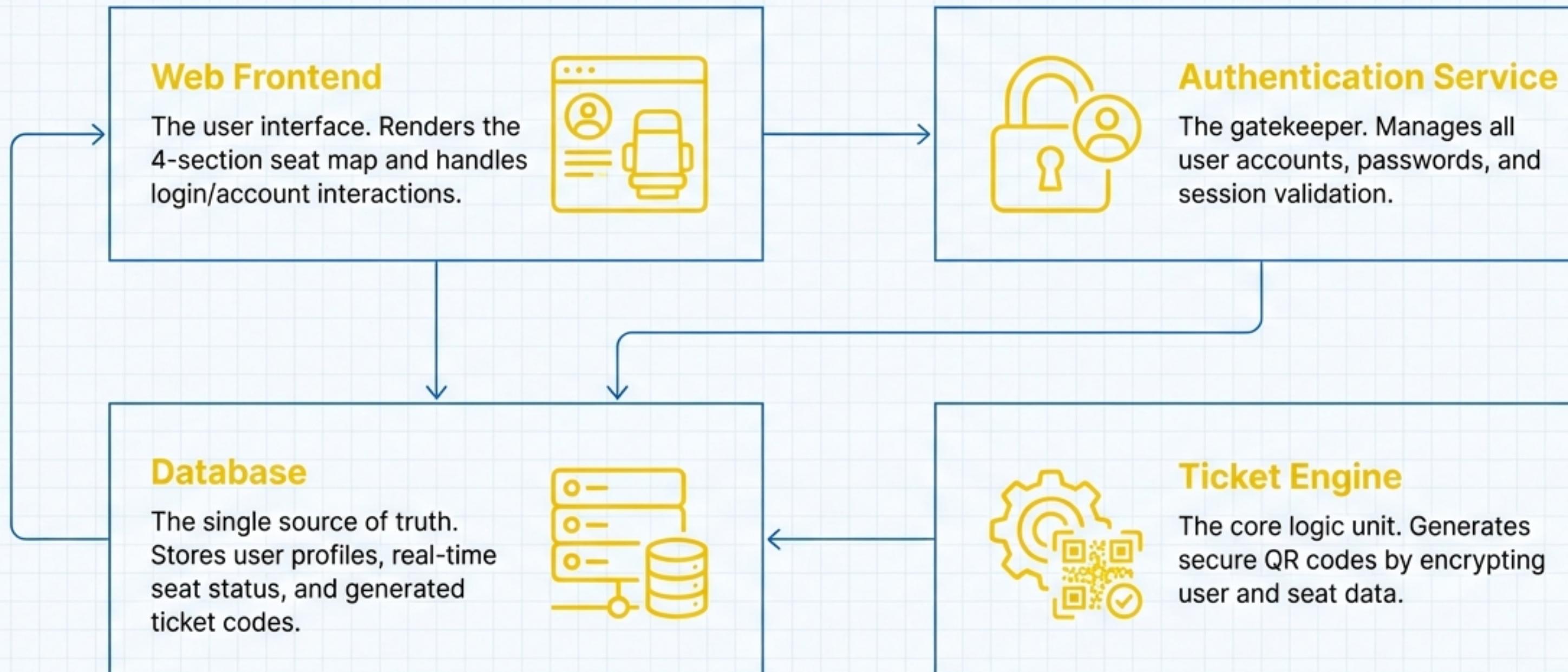


Part 2: The Architecture — A Modular Four-Part Structure



With the requirements defined, we now examine the high-level system architecture. The design is based on four core, decoupled services that work in concert to deliver the user experience.

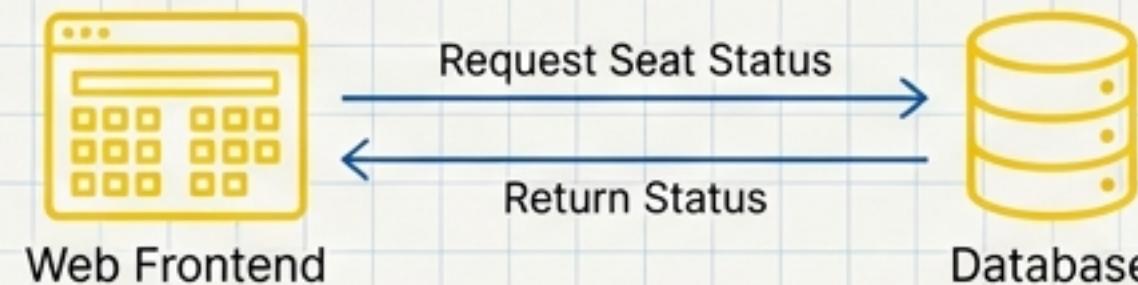
The system is built on four core components.



A typical booking demonstrates the component interaction flow.

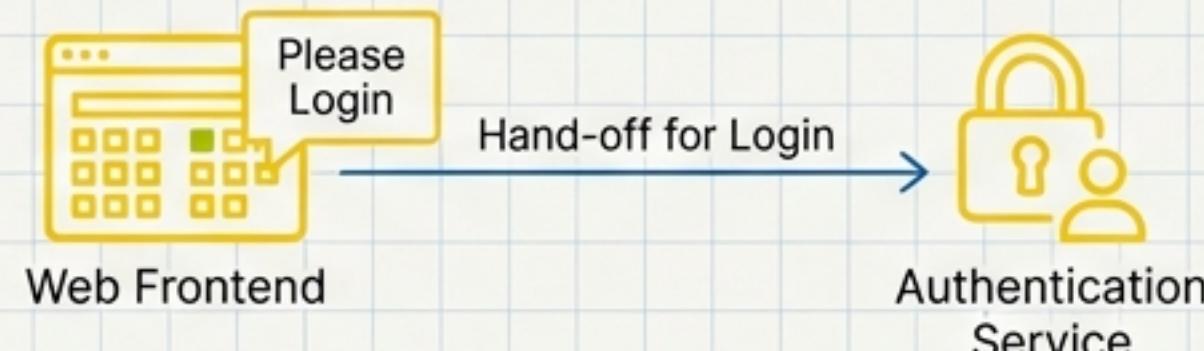
1 Browsing

Action: Guest clicks "Left Section".



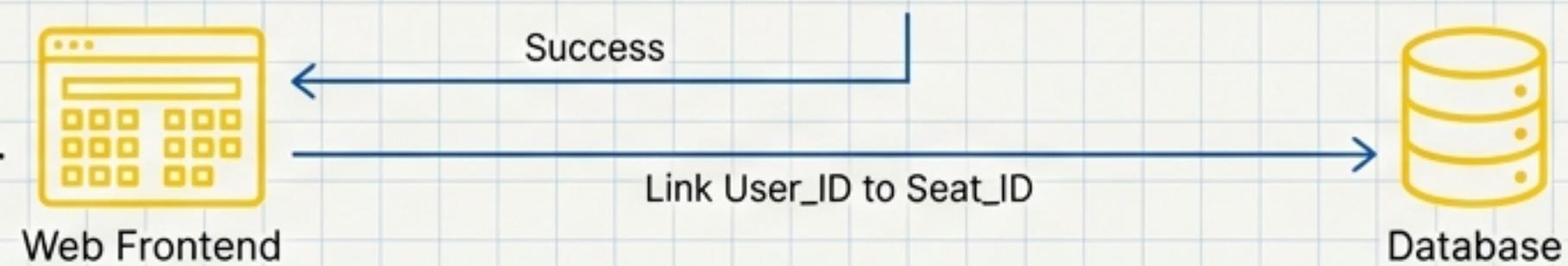
2 Selection

Action: User clicks a Green seat.



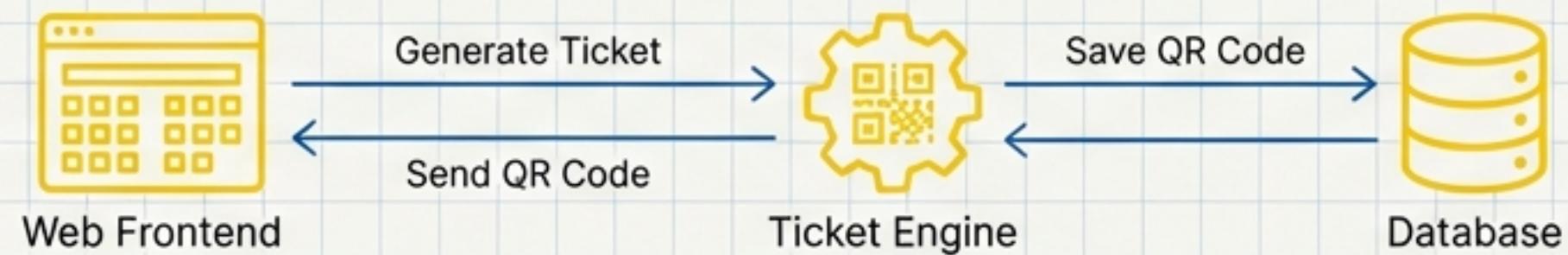
3 Booking

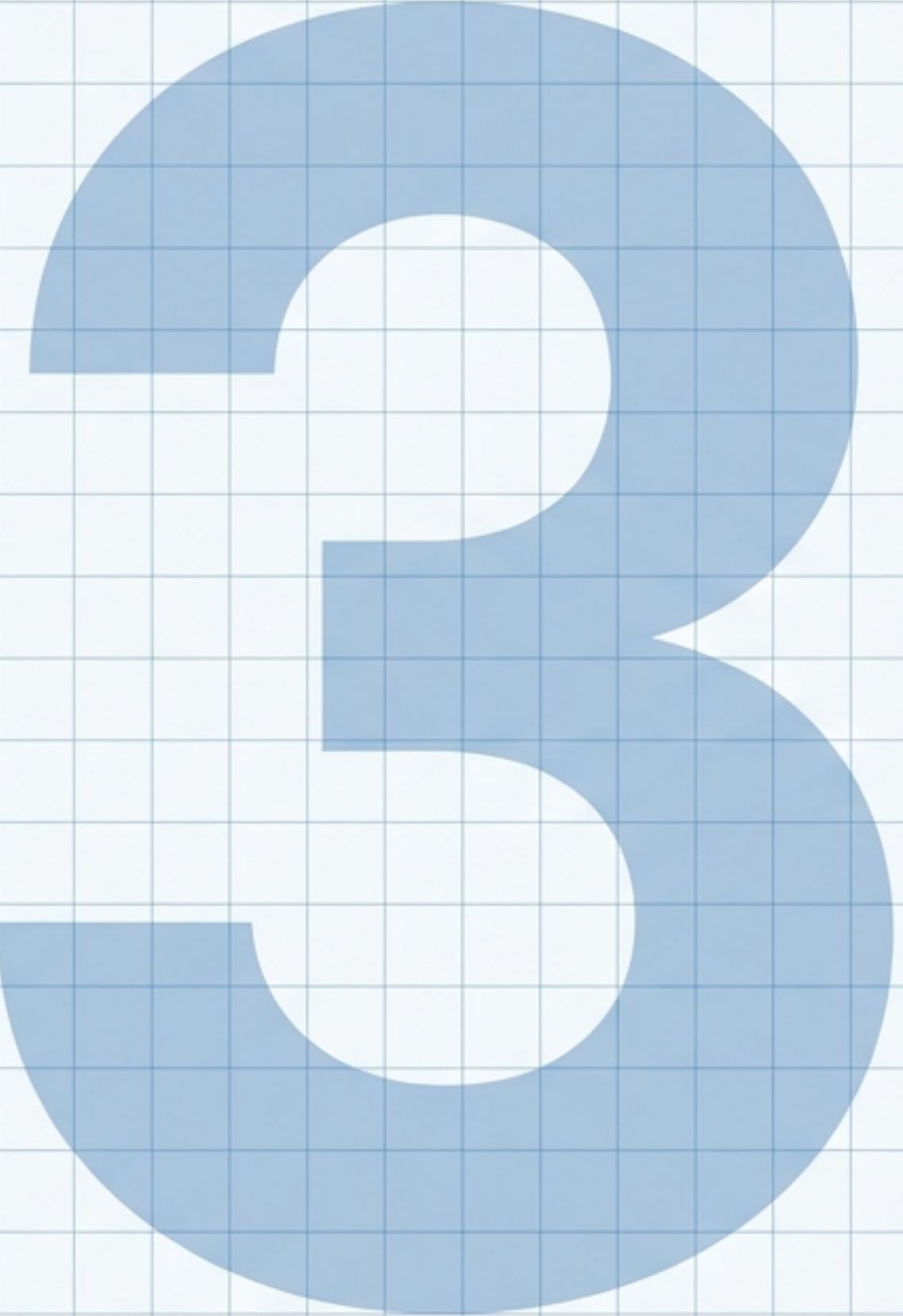
Action: User logs in successfully.



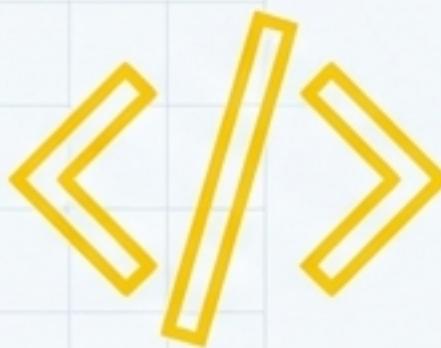
4 Validation

Action: Booking confirmed.





Part 3: Detailed Schematics — Data, Logic, and Interfaces



This section provides a precise look at the internal design, including the data structures, core algorithms, and API specifications that form the technical backbone of the OmniView system.

The system relies on well-defined data structures and a core encryption algorithm.

Information Backbone

User Object

```
{  
  "ID": "...",  
  "Name": "...",  
  "Email": "...",  
  "PasswordHash": "...",  
  "Ticket_History": [...]  
}
```

Seat Matrix

A 2D Array representing the seating chart, where each element is a boolean value (True = Available, False = Occupied).

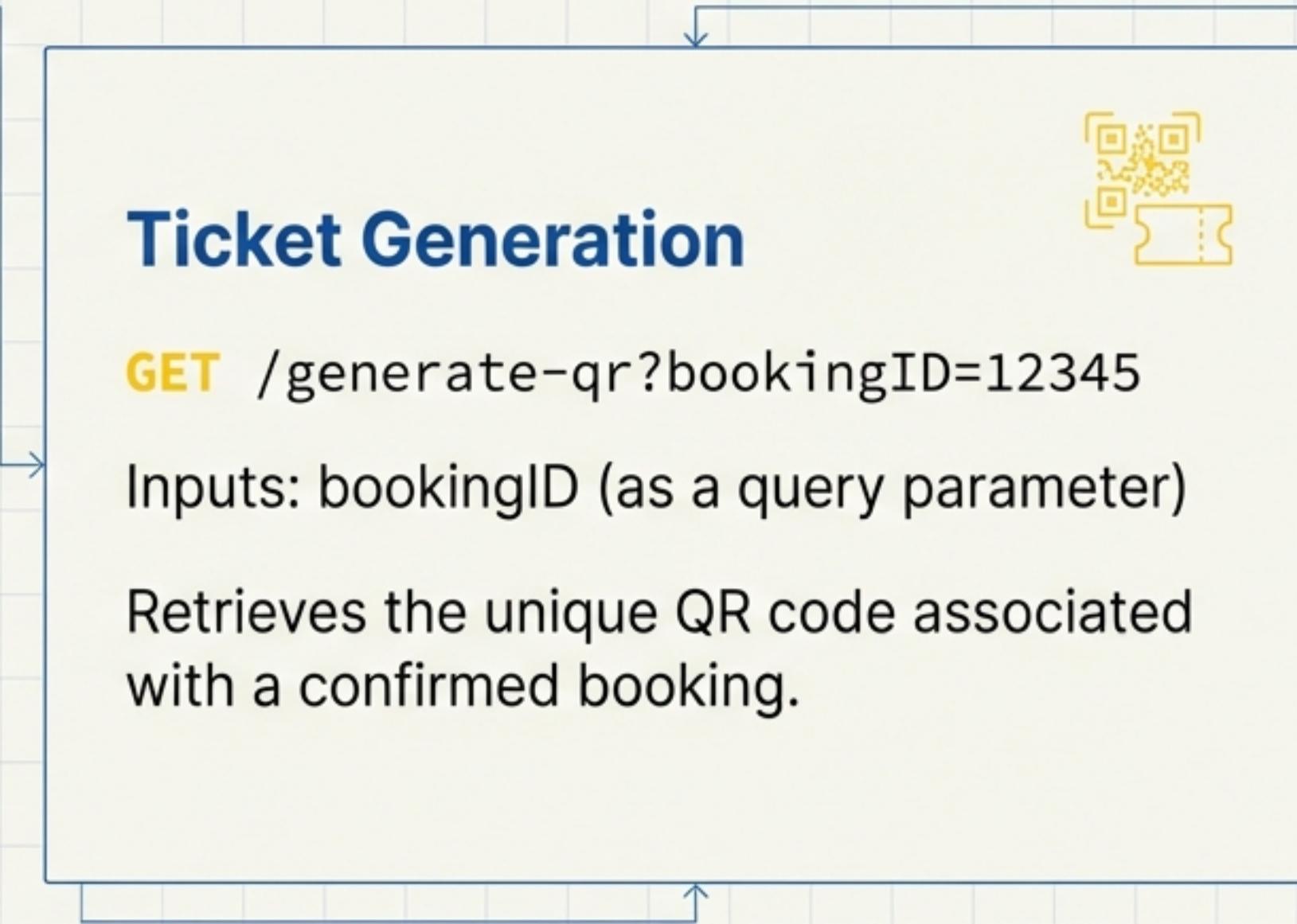
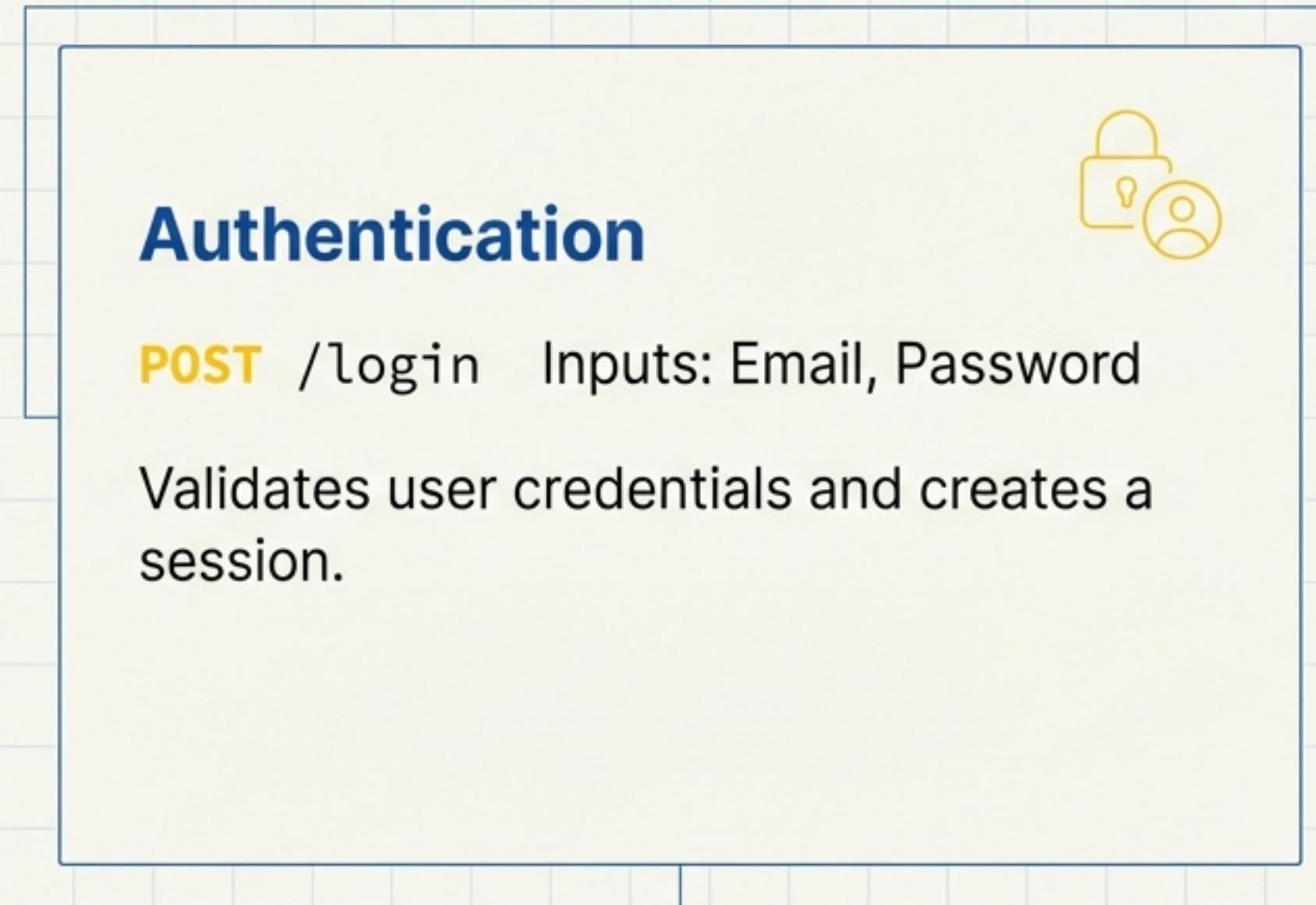
QR Code Generation

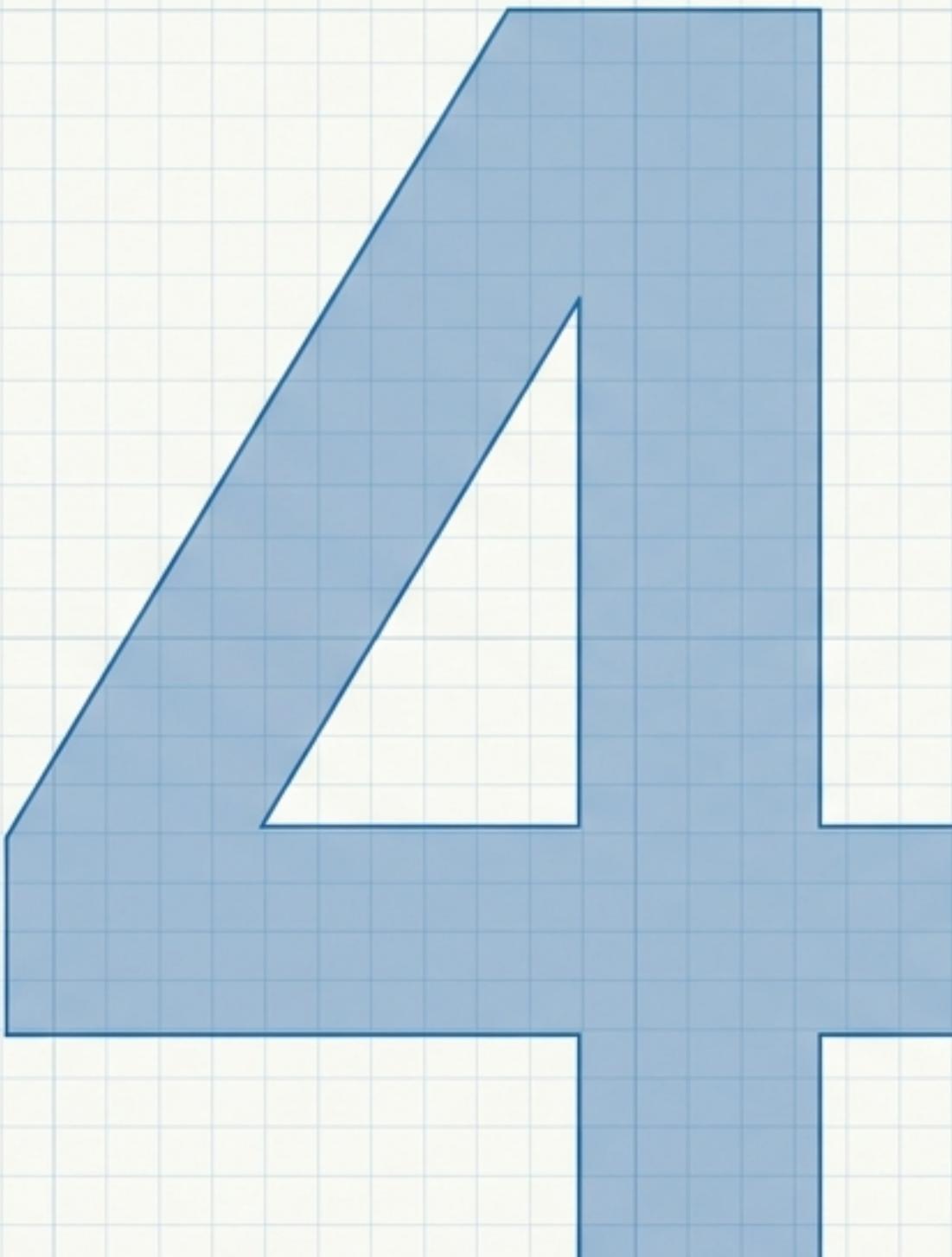
The QR code is generated by encrypting a unique string of data.

```
FUNCTION generateTicket(userID, seatID):  
  dataString = userID + seatID + currentTime  
  qrCode = EncryptToQRCode(dataString)  
  SAVE qrCode TO UserAccount  
  RETURN qrCode
```

Clear API specifications define service communication

Communication between the frontend and the backend services is handled via a defined set of API endpoints.





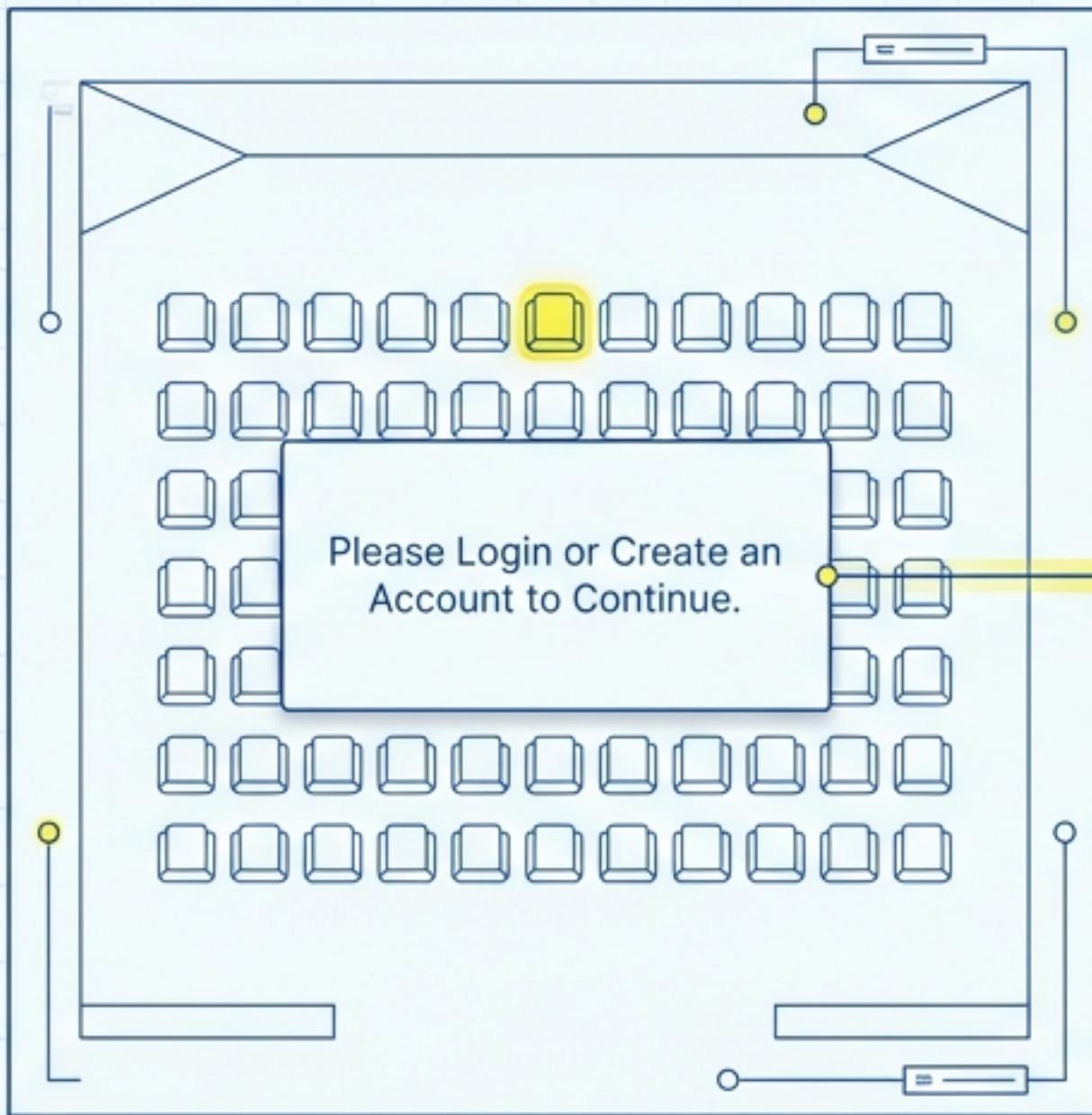
Part 4: Validation — From Theory to Reality



A robust design requires a rigorous validation plan. This section covers the user-facing prototype and the strategic test cases designed to ensure system integrity and performance.

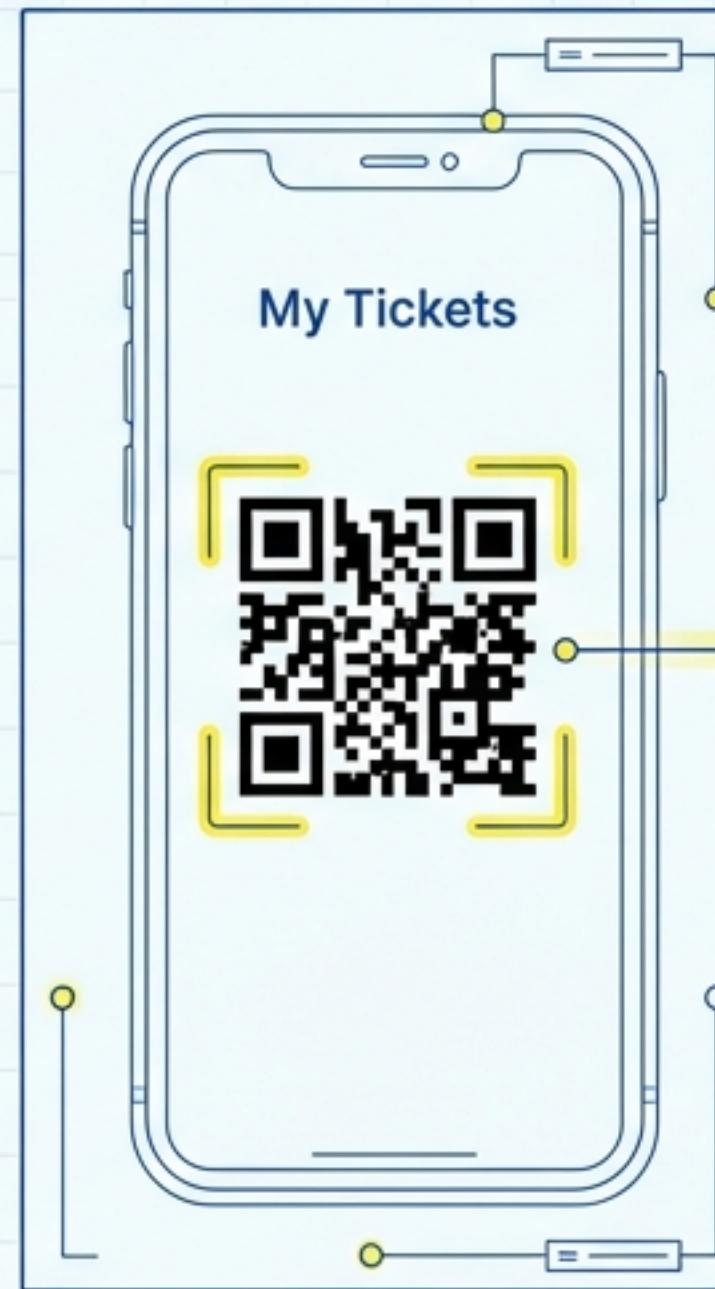
The prototype visualizes the critical login and ticketing flow.

The Login Gate



The login wall appears **only after** a seat is selected, allowing for frictionless browsing.

The Digital Ticket



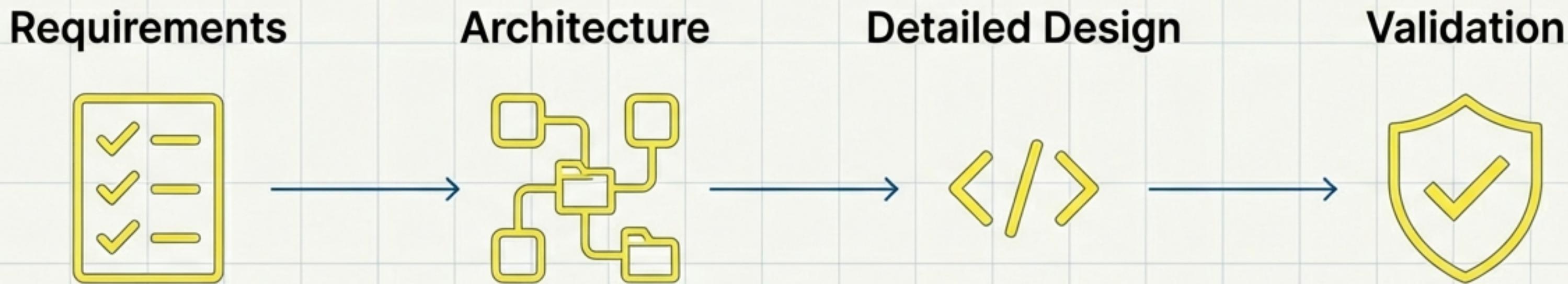
The final QR code is easily accessible from the user's account page.

The testing matrix validates critical system functions and prevents failure.

Test Case	Input Action	Expected Result	**Why we test this?
Authentication Gate	Click “Pay” while not logged in.	Redirects to Login/Signup page.	Ensures data is tied to a real user.
Visual Update	Complete a purchase of Seat A1.	Seat A1 instantly turns from Green to Red for all users.	Validates real-time map updates.
QR Validation	Scan a QR code at the entry point.	System returns “Valid” and marks ticket as “Used.”	Prevents ticket reuse and fraud.

OmniView: A Cohesive and Validated System Design

The OmniView blueprint demonstrates a system that is not just a collection of features, but an integrated whole. The design proceeds logically from clear requirements to a modular architecture and is backed by a strategic validation plan.



The result is a robust, secure, and user-centric platform ready for implementation.