PARKING GARAGE SYSTEM

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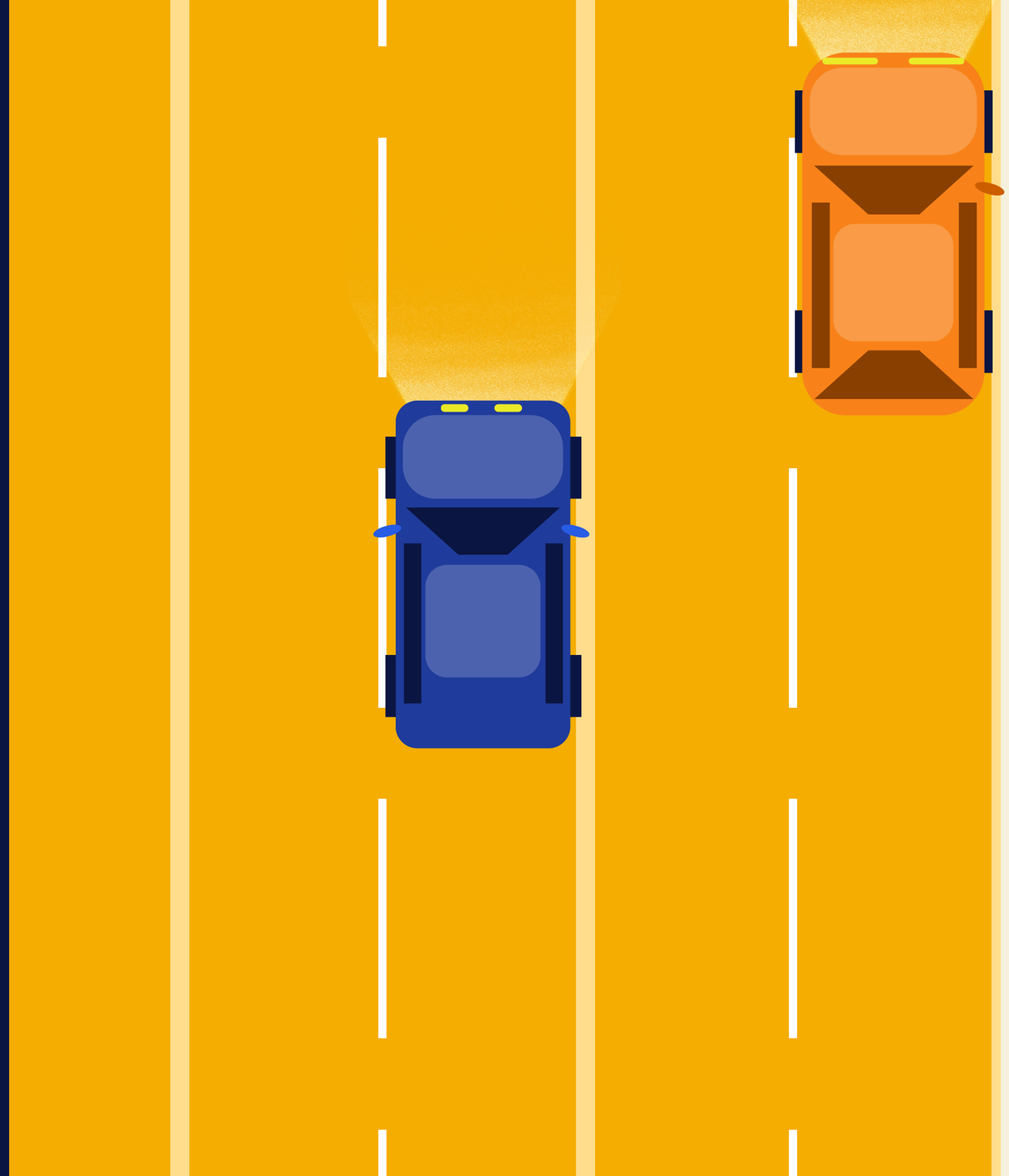
PHASE 1 - REQUIRMENTS

REQUIREMENTS

1. PAYMENT METHOD
2. PARKING DURATION
3. PARKING SPACE TRACKING
4. CONCURRENT CLIENT HANDELING
5. GRAPHICAL USER INTERFACE
6. EMPLOYEE LOGIN
7. USAGE REPORT
8. MULTI GARAGE MANAGEMENT
9. ERROR HANDLING

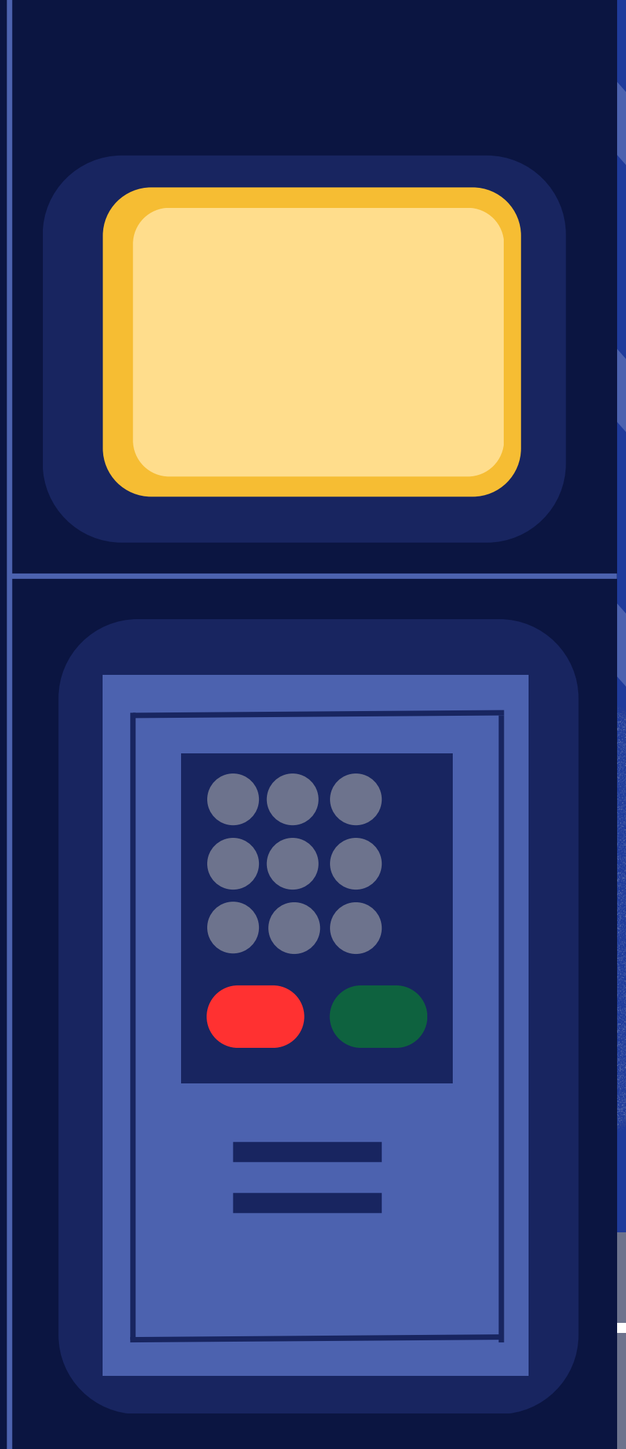
TOPIC DESCRIPTION

- Parking garage system will:
  - Allow customers to enter and park for a fee.
  - Track available parking spaces and display dynamically.
  - Charge customers upon leaving the garage based on the duration of their stay.
- Use GUI for client/employee side app that communicates with the server side.



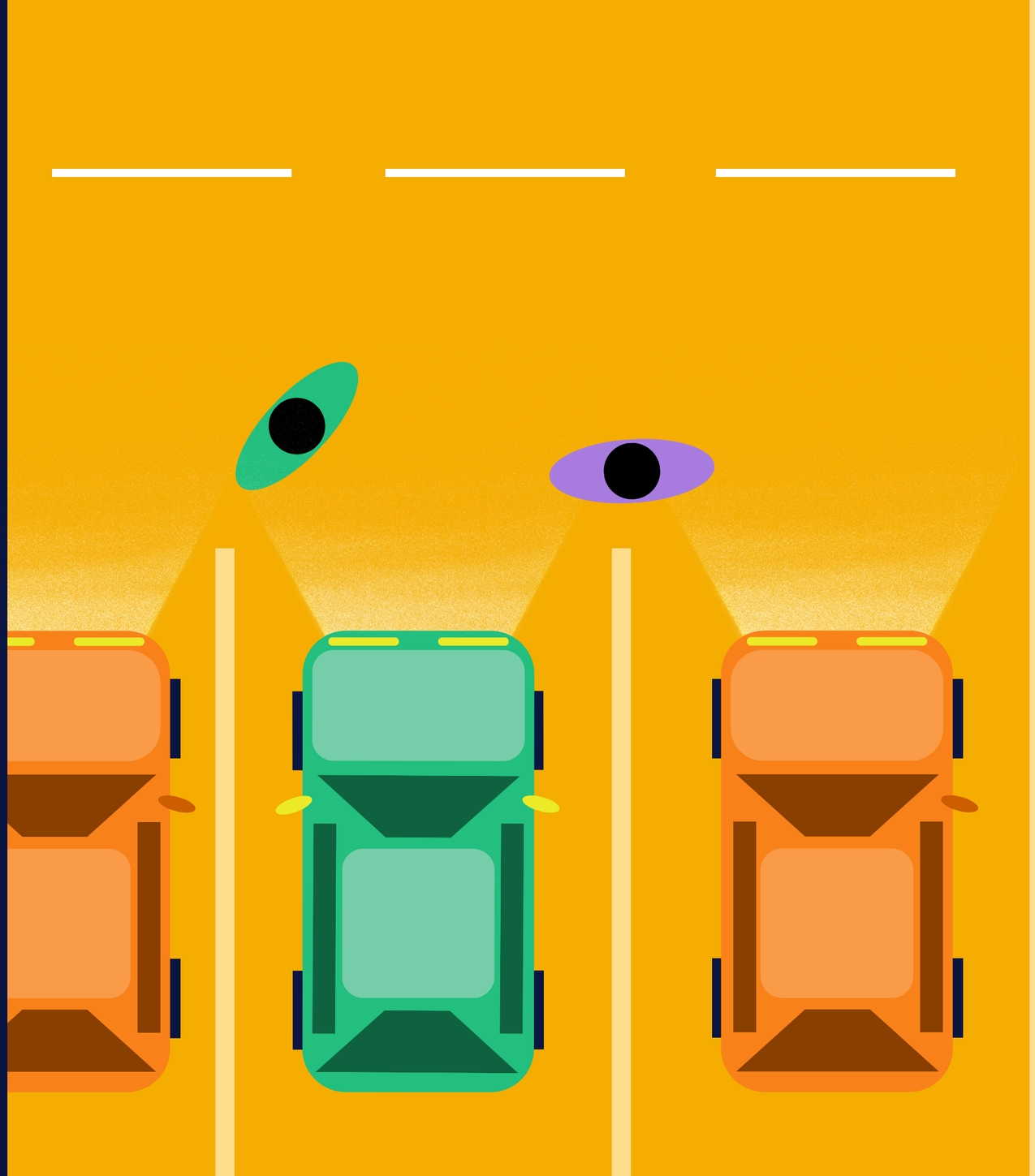
1.) PAYMENT METHOD

- The system must support various payment methods, including credit/debit cards and cash.
- Employees should have the ability to manually process payments for customers who require assistance or encounter issues with automated systems.
- The system should also automate payment that allows customers to pay based on the duration of their stay.



2.)PARKING DURATION

- Tracking the duration of a parked car should be measured and stored for quick retrieval during payment calculation.

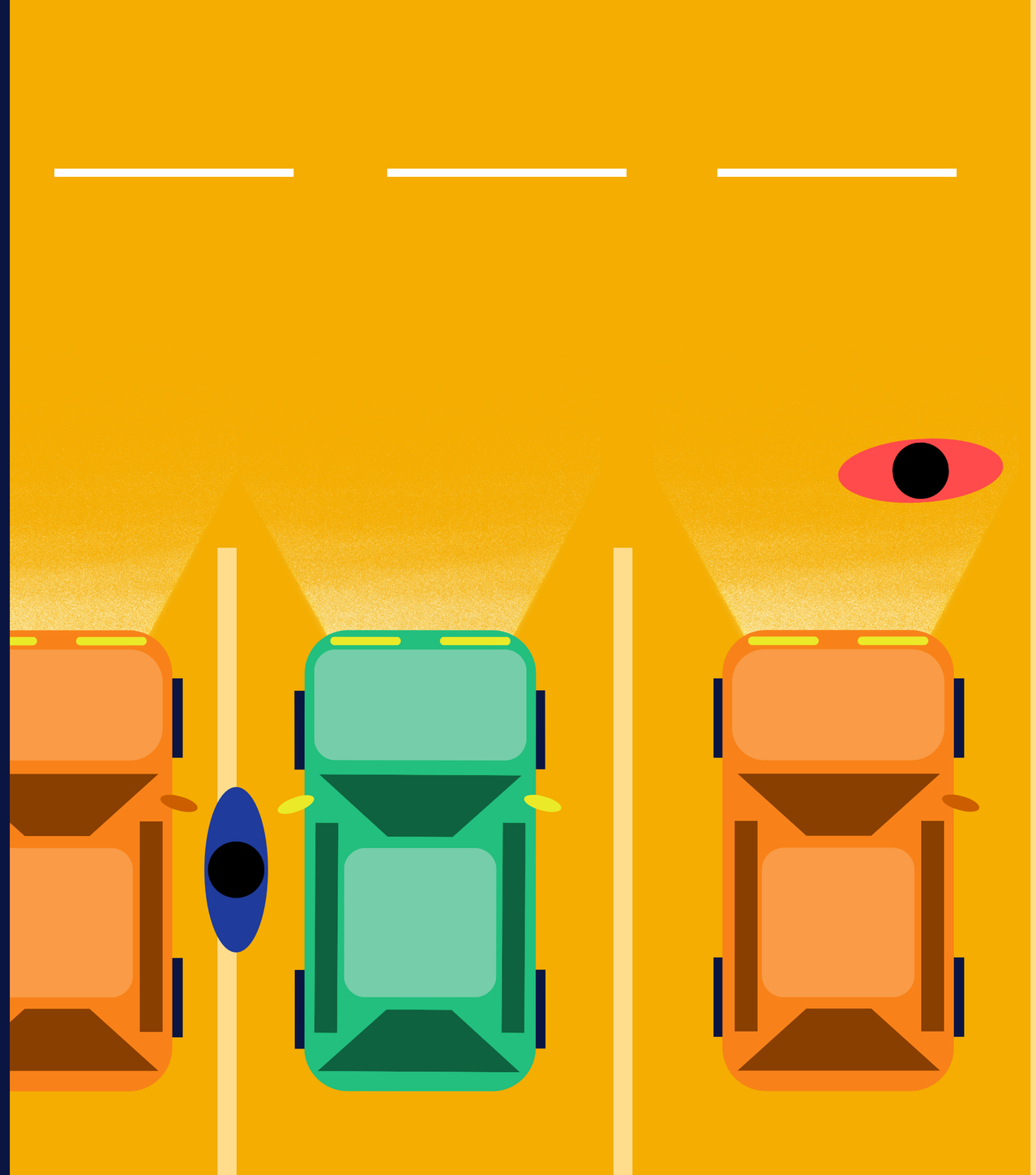


3.)PARKING SPACE TRACKING

- The system should keep track of available parking spaces and number of customers waiting to determine allocation of parking and availability for pending clients.

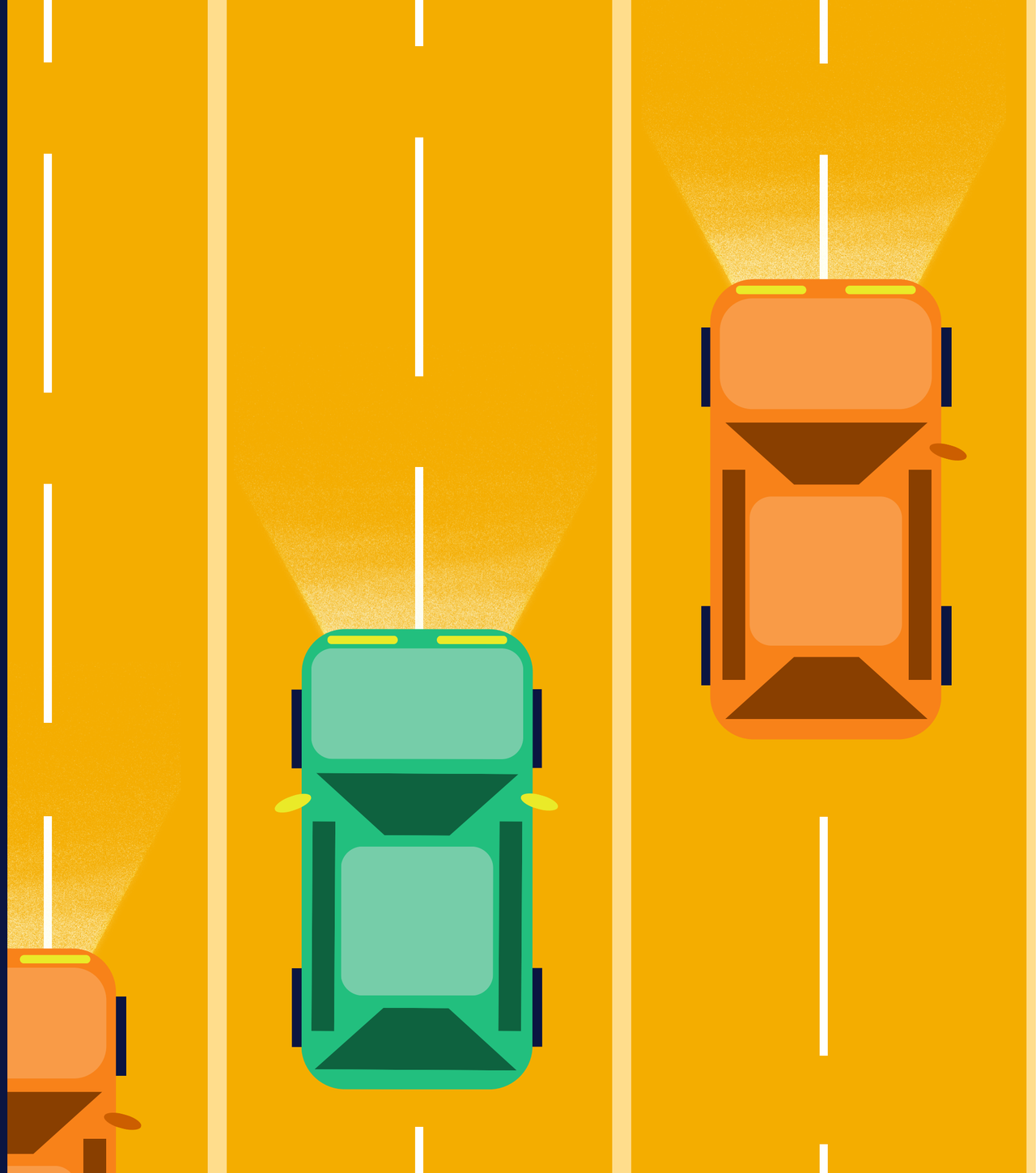
4.)CONCURRENT CLIENT HANDELING

- The system must support handling multiple clients simultaneously, allowing several vehicles to enter, pay, and exit the parking facility without delays or system crashes.
- Proper synchronization mechanisms should be implemented to avoid data mixups or other issues.



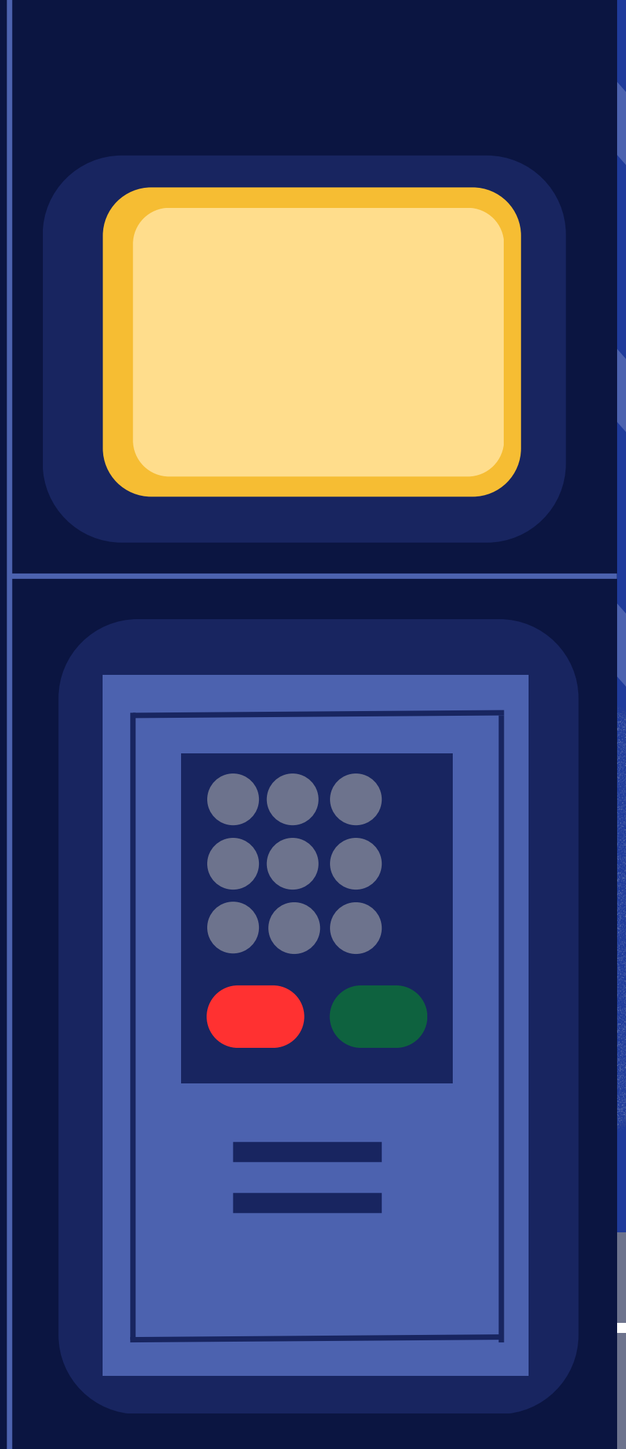
5.)GRAPHICAL USER INTERFACE

- The system must provide a GUI for both customers and employees
- The GUI must display parking availability, fee details, and payment options.



6.) EMPLOYEE LOGIN

- Employees must log in with a username and password.
- System must validate if employees use unique ID and password to login.
- Only authorized employees can process payments and access usage reports.

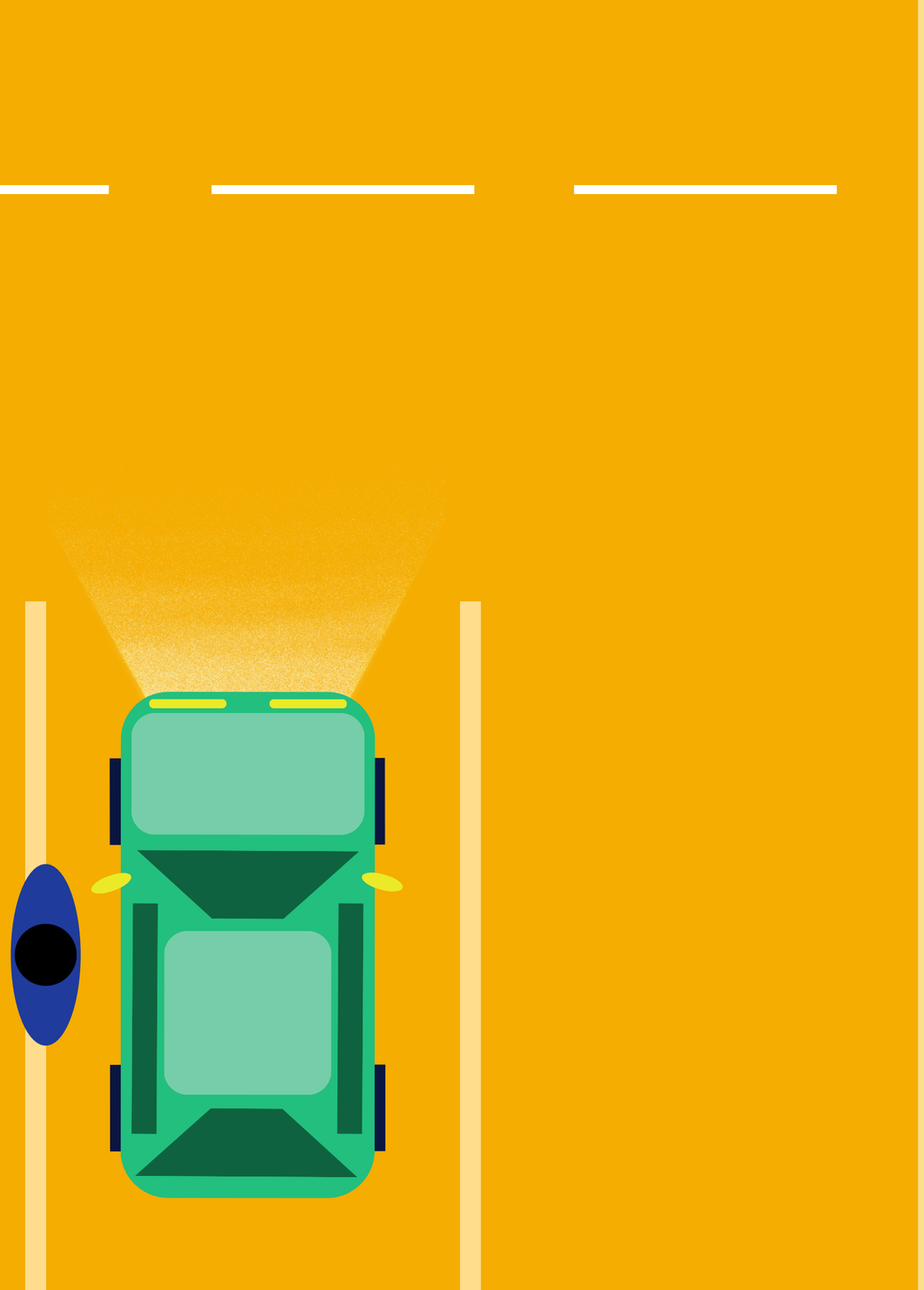


7.)USAGE REPORT

- The system must generate daily, weekly, and monthly usage reports.
  - total revenue
  - peak times
  - space utilization.
- Monitor
  - Performance and errors.
    - Number of users who prefer system without manual assistance.

8.)MULTI GARAGE MANAGEMENT

- The server must support managing multiple parking garages, allowing independent tracking of parking availability, payments, and vehicle logs for each location.
- Each parking garage should have its own set of data (e.g., capacity, payment records, customer entries/exits), while still allowing the central server to coordinate and synchronize operations across all garages.
- The system should provide a user interface that allows employees to view and manage data from all garages in real-time, ensuring efficient operations.

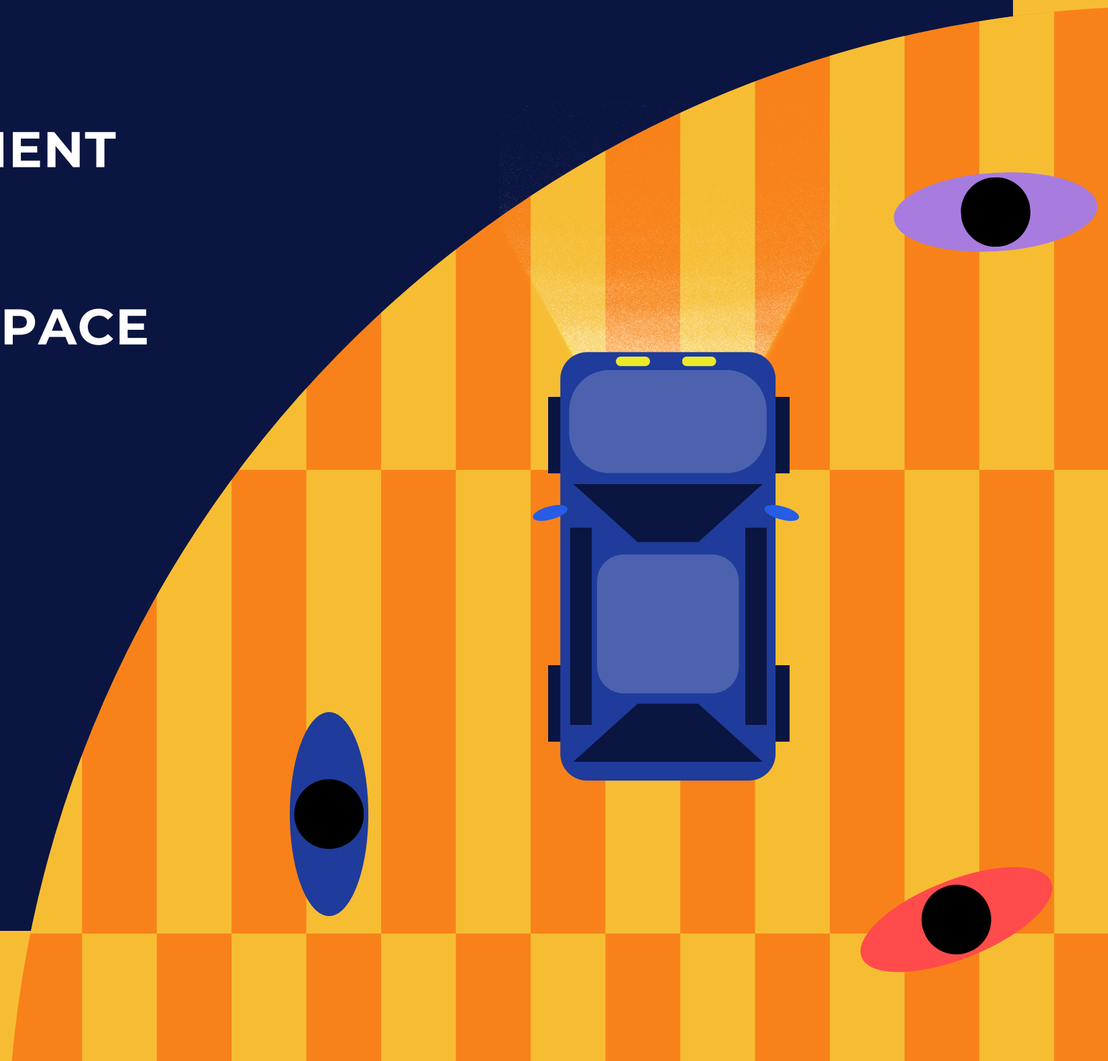


9.) ERROR HANDELING

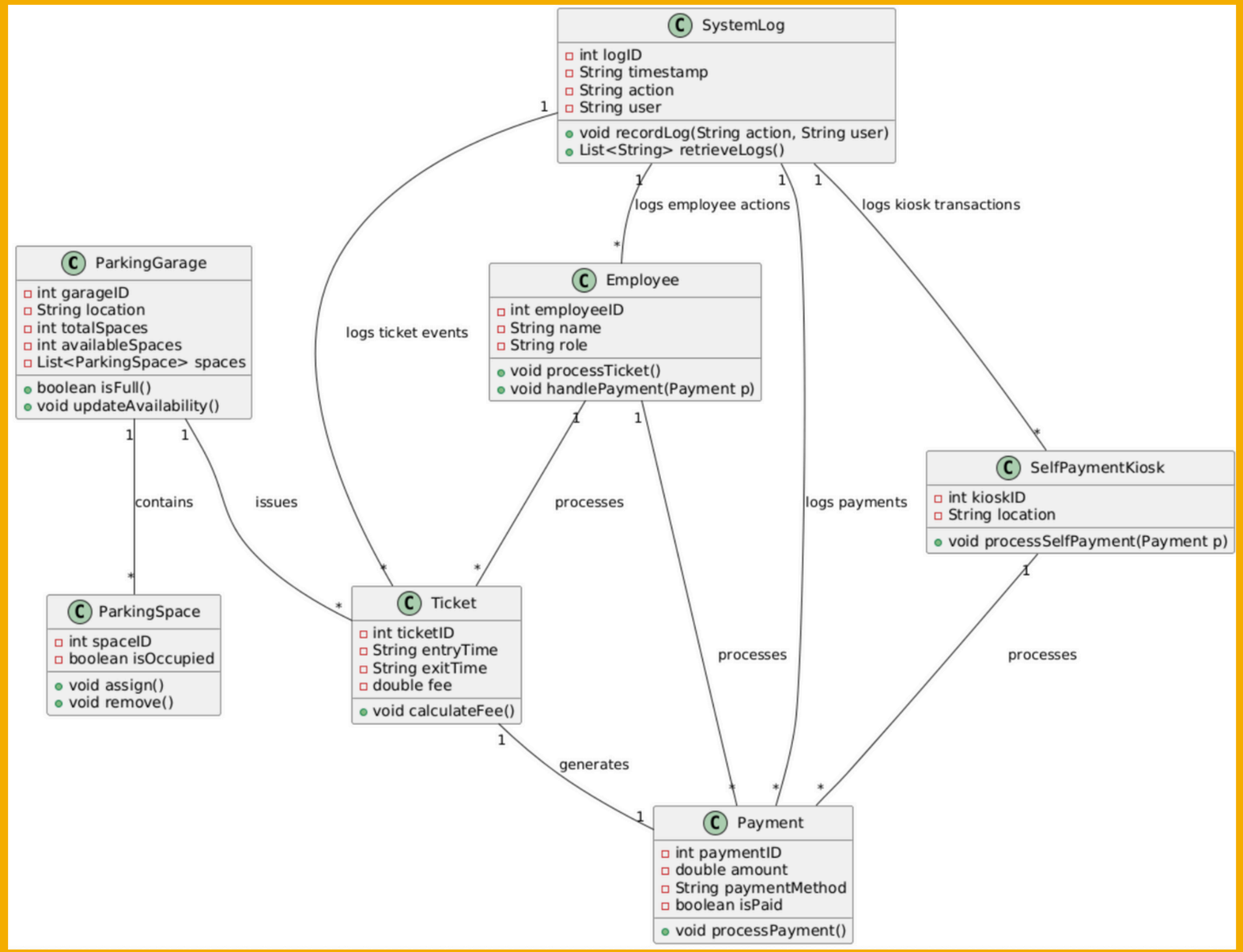
- The system should detect and handle any failed attempts/request or connection issues.
  - This includes failed attempts at issuing tickets, accessing real-time data of garages, and payment processing.

CLASS CANDIDATES

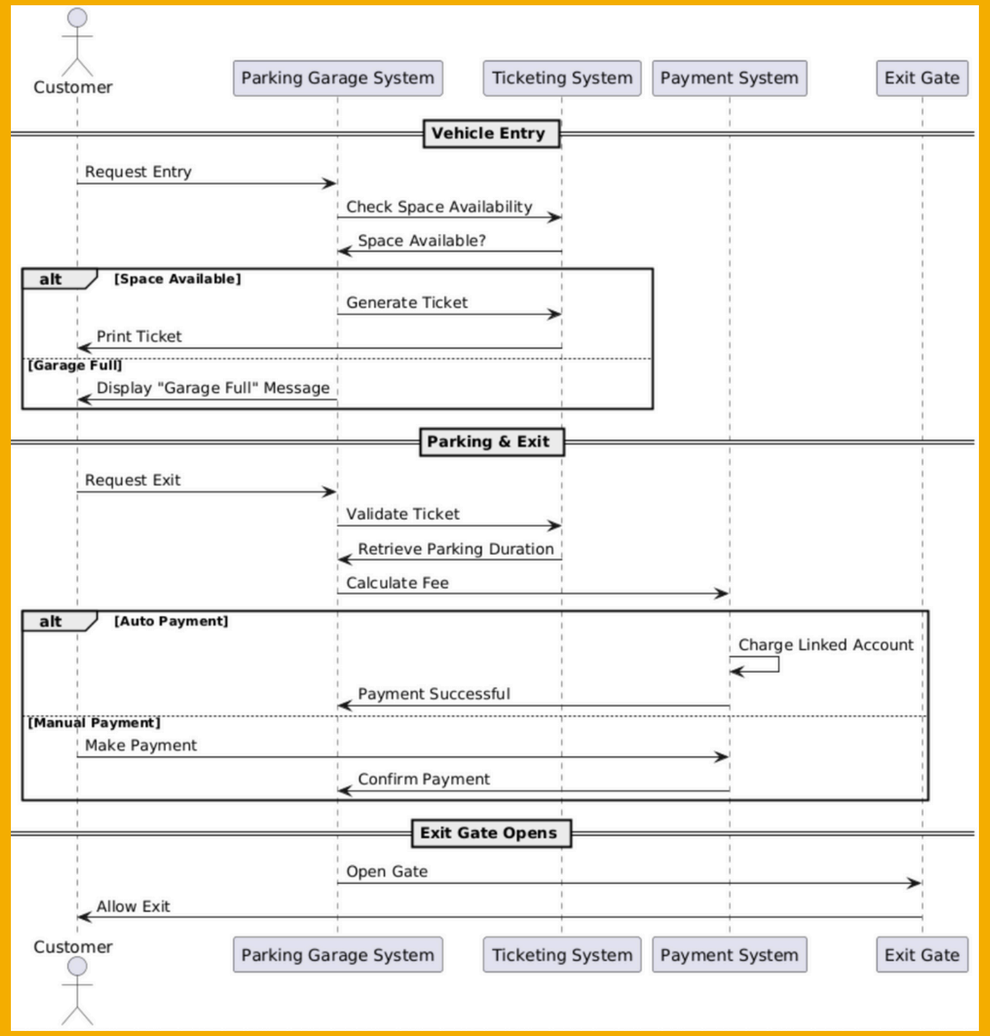
1. EMPLOYEE
2. PARKING GARAGE
3. SYSTEM LOG
4. PARKING TICKET
5. SELF PAYMENT
6. PARKING SPACE
7. PAYMENT

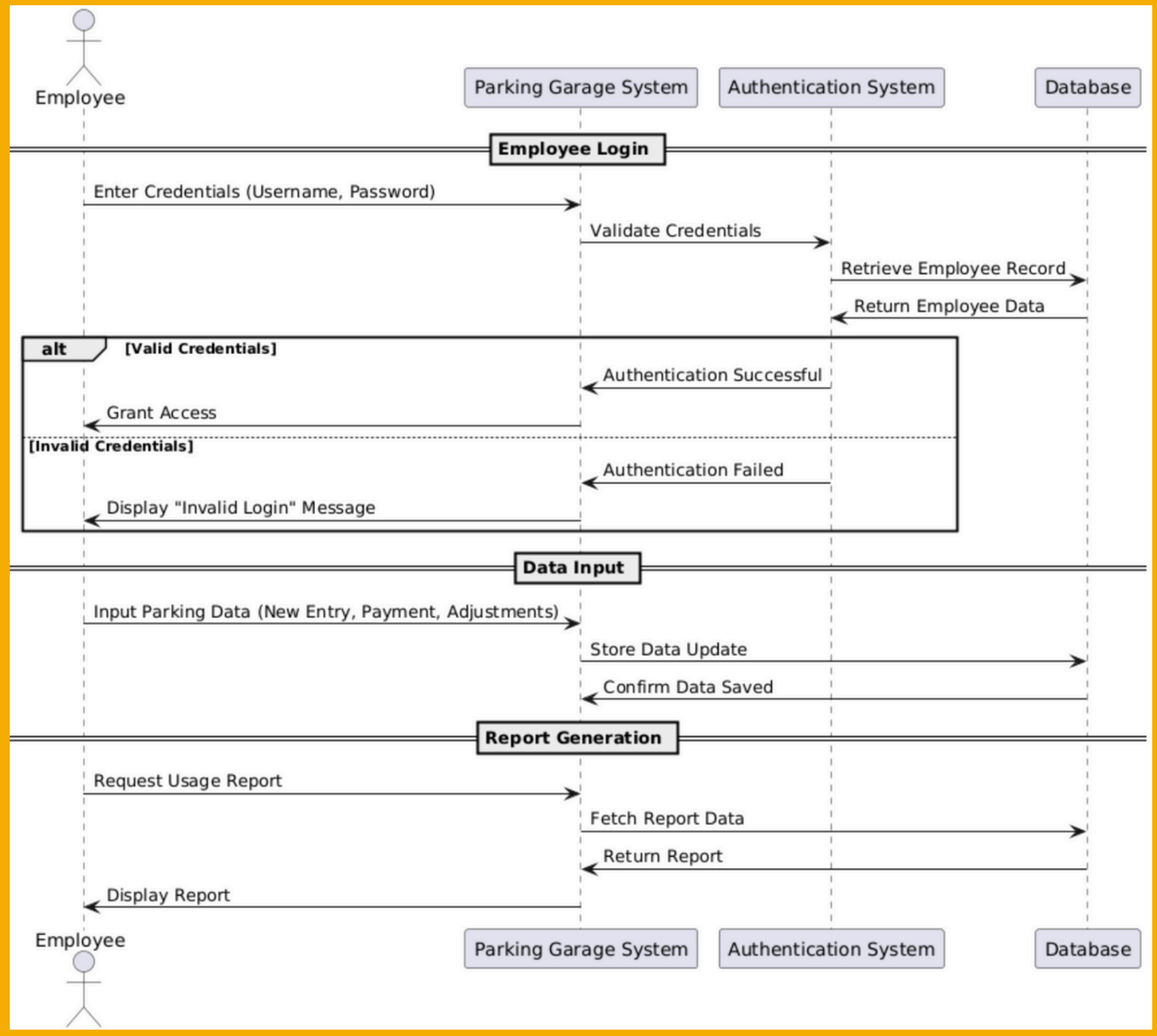


CLASS DIAGRAM



SEQUENCE DIAGRAMS





THANK YOU!

ANY QUESTIONS?

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