

A long-exposure photograph of a busy city street at night. The image shows multiple lanes of traffic with light trails from cars and streetlights. Tall skyscrapers with illuminated windows line the street, and a large billboard is visible on the right side. A semi-transparent blue box with a circuit-like pattern is overlaid on the left side of the image, containing the text 'PowerEnJoy' and 'RASD'.

# PowerEnJoy

## RASD

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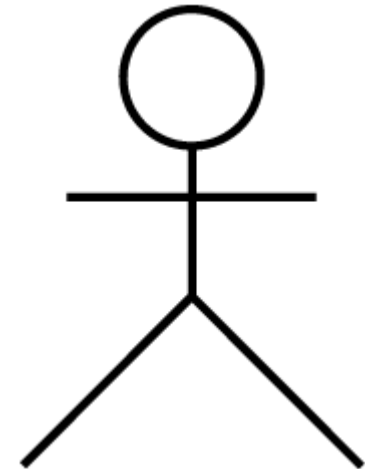
# Introduction



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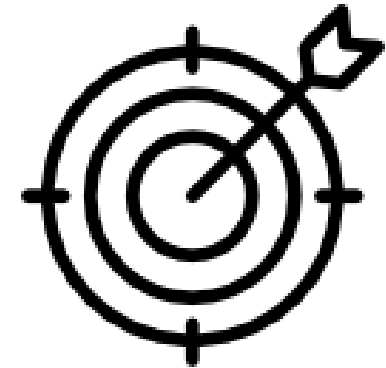
## Actors

- Guest
- Registered client
- System administrators



## Goals (most relevant)

- The Registered Client can hire a car through web/mobile application.
- The Guest Client can register himself/herself into the system as Registered Client.
- Ensure the Registered Client the possibility to receive a discount on his/her last ride.
- Ensure a uniform distribution of cars in the city.
- Ensure that a Registered Client's bad behaviour is punished with the application of some penalties.





# Overall description



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# Overall description

## External services

- Google Maps
- Driving licences database
- Payment interface service
- SMS gateway provider
- GPS system



# Overall description

## Assumptions (most relevant)

- The Clients can leave the rented cars only in one of the safe areas.
- There isn't an old system providing the same services.
- The position of each car is known using the GPS signal. Each car is provided of an autonomous GPS system reachable from our service.
- In the cars there are sensors that provides the system information about the current number of passengers.
- A client can maintain his/her reservation of the car during a stop, parking the car temporary in a not safe area. This is allowed only if the client proclaim the intention to do that through the application. During this stop the client continues to pay with some reduction of the standard hiring cost.





# Specific requirements



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# Specific requirements

## Functional requirements (example)

### G1 - The Registered Client can hire a car through web/mobile application

- The system allows the Registered Client to choose the car to hire only between the available ones.
- The system allows only one reservation per time for each Registered Client.
- The system allows the Registered Client to cancel his/her request.
- The system considers the reservation request as valid for at most one hour from the moment in which the request of hiring is accepted. If the Registered Clients doesn't reach the car before this time expires, the system gives him/her a penalty of one euro and mark the car as `available' again.
- When a car is reserved the system marks it as 'unavailable'.
- The system unlock the chosen car only when the Registered Client is nearby and he/she communicates this to the system through the application.



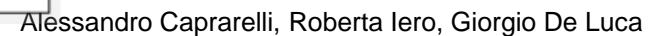
# Specific requirements

- The system locks the car when the Registered Client parks it in a safe area or in a power grid station and he/she communicates the system the intention of ending the rent.
- When the rent is finished the system marks the car as “available” again.
- The system starts charging the Registered Client for a given amount of money per minute as soon as the engine ignites.
- The system stops charging the user as soon as the car is parked in a safe area or in a power grid station and the Registered Client exits the car. Then the system starts the payment procedure.
- The system allows the Registered Client to start driving if and only if he/she insert his/her personal code.
- The system allows the Registered Client to choose an address in which he/she wants to hire a car or if he/she wants to be located through the GPS signal.
- The system must supervise the charge of the car during all the rental period, showing the current charge on the GPS navigation device. It also has to show a warning notice if the charge is equal to the minimum possible charge admitted.
- The system allows the Registered Client to find the location of an available car within a certain distance from his/her current location.



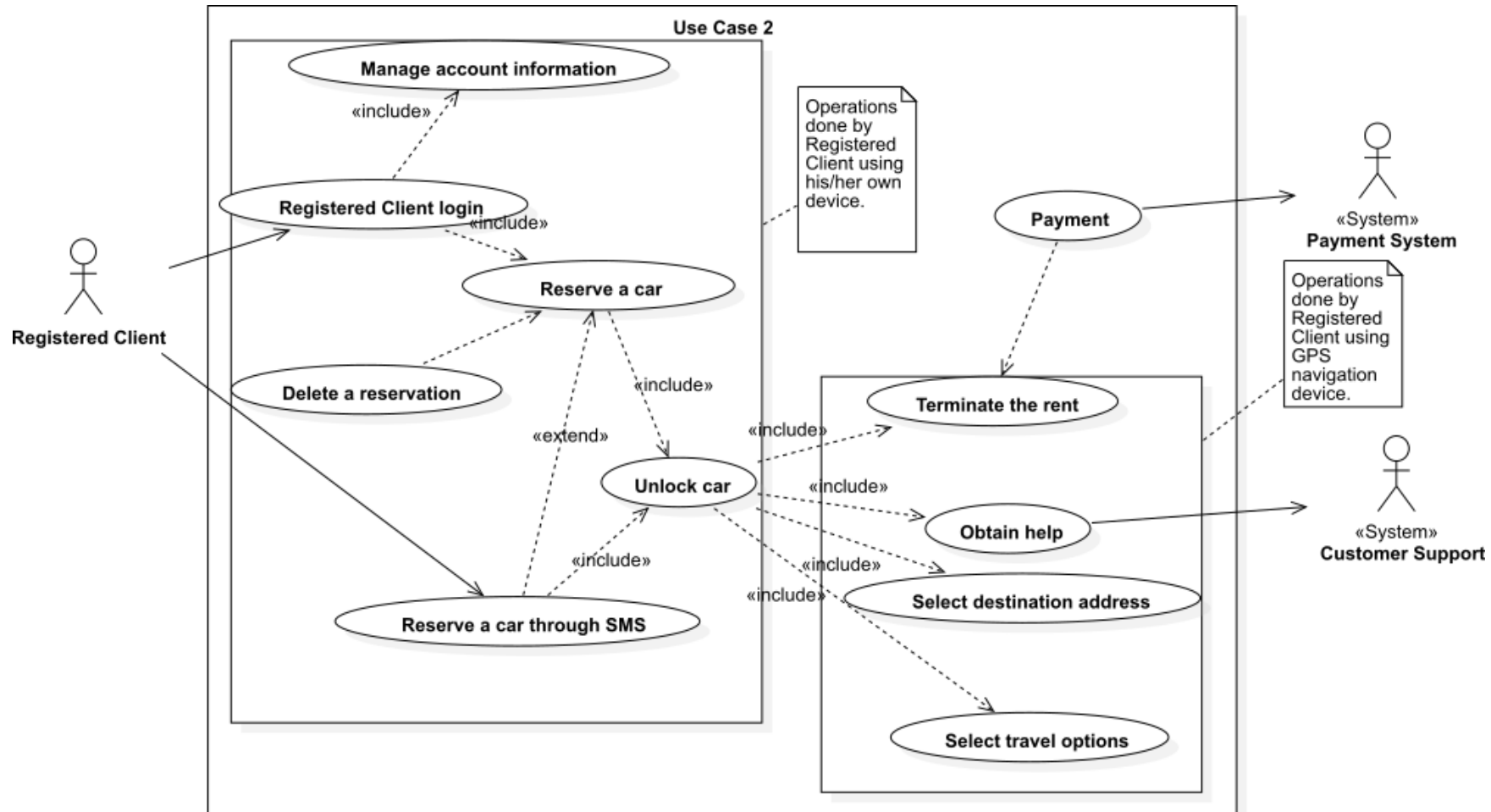


## Use Case 1



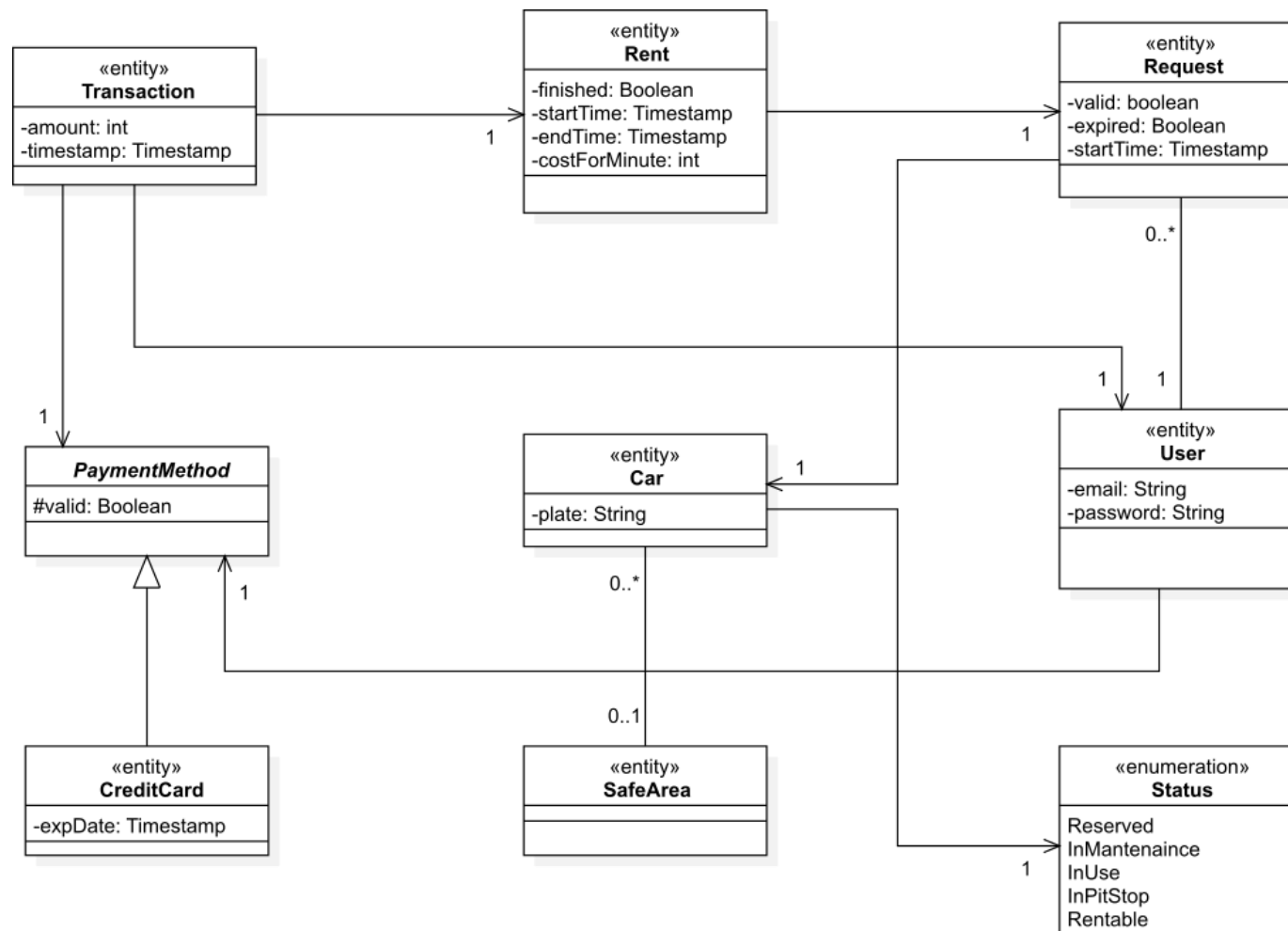
# Specific requirements

## Use Case 2



# Specific requirements

## Class Diagram





# Alloy



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## Generated world

