POLITECNICO DI MILANO

PowerEnJoy DD

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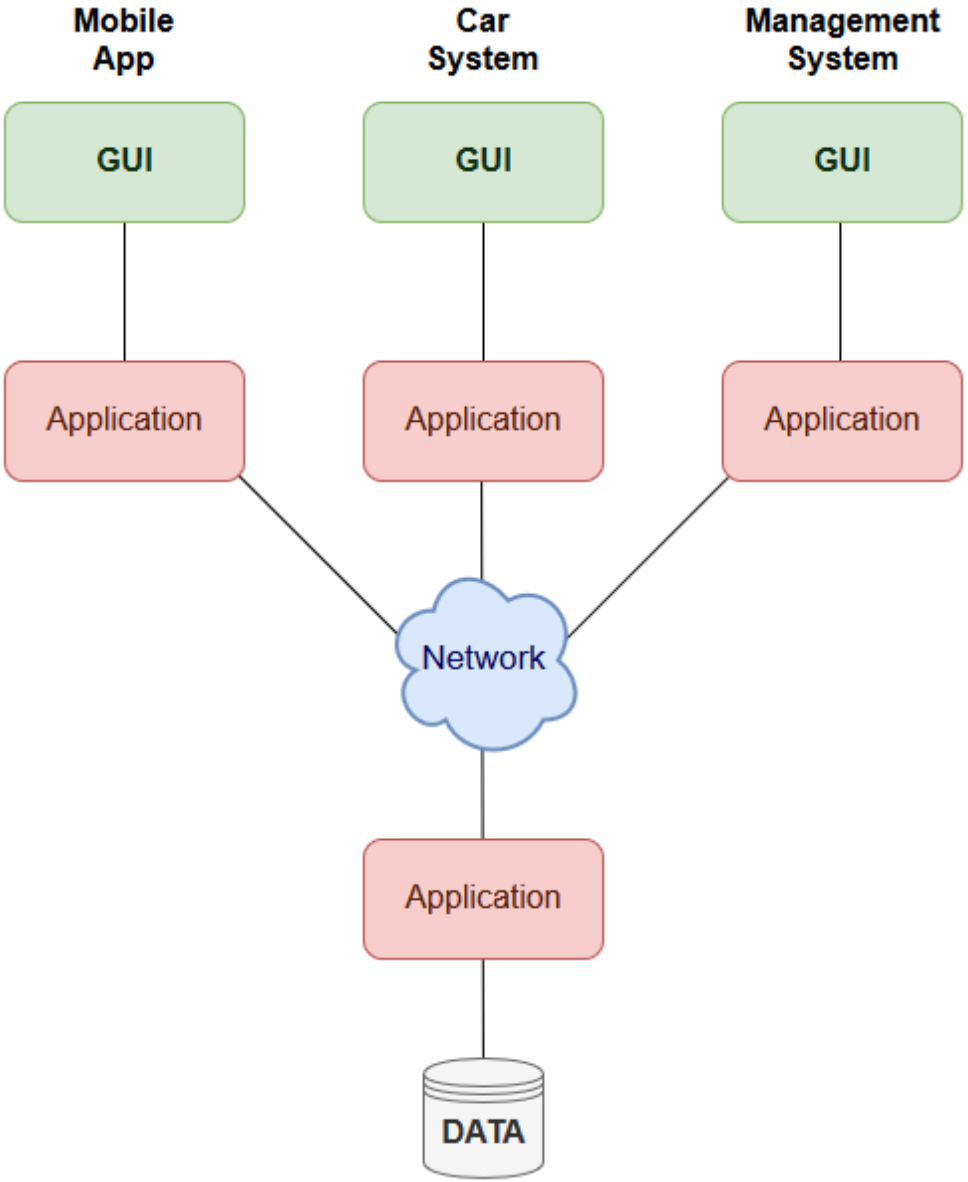
Introduction

- Purpose
  - Describe PowerEnJoy in a more detailed and technical way
  - State architectural decisions
- Scope
  - The goal of “PowerEnJoy” is to simplify car sharing allowing user to benefit from the service in an easy and fast way

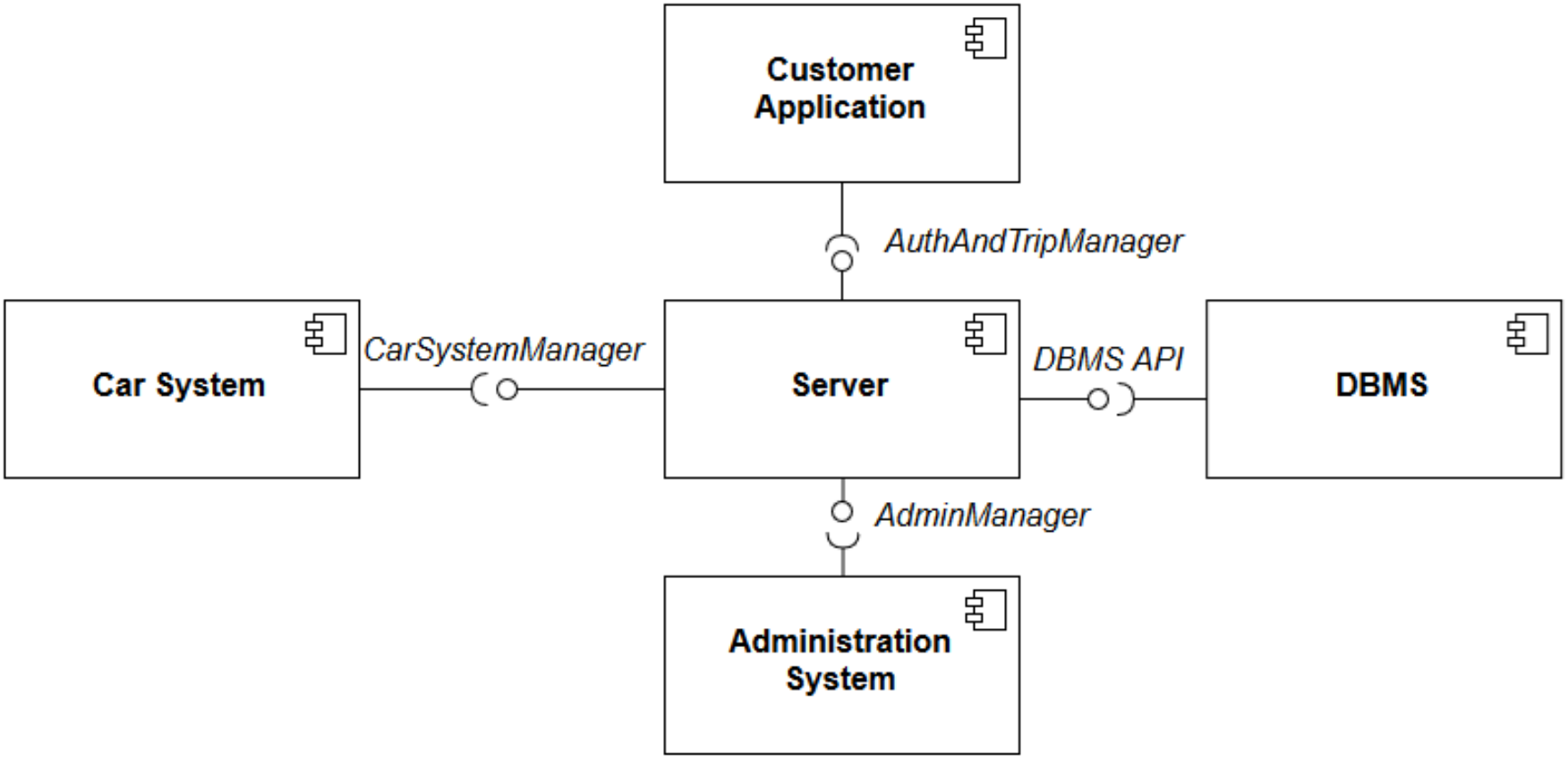
Design overview

- Three independent parts wit the same structure
- Each part presents a two-tier arcitecture with distributed logic
- Each part has its own GUI and backend independent from one another

Design overview

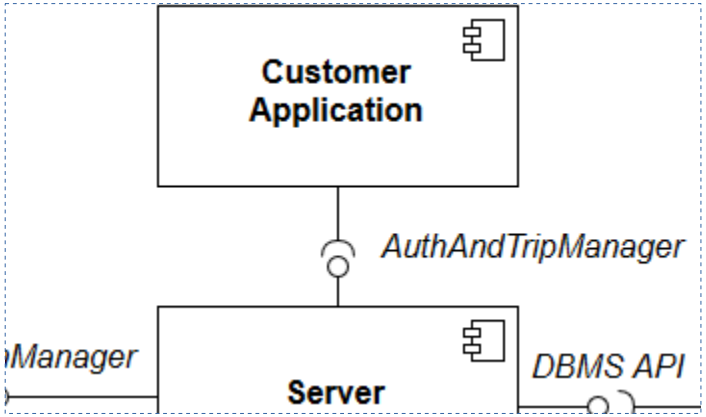


UML models: Components diagram



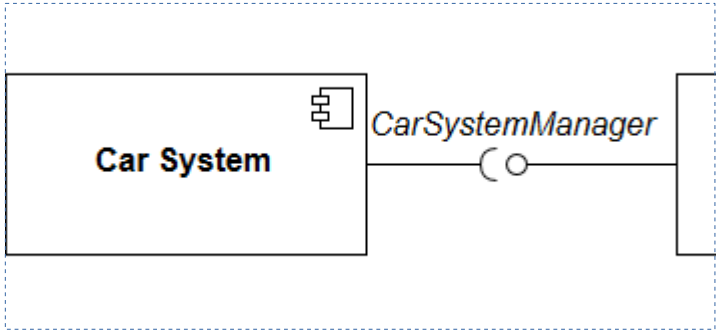
Interfaces

- *AuthAndTripManager*
  - Register and Login
  - Reserve car
  - Find safe areas
  - Drive car

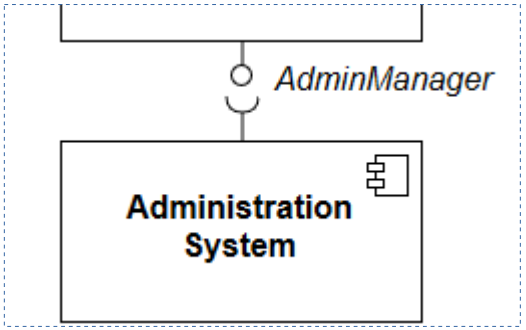


Interfaces

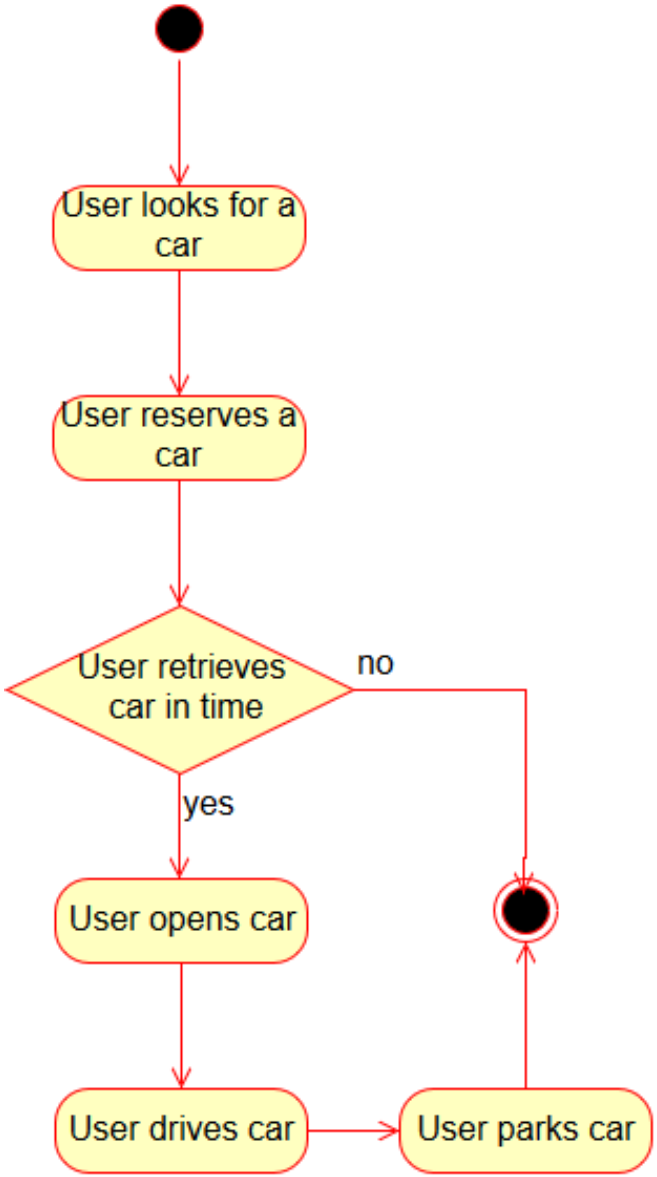
- *CarSystemManager*
  - Open/Lock car
  - Display current fee



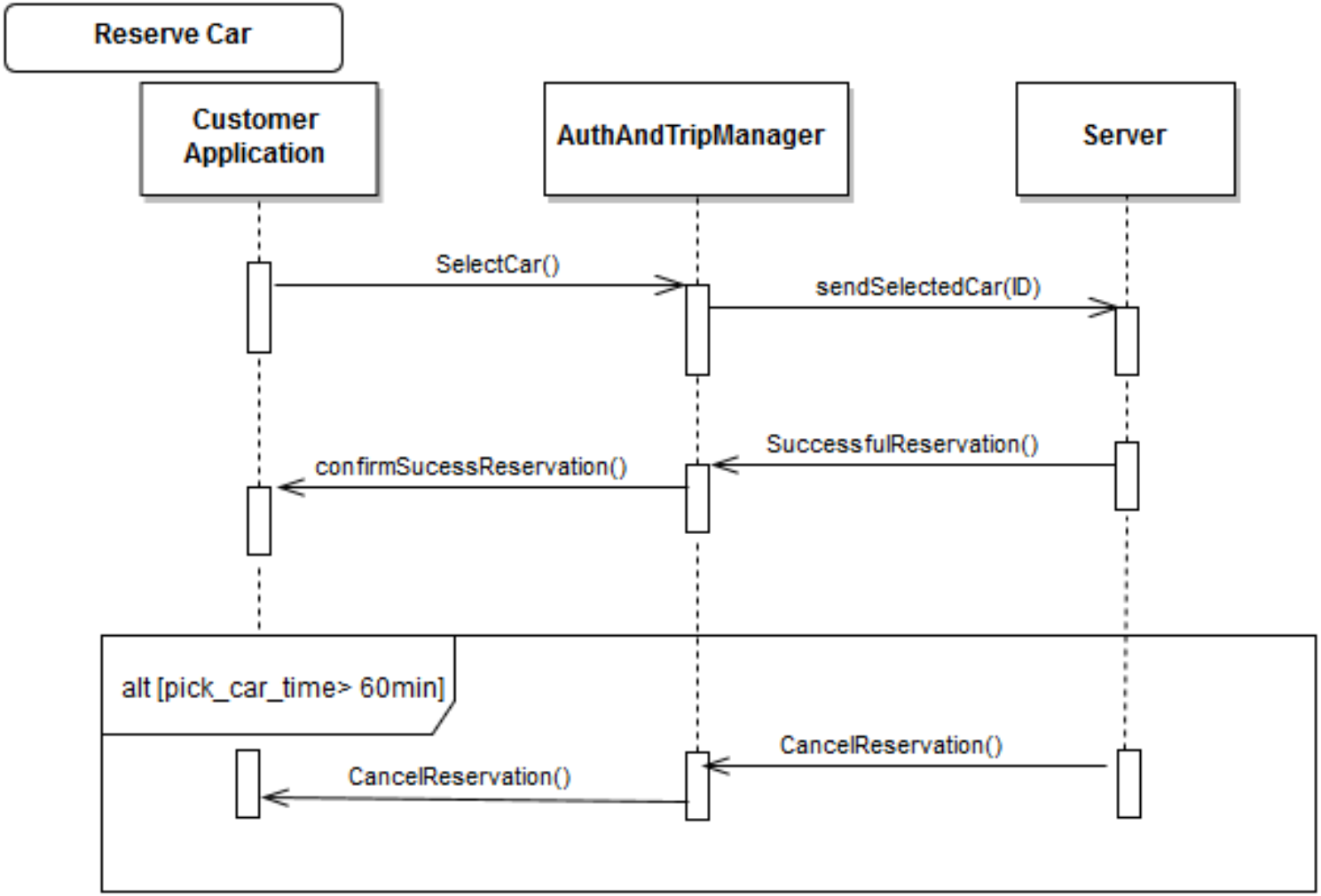
- *AdminManager*
  - Suspend account
  - Mark car as out of order
  - Manage safe areas



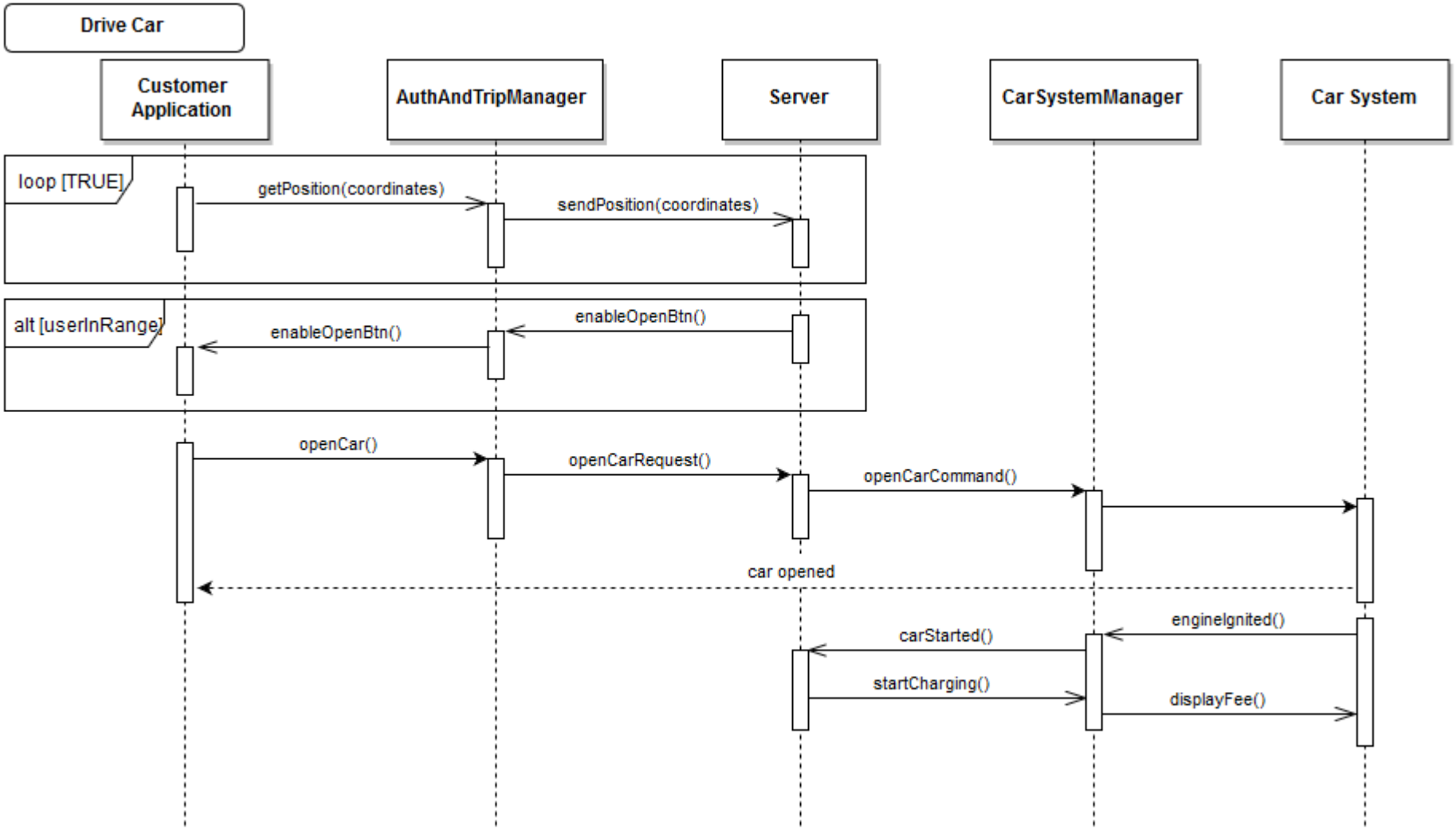
UML models: Sequence Diagrams



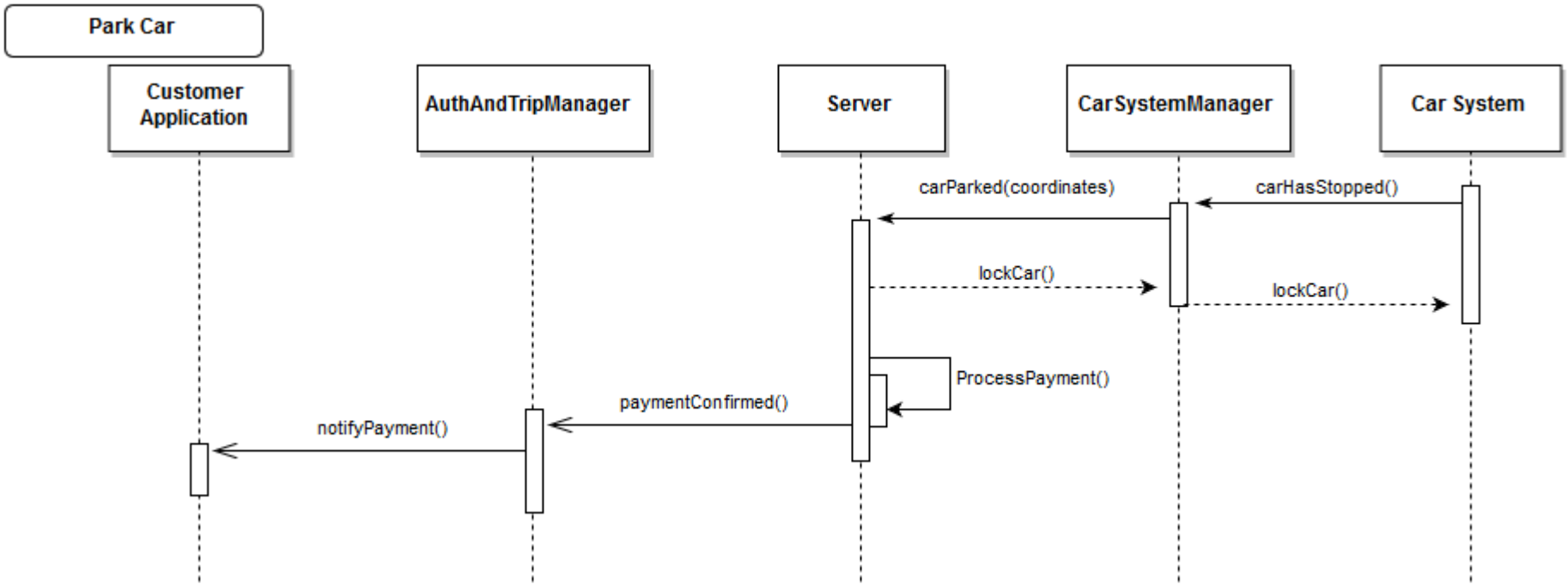
UML models: Activity Diagram



UML models: Activity Diagram



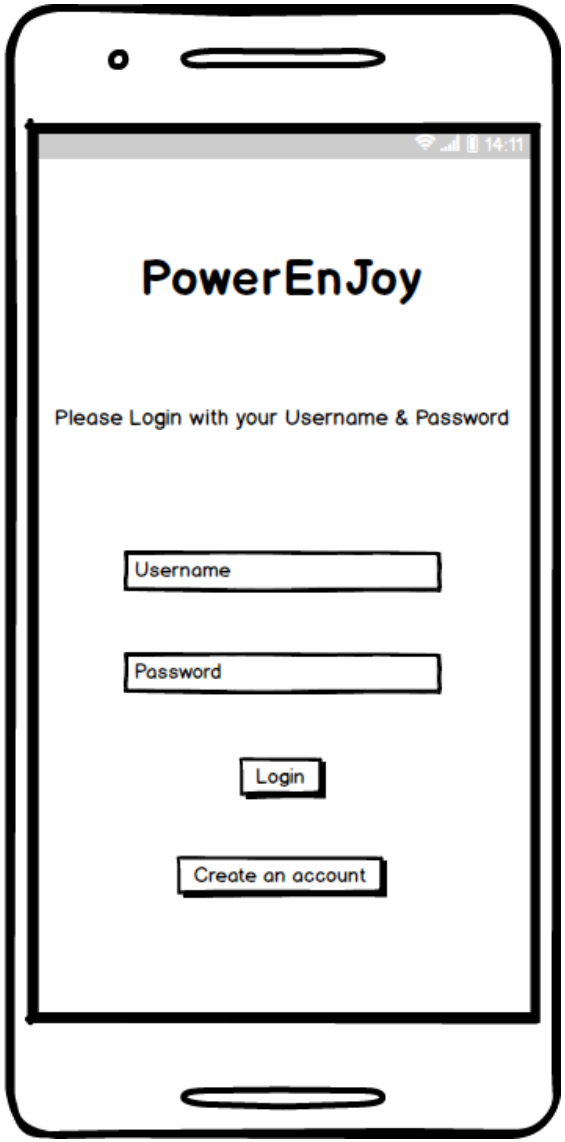
UML models: Activity Diagram

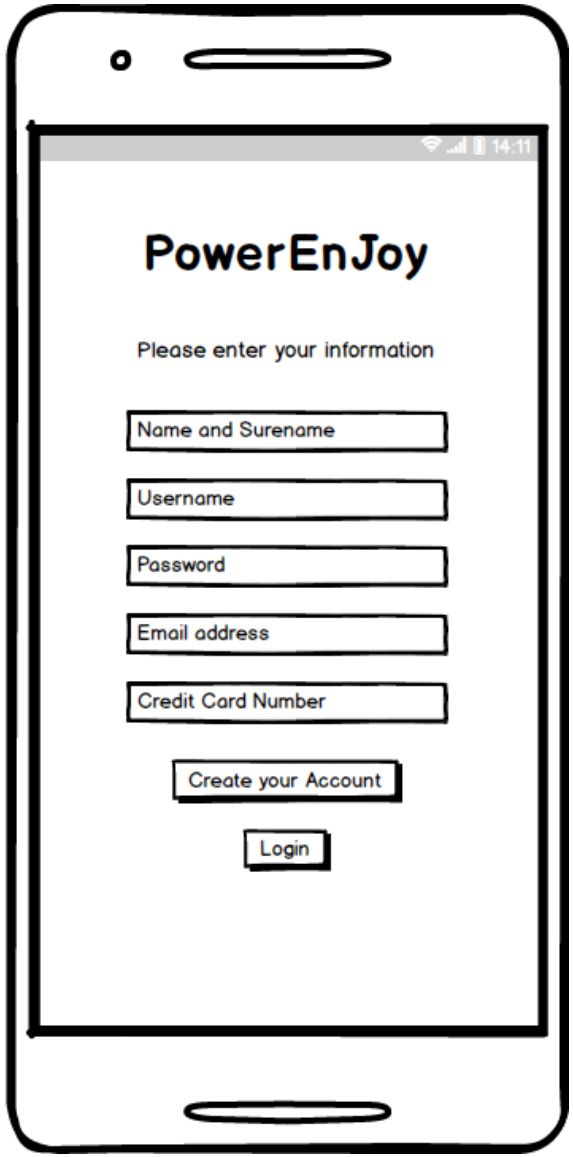


Algorithms

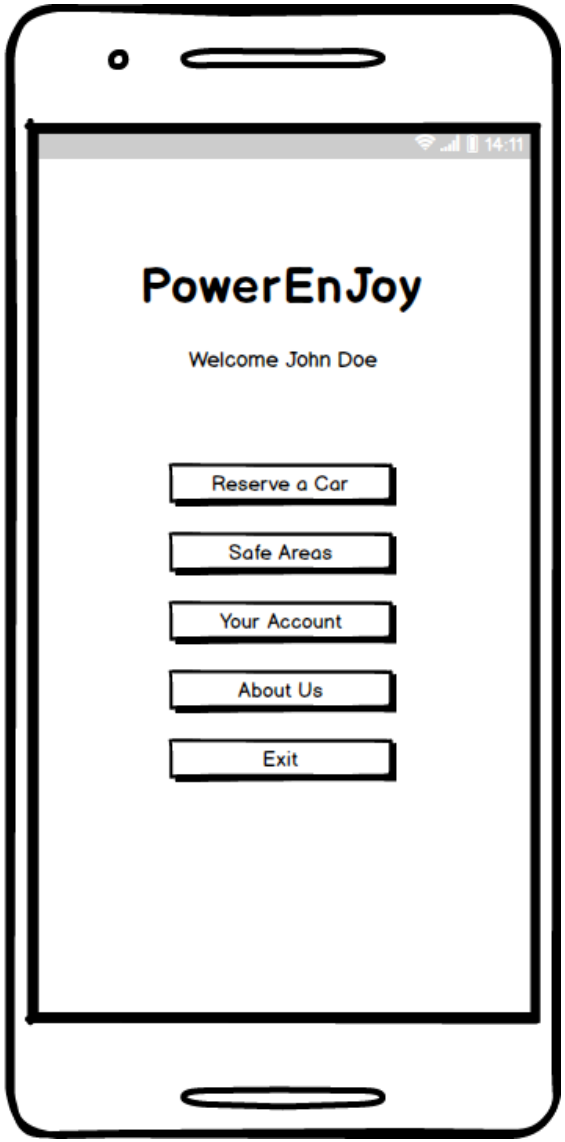
- “Save money” option need the best safe area in terms of availability closest to the user’s destination
- Nearest Neighbour Search algorithm (NNS) to determine the nearest safe area among a set of best areas
- Specifically K-NN

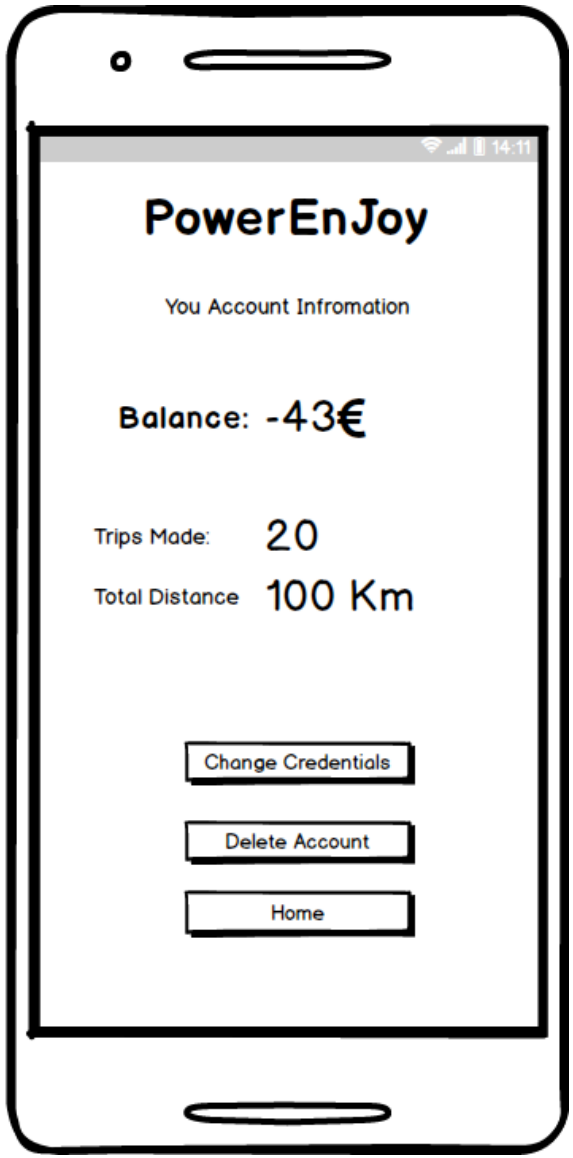
Mock-up: Login and Registration





Mock-up: Homepage and Account page





Mock-up: Map and Reservation page