PowerEnJoy

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Introduction

- Highlight most significant features
- Show points of strength in our project
- Emphasize the connection between the four project documents

Most important aspects

1. Difference between application and car systems
2. Architecture and microservices
3. Testing with microservices
4. No constraints on programming language

Analysis

- Definition of **Goals**, based on client requests.

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- Definition of **Requirements** to fulfill goals.
- Noticed something interesting
- Requirements highlighted **two loosely related components:**
  - User application
  - Cars

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- Common back end application for apps and cars, **but:**
- **Some services required only by one** of the two components (registration, payment, etc.)
- Some **common services** (Position, Safe Areas)
- Presence of **points of interaction** (Reservations, Rides, etc.)

Architecture

- Modularity

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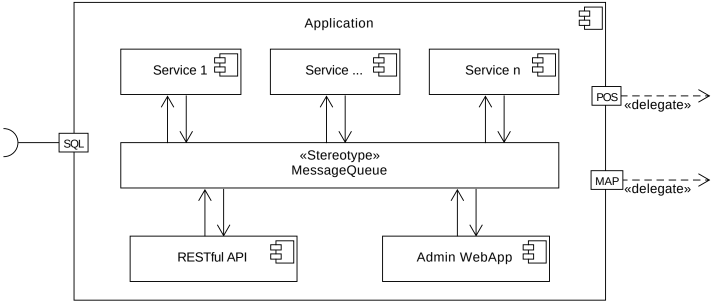
- Atomicity

Architecture

- Modularity
- Atomicity
- Interaction between components

The Microservices Idea



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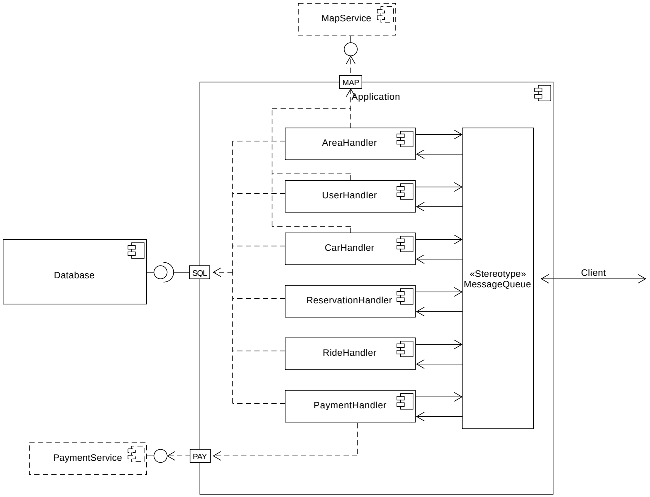
Bonus

- More flexibility for future/unforeseen requirements

Components Diagram



Testing

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  - components operate indipendently
  - flexible tests order

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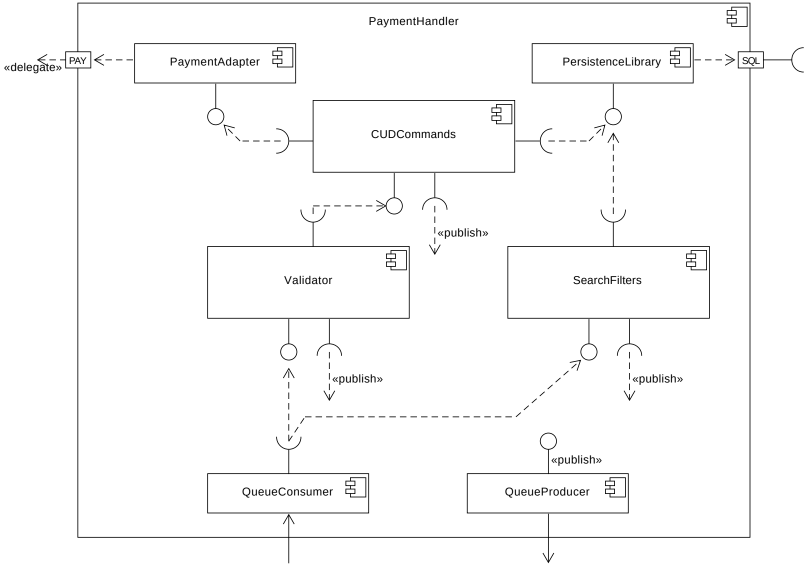
- **Microservices**
  - components operate indipendently
  - flexible tests order
- **Bottom-up strategy:**
  testing can start even if other components aren't completely developed
  1. unit testing of subcomponents
  2. integration testing between subcomponents (and external services)
  3. integration testing between components
  4. system testing


PaymentHandler
PaymentAdapter
PersistenceLibrary
«delegate»
PAY
SQL
CUDCommands
«publish»
Validator
SearchFilters
«publish»
«publish»
«publish»
QueueConsumer
QueueProducer

Programming language

- In these documents we omit specific details like
  - programming languages
  - software to use across the system

  to leave these choices to developers

Lines of Code

LoC = AVG * FPs

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$$\textbf{LoC} = \textbf{AVG} * \textbf{FPs}$$

- **AVG** language-dependent factor
- **FPs** total number of Function Points

JavaScript

- In order to calculate the *effort* (person-month) and the *duration* and make the **project plan** we need to choose a representative programming language.
- We choose **JavaScript** as an high level language example.