

# My Taxi Project Analysis

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# Description of the Problem

## **Improve Taxi Service of large cities:**

- Simplify the access by customers
- Grant Fairness in queue assignments

# Simplification of Access

## **Requirements introduced:**

- People will use the service through a Web Application or through the Mobile Application
- People will book taxis in advance without any phone call

# Queue Assignment Fairness

## Requirements introduced:

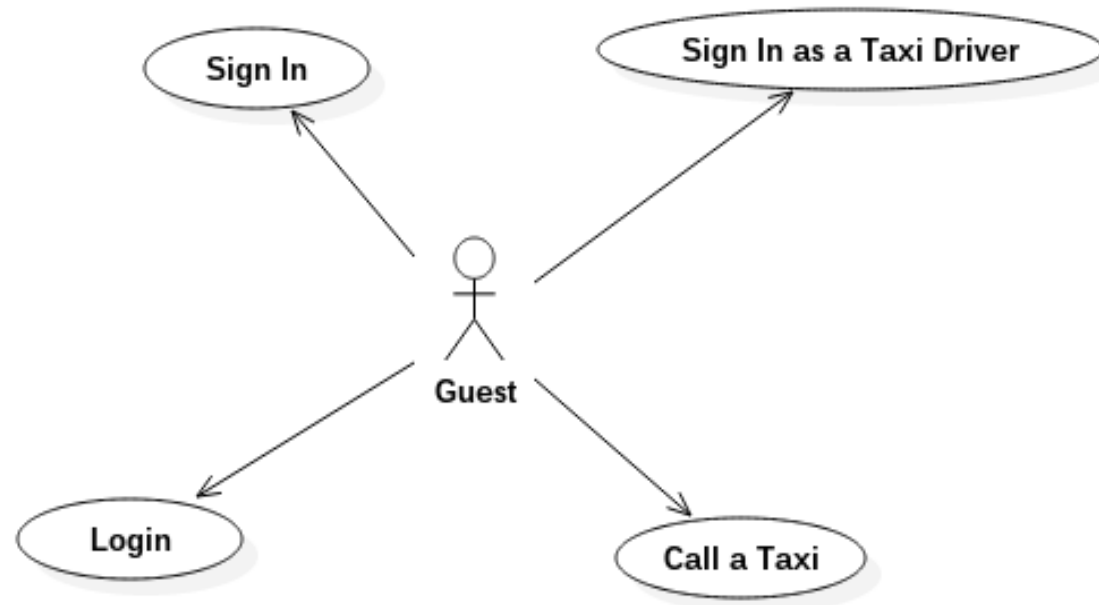
- Taxi Drivers will access the service through a mobile device
- Taxi Drivers will get into FIFO queues ordered on entrance Timestamp

# Actors

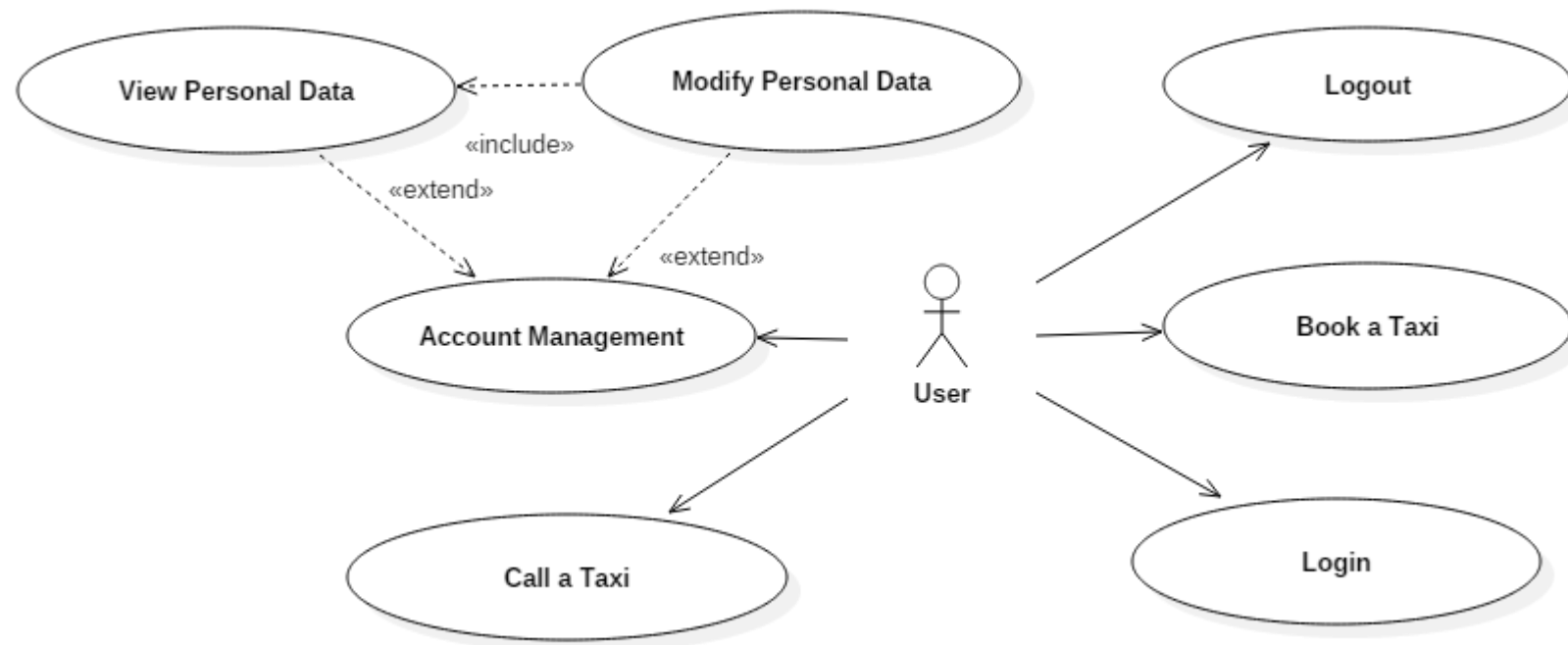
- Guest
- User
- Taxi Driver



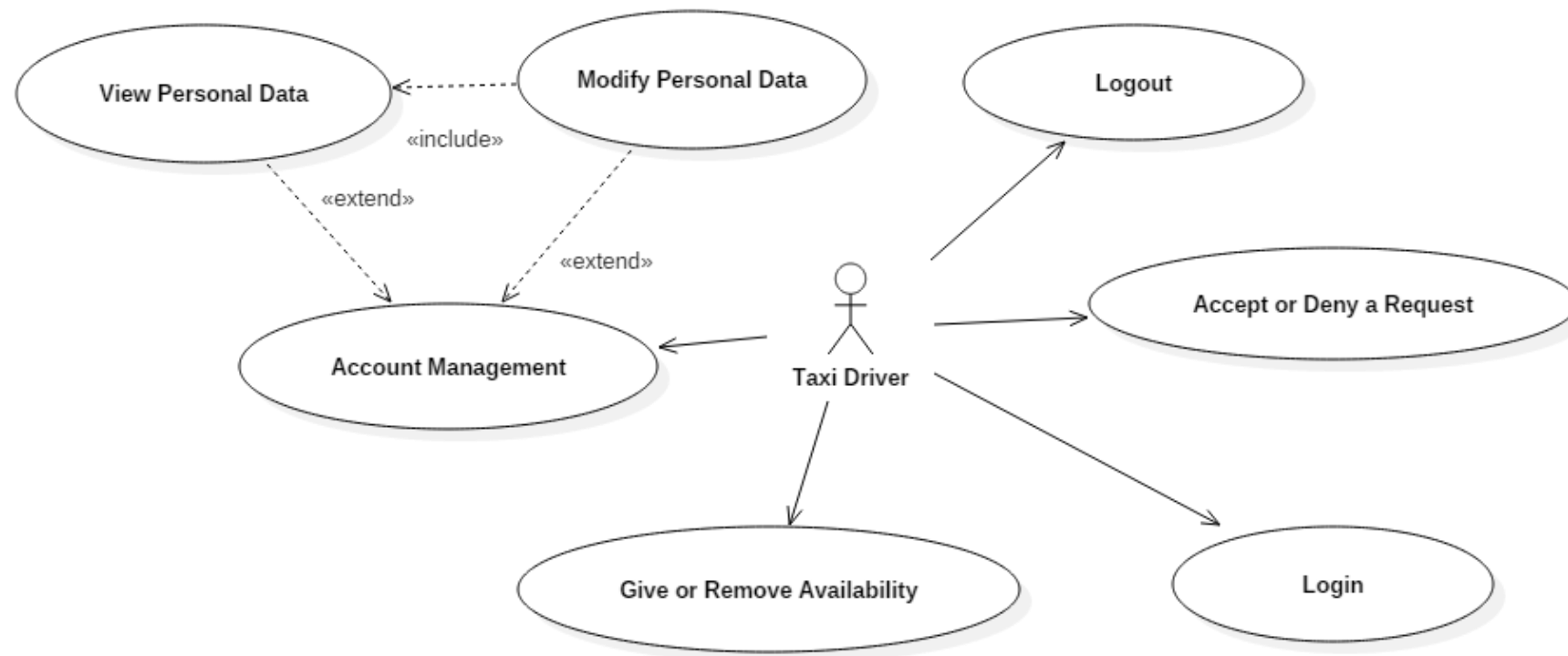
# Guest



# User



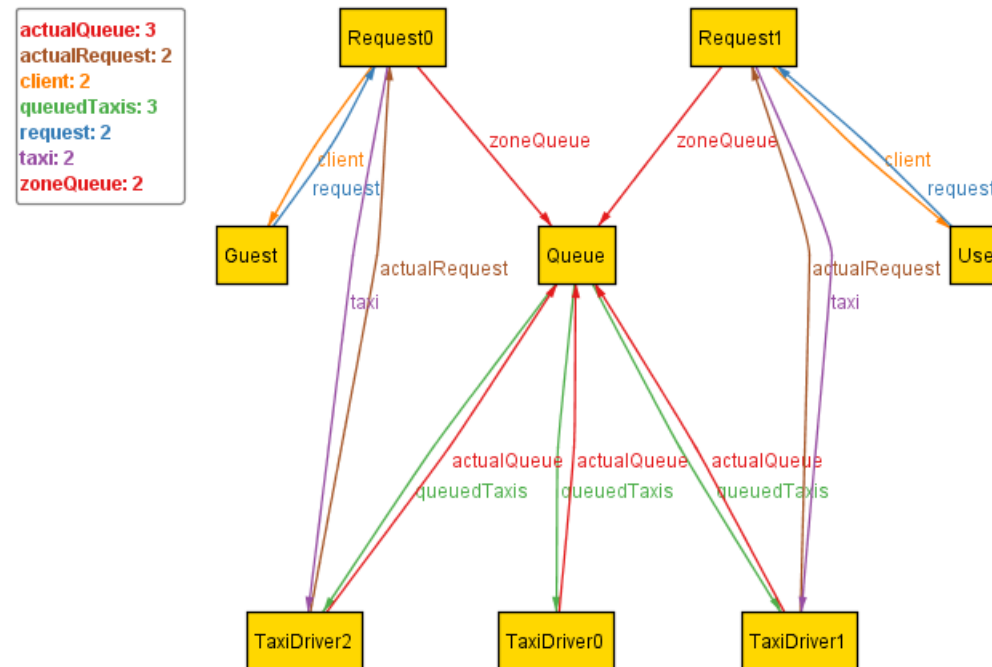
# Taxi Driver





# Model Verification

- Alloy Analysis



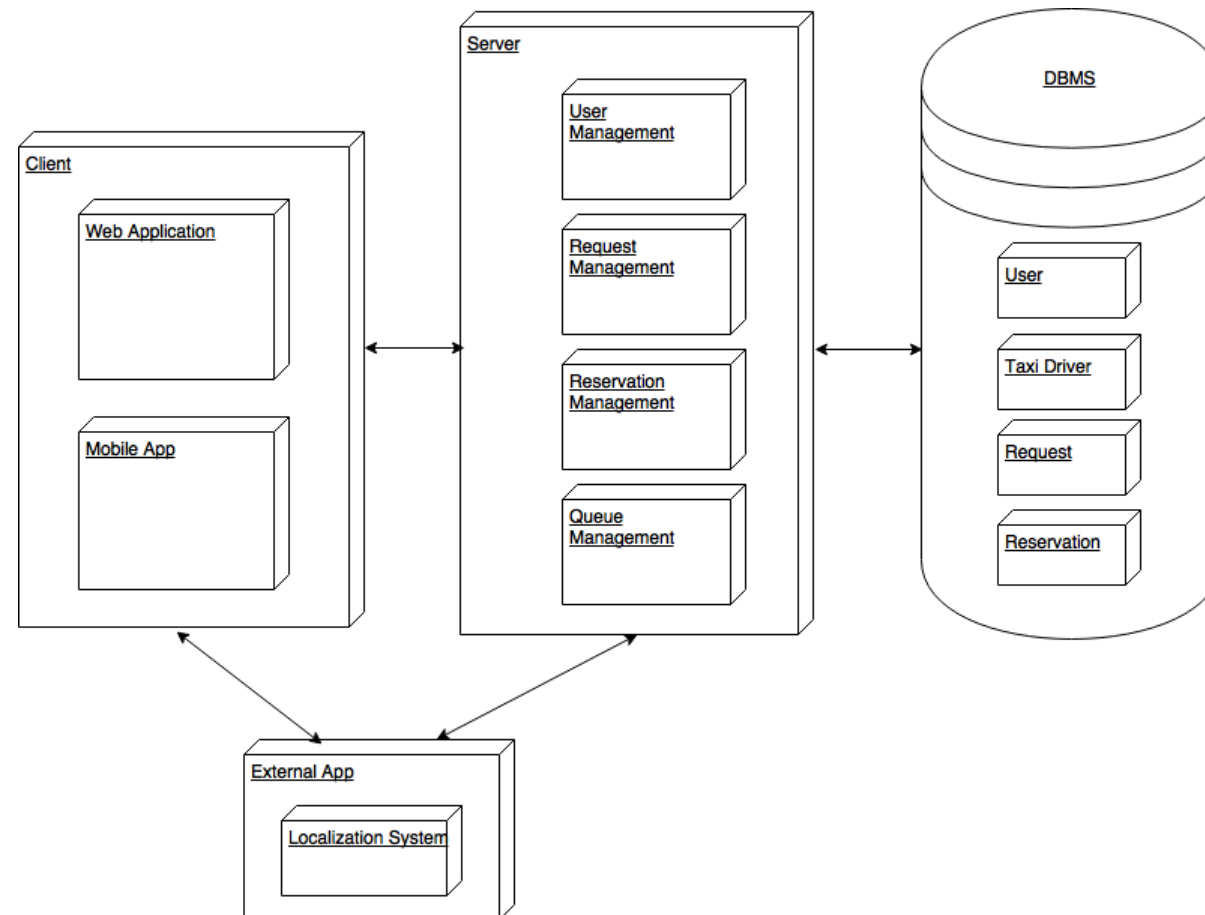
# Design & Architecture

## Three-tier architecture:

- Client-tier
- Business Logic-tier
- Entity-tier

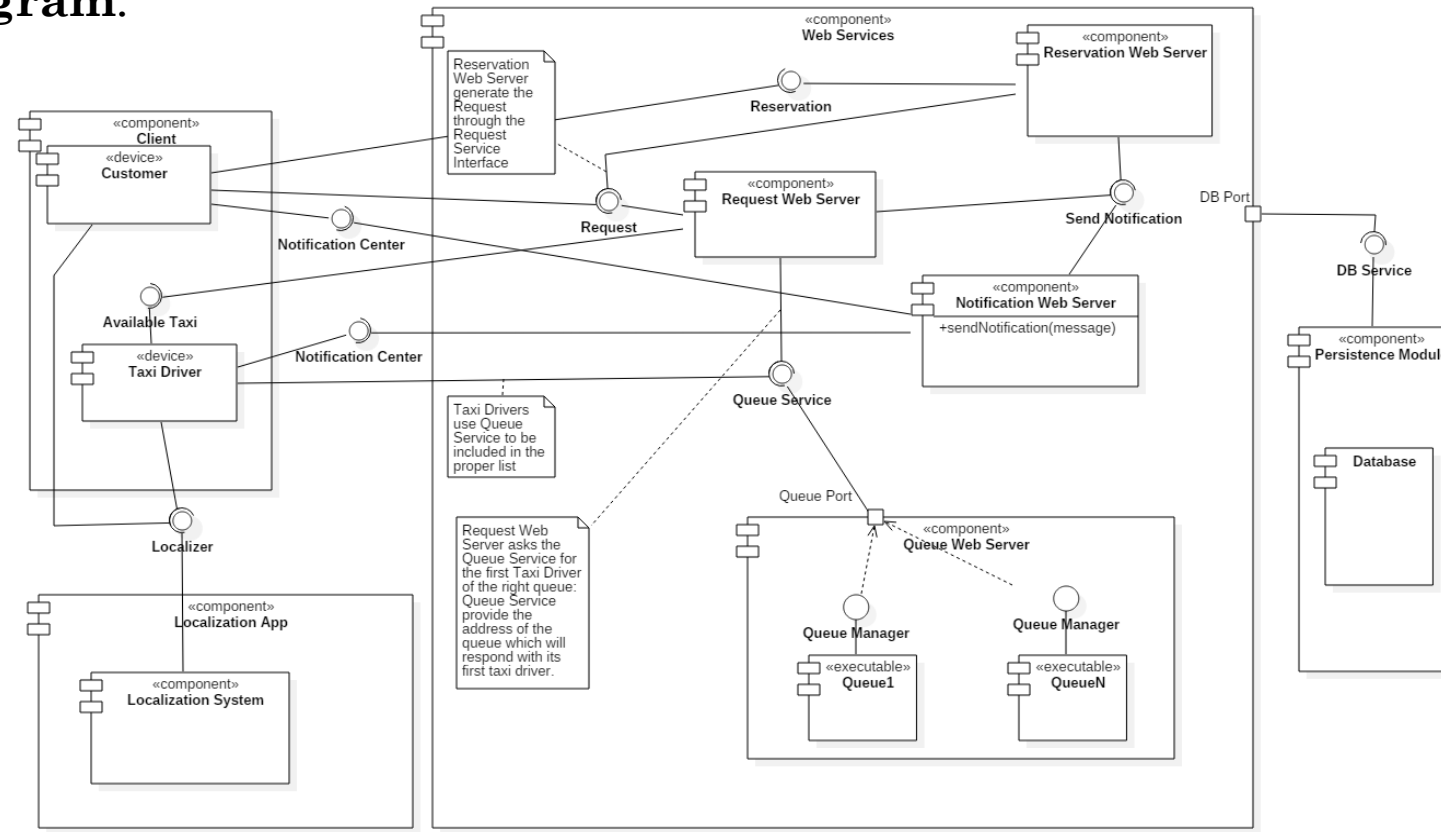
# Design & Architecture

## High-Level View



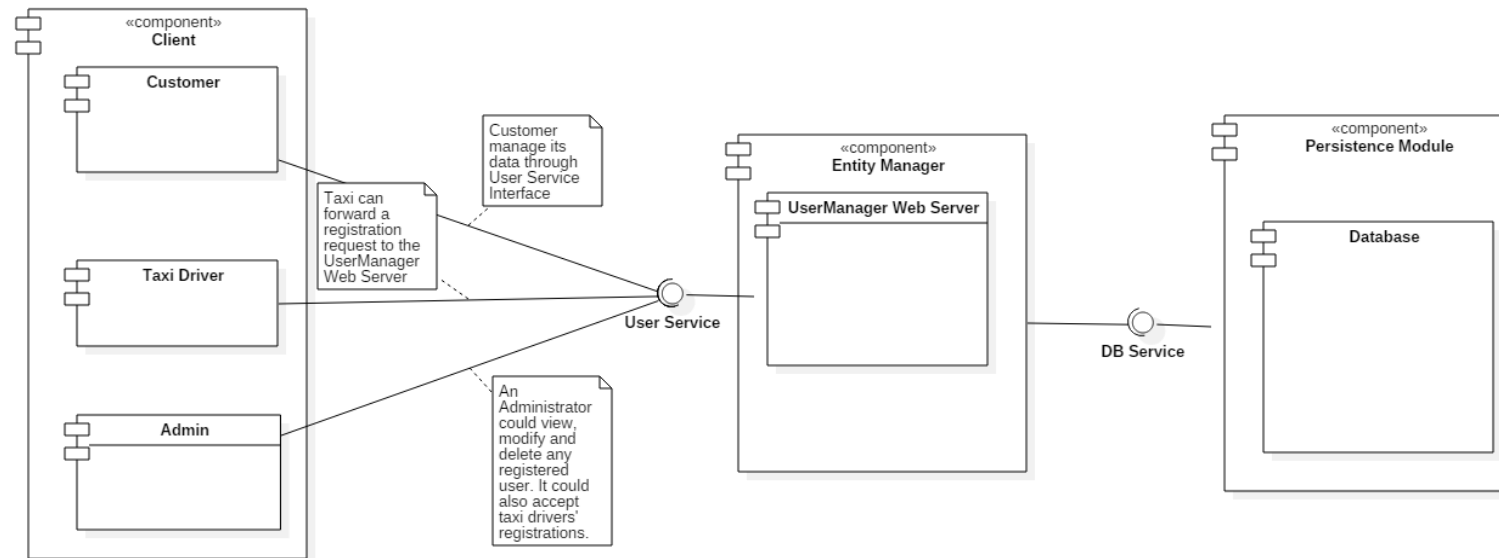
# Design & Architecture

## Component Diagram:



# Design & Architecture

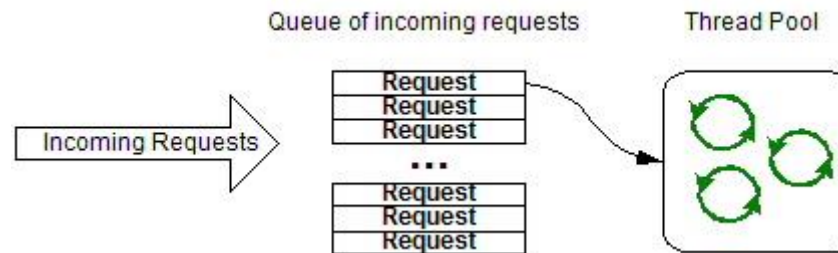
## Component Diagram: User Management



# Architecture Details

## Patterns:

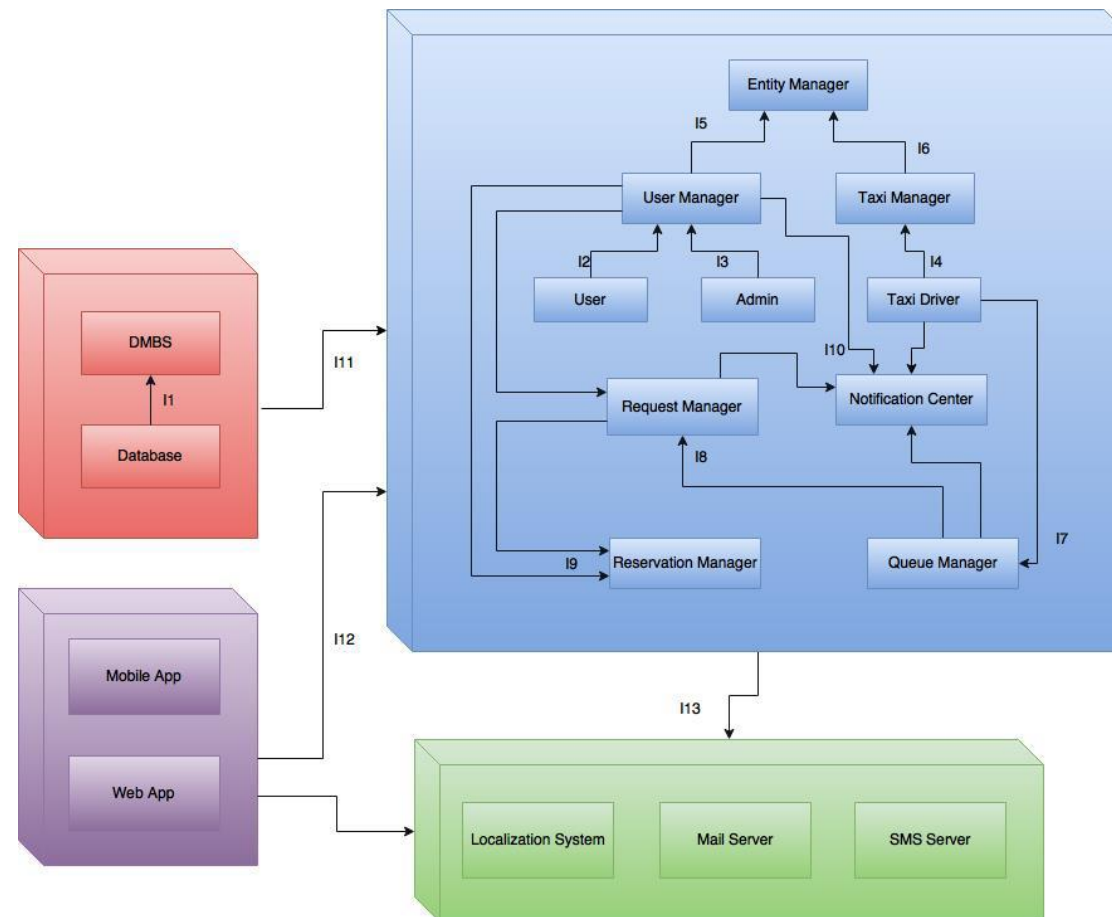
- Thread Pool
- Façade
- Observer
- Read-Write Lock



# Integration Test: Plan

- Created in order to have a reference on the verification of functionalities, performances, and reliability requirements of the project
- Individual software modules are combined and tested as a group
- Requires Unit Test
- Based on a bottom-up approach

# Integration Test: Sequence





# Project size and cost evaluation

- Estimate the project size through Function Point Analysis
- COCOMO II analysis to calculate Effort and Duration



# Function Points

- Identify all the features of the project, assign them a weight
- Resulting total function points: 134
- Source Lines of Code calculated multiplying function points by language-based converting factor (JEE)
- SLOC: 6164

# COCOMO II Analysis

- Approach based on effort and duration using parameters derived from previous experiences
- Effort (in Persons-Month): 11.52
- Expected Duration of the project: 8 months

# Project Timeline

