**Business Rules**

**Rooms**

* Rooms are one of the following 6 types: Studio, single, double, triple, quad, suite.
* Room types have the following base prices per day respectively: 60$, 75$, 90$, 105$, 120$, 150$.
* We have 20 rooms for each room types at the total of 120 rooms.
* Each room type has 5 smoking and 15 non-smoking rooms.
* Smoking allowed rooms have an additional fee of 100$.
* Each room type has 16 parking and 4 non-parking features.
* Parking adds 10$ fee.

**Reservations**

* Reservations can’t exceed a month long at once.
* Reservations need to be renewed by the new year.

**Features**

**Rooms and Reservations**

* Rooms can be reserved by giving check-in and check-out dates.
* Reservations can be cancelled.
* All rooms can be seen.
* Rooms can be added, updated, deleted.
* Rooms can be seen by following filters: By room types. By date. By room type and date.
* Errors are logged. All logs can be seen, or they can be seen by date.

**Exception handlings (Technical):**

* Validated that given check-in date is prior to check-out date.
* Validated that check-in and check-out dates are in the same year which leads to the business rule of reservations need to be renewed by the new year.
* Validated that Check-in, check-out dates are at least the current date.
* Validated that given room id has a correspondence in the database.
* Validated that reservation period is no longer than a month.
* Validated that the room is not already reserved in one of the days in the given.
* Validated that cancellation requests of reservations’ reservations really exist.
* Same date validations exist for the cancellation requests.

**Technology Stack**

**Database**

MongoDB and MongoDB Cluster

**Messaging**

RabbitMQ

**Caching**

Redis

**Security**

Spring Security

JWT (Json Web Token)

**Build and** **Deployment**

GitHub

Docker

Docker Hub

Kubernetes

Jenkins

Helm

**Proxy**

Nginx

**Services**

Netty

Spring Boot

Spring Cloud

Spring Data

Spring Data MongoDB Reactive

Spring Web Flux

WebSocket

JavaScript

Python

**Testing and Others**

JUNIT

Swagger

**Screen Shots of Main Components**

Jenkins for CI/CD

Username: admin Password: 123456789 <http://104.154.131.250:8080/>

A screenshot of a computer

Description automatically generated

Microservices in GitHub <https://github.com/EAProjects>

A screenshot of a cell phone

Description automatically generated

Images in Docker Hub [https://hub.docker.com/u/eaprojectsx](https://l.facebook.com/l.php?u=https%3A%2F%2Fhub.docker.com%2Fu%2Feaprojectsx%3Ffbclid%3DIwAR39iXJk9KGLVpIhQEfalIyBwmWMi2NYyf6LRhefLcB4fLbH_jbjxCN54R4&h=AT1GQbRIus-CGxTcZs2wuV2aHm6gpJ4ADQWIfwZLrQb_qmA8Gtaf_HUMLnPmoatFK8eV4QGUYHHrmCq_fHywRv6TYspUGL8JGZPXXYeMvRzA8Z7SrSBzI7ItaYojyqrJv8Eavg)

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Live Chat for customer service <http://104.197.113.97:30000/msg.html>

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Cluster with Kubernetes

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Virtual Machines with Kubernetes

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**Main Scenario**