Hotel Reservation System

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March 2023

the system wants to check:

- a simple class design

- concurrency and conflict control

1 Step1

Understand the Problem and Establish Design Scope
the operations we want to support:

- view / edit hotel

- view / edit room

- make room reservation

- edit / cancel room reservation

QPS is low enough

2 Step2

Propose High-Level Design
data model: relational database
high reading and low writing (small num of real reservation)
If we use different microservice to host different request types:

- hotel service

- room service

- reservation service

- payment service

database schema:

- hotel id

- room type id

- date

- total room count

- reserved room count

Concurrency issue:

- pessimistic locking

- optimistic locking

- database constraint

Other possible items to discuss:

- sharding

- caching (may expire)