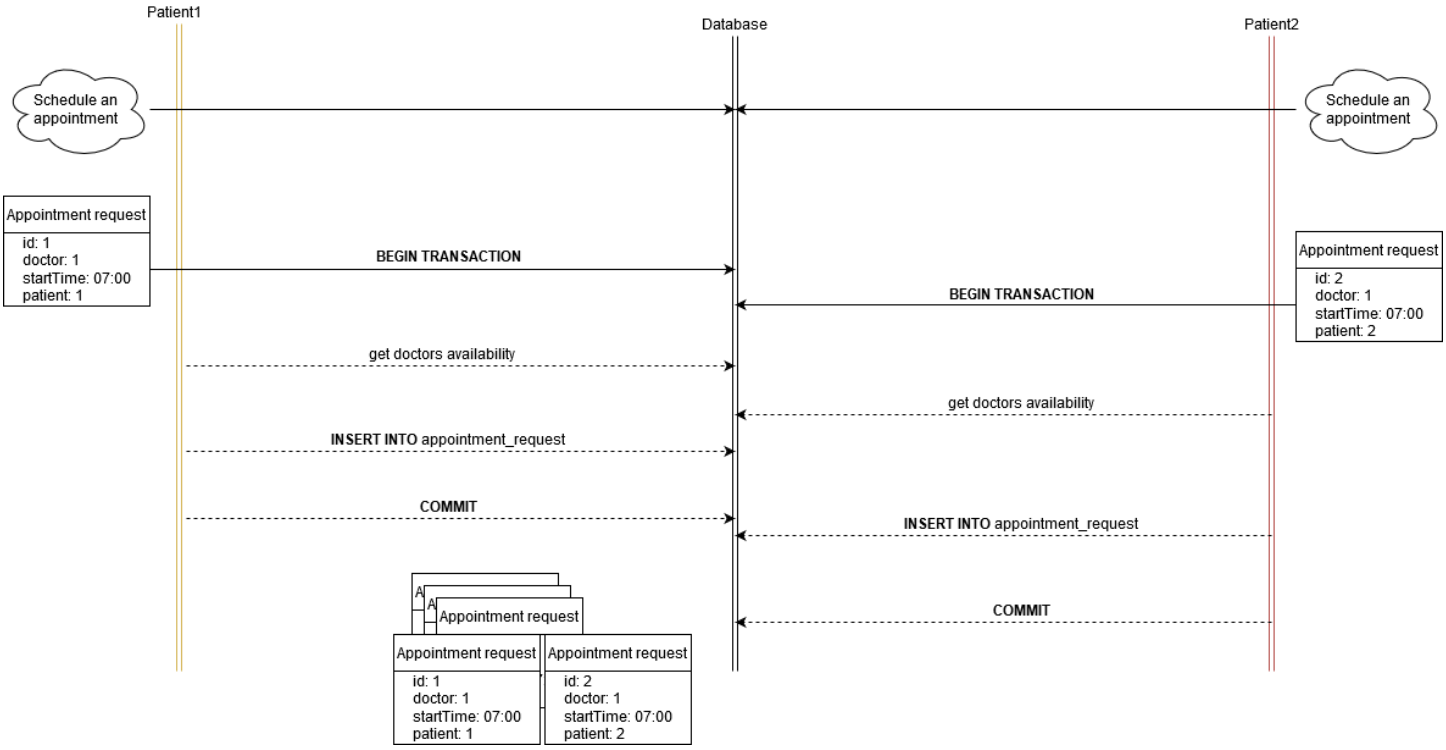
Scenario:

Two patients want to schedule an appointment with the same doctor. They request the doctors available times, both receiving the same data. One of the patients is quicker in selecting the time. While his request is being processed, the other patient selects the same timeslot.

Problem:

There cannot be two appointments requested with the same doctor, same time and different patients.



Solution:

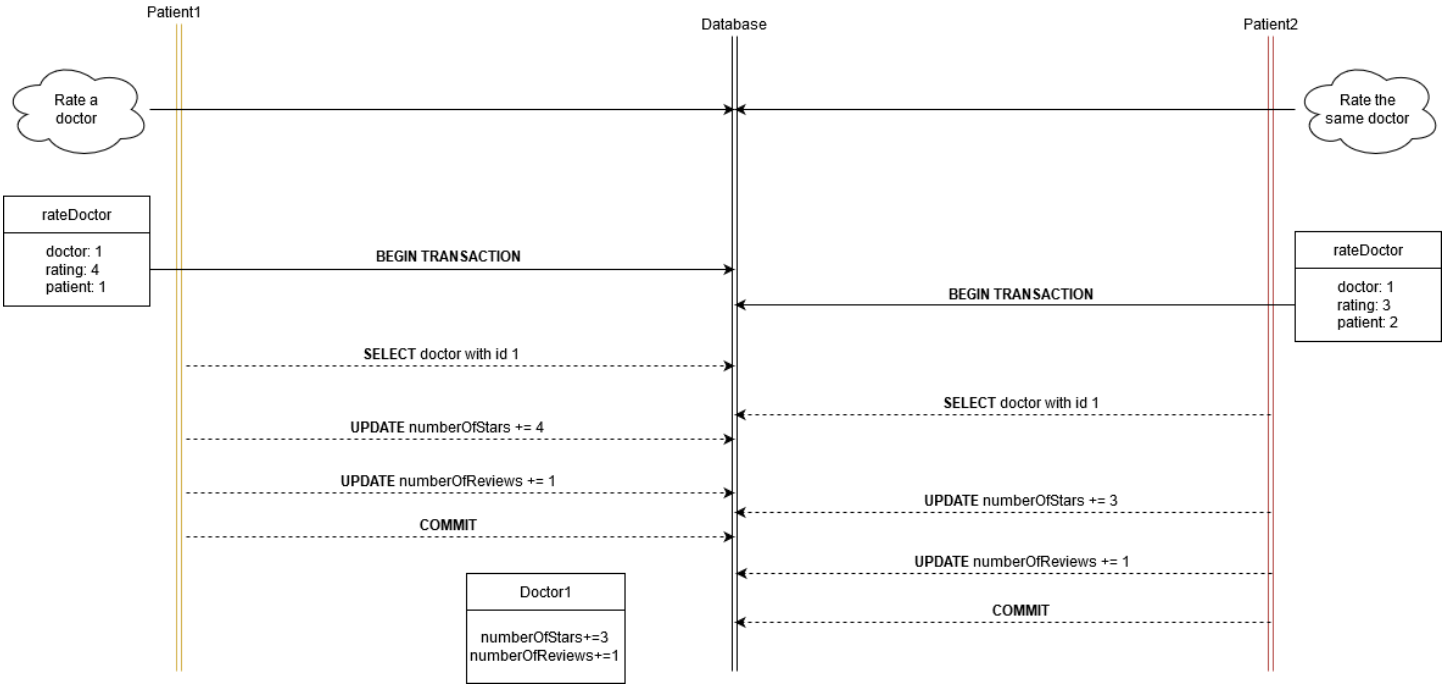
While the appointment request is being processed, the doctor is under a pessimistic lock. That way, his availability cannot be viewed or altered during the transaction by another method.

Scenario:

Patients creating multiple doctor or clinic rating requests. Ratings are calculated as numberOfStars/numberOfReviews, so every rating changes both of these variables.

Problem:

Multiple rating requests can result in false data if one request reads numbers while the other is in the process of writing them.



Solution:

Using an optimistic lock. Each transaction increments the version, so the second transaction will fail and rollback its changes and the patient will have to try again.