

Cisc 332 Project - Part 3

Adam Perron, Brandon Bloch, Shannon Klett

Sections

1. All Assumptions
2. ER Diagram
3. Relational Schema
4. State Machine Diagram
5. SQL Interactions in Each State + Output
6. Discussion
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Section 1: All Assumptions

Application Design

- There will be very few administrative users, and at least one will have direct access to the database. Therefore we do not need a front end feature for requesting, adding, or removing admin privileges. If there is a new admin user, they can be upgraded directly in the database.
- Suppliers should NOT be allowed to add reviews on their own properties.
- Suppliers should be allowed to make bookings on their own properties.
- Users can either search by all districts or one, all types or one, all features or one, maximum price or any combination of these.

Overall Database Design

- We chose to give lots of extra space for varchars.
 - We're assuming our database won't be big enough for this excess to matter.
 - Better safe than sorry!
- We're using tables for constant string values, such as booking status type, property type, faculty, and degree type.
 - This will help keep data consistent in our system, and allow us to easily add new types.
- NULL values are generally not allowed unless we have good reason. Columns containing strings will default to an empty string, which, unlike NULL, will not cause type errors when processing in frontend.
- Delete and cancel action actually remove the record from the database, rather than using a "deleted" column.

Bookings

- Bookings have their own id to make them easily searchable.

Rentals

- All properties must be in exactly one district. Districts do not overlap. If the property is on the border of districts, supplier must select one.
 - The same applies to property type and supplier; every property must have exactly one type and supplier.
- price_per_night is in whole Canadian dollars (no cent values are allowed), and represents the price for one day/night (ie noon day 1 to 11am day 2). Total price for a booking will be this value multiplied by the number of days.
- Features are listed as individual boolean columns (which are actually type tinyint), to make them easily searchable. Columns can be easily added and the default value is false.

Reviews

- A user can leave at most one comment/rating on a property, and the supplier can only reply once.
- When giving a review, users must give a rating, but the comment is optional.

Users

- Longest phone number should be 15 digits, plus 6 digits for extension , and extra space just in case.
- grad_year is the 4 digit number representing the year they graduated (ie 2016). If user has multiple degrees from Queen's we'll use the most recent year.
- Gender is a varchar field to allow for non-binary genders. Users can identify as they wish.