MyBNB Report

Description

The purpose of this project was to create an application similar to the popular website AirBNB. We gave users the ability to create listings for places they can rent to others, as well as the ability to search for their desired place to stay for in the location and price range they want, along with many other features.

Problems

Validation was a problem because we had to verify user input.

By creating a module to validate based on data type and custom functions, we don't need to make a call back to the database to see if it's valid every time.

How would we allow the deletions of users/listings/rentals while also maintaining integrity of the database?

By adding isActive fields to hosts/renters /listings we can simulate deletions while also having other users data intact and complete. This also allowed for the prevention of foreign key violations which pop when deleting from user/renter/host/listing.

ASSUMPTIONS

Operations:

1) When the user wants to delete their account, we assume that they are deleting the current account and the alternative (renter/host) if present.
2) We assumed the following in regards to data types,
   Every country's postal code is in the from a1a1a1, A credit card number is between 13-19 numbers, a CCV number is between 0-9999, longitude is between -180 and 180, latitude is between -90 and 90, Every user has to be older than 18, a SIN number had to be between 1000000000 and 9999999999, A listing may have between 1-25 bedrooms, A listing must have a price >= 0, Every rentals start date must be <= to its end date, A rental can only be cancelled by the host or the renter, Users only give ratings between 1 and 5.
3) A user can only create another listing if he isn't in violation of our commercial Host policy. Which is no more than 5 per city or 10% of the cities listings.
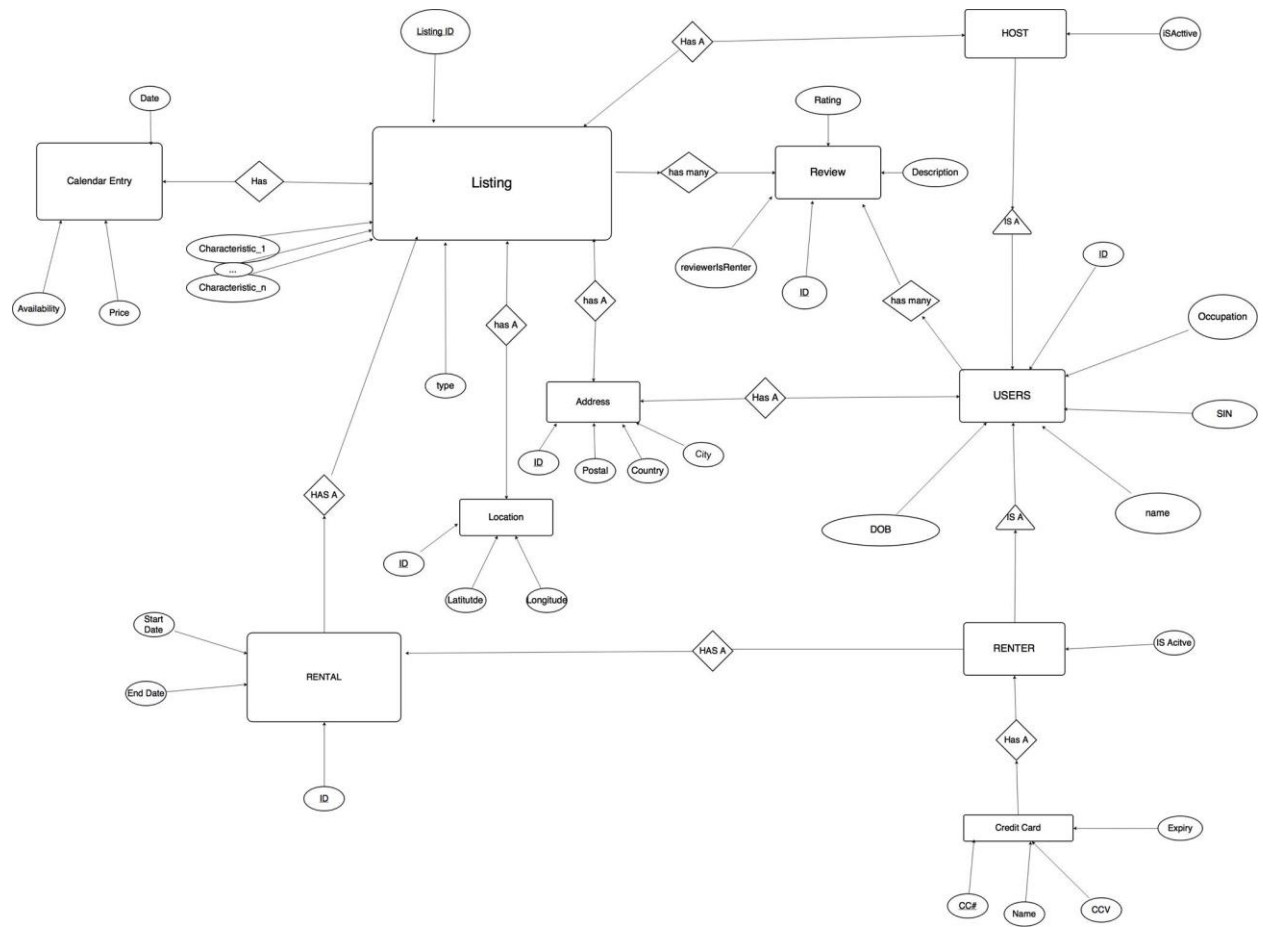
Queries:

1) The user always wants to sort by either distance or price (Ascending or Descending),

2) All filters are combinable with the exception of exact search

Reports:

For the second, third and fourth report return results influenced by active listings and not inactive ones.

ER DIAGRAM

RELATIONAL SCHEMA

address (address_id, pCode, country, city)

credit_card (card_number, name, CCV, expiry_date)

location (location_id, latitude, longitude)

user (user_id, address_id, occupation, name, DOB, SIN)

host (user_id, isActive)

renter(user_id, card_number, isActive)

listing(listing_id ,IsActive, user_id, location_id, address_id, type, num_bedrooms, price, amenity_1, ..., amenity_n)

calendar_entry (listing_id, isAvailable, price, date)

rental (rental_id, user_id, cancelled_By, cancelled_On, listing_id, start_date, end_date, price)

review (review_id, host_id, listing_id, renter_id, rating, type, description)