

Home Link Backend Design

1. A schema of your database (what data and fields will be needed and how it will be stored/structured in the database)
 - a. Landlord collection with a document for each landlord. Within each landlord's document there would be:
 - i. Landlord_id
 - ii. Full Name
 - iii. Email Address
 - iv. Phone Number
 - v. DOB (timestamp)
 - vi. Home Address
 - vii. A subcollection with a document for each of their properties
 1. Each unit document would have:
 - a. house_id
 - b. Address
 - c. Maximum occupancy
 - d. Total Rent
 - e. Current Tenant's rental agreement (Firebase Storage)
 - f. Current Tenants (array of tenant IDs)
 - b. Tenant collection with a document for each tenant. Within each document there would be:
 - i. tenant_id
 - ii. Full Name
 - iii. Email
 - iv. Phone Number
 - v. DOB (timestamp)
 - vi. Previous Home Address
 - vii. Any roommates ?
 - viii. Any pets ?
 - ix. Upload a proof of residency { lease contract, or electricity bill}
2. What database you are using (ex: MongoDB, MySQL, PostgreSQL)
 - a. Firebase Firestore
3. what backend technology you are using (ex: Node.js/Express)
 - a. Firebase Firestore, Authentication, and Storage
4. how will you ensure that your data is stored securely? how will you handle authentication and ensure that a user's personal data cannot be accessed by other unauthorized users?
 - a. Firebase will handle security.
5. how will you ensure that your server is scalable and your queries are efficient?
 - a. Landlords getting data on each of their units will be the biggest source of database reads for us. Because of this, we set up all of the unit data that landlords would need into documents within one subcollection for the landlord.

This will make it simple to get a lot of unit data at once. Furthermore, because we can just query everything within the subcollection to get a landlord's unit data, we can easily sort by any other field. If we had to search for all units that had a given landlord's ID, then if we wanted to also cross-reference that with another field, it would be computationally expensive. So, this is designed to be relatively performant with the way Firebase queries work.