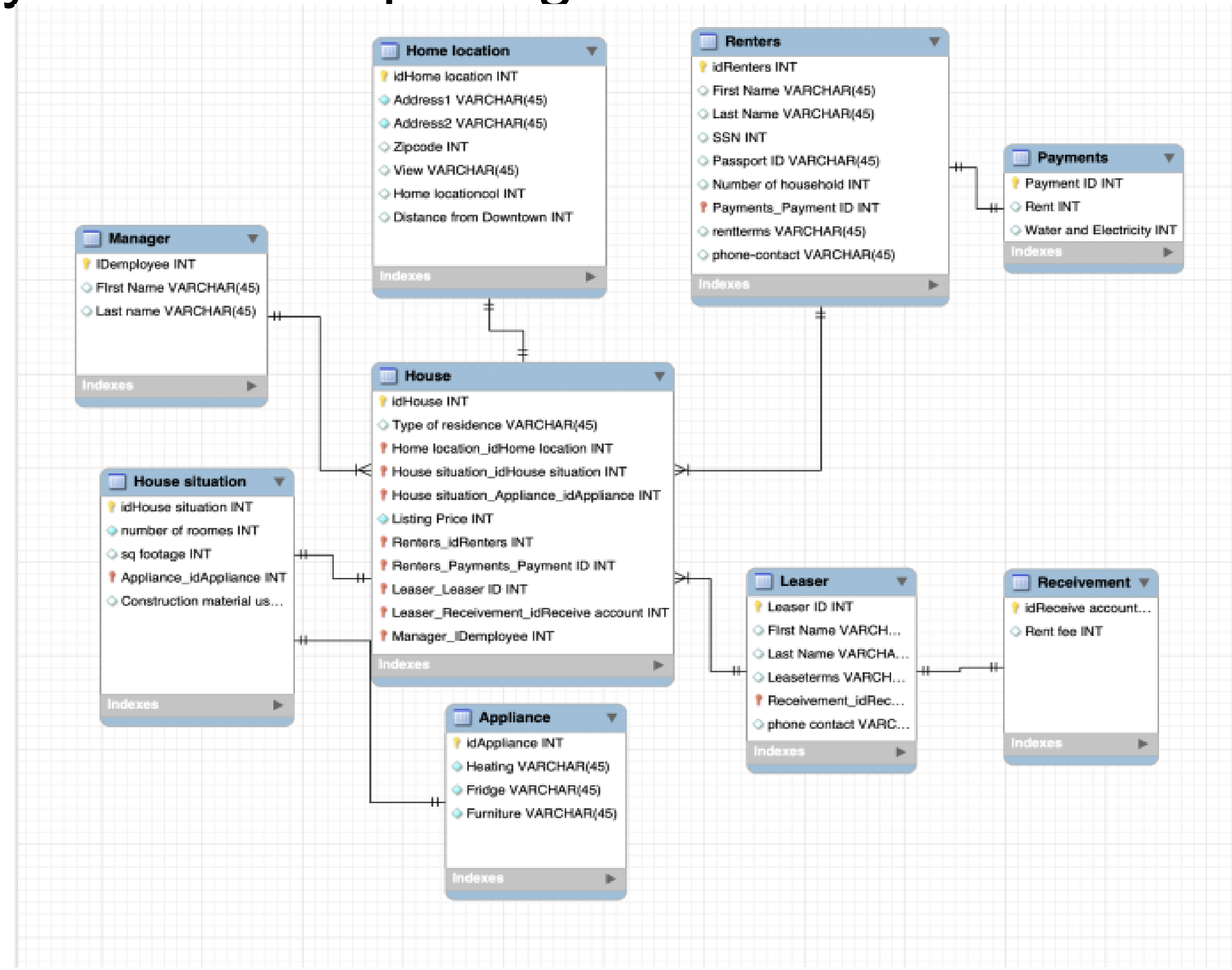
Entity Relationship Diagram



Home location

- idHome location INT
- Address1 VARCHAR(45)
- Address2 VARCHAR(45)
- Zipcode INT
- View VARCHAR(45)
- Home locationcol INT
- Distance from Downtown INT

Renters

- idRenters INT
- First Name VARCHAR(45)
- Last Name VARCHAR(45)
- SSN INT
- Passport ID VARCHAR(45)
- Number of household INT
- Payments_Payment ID INT
- rentterms VARCHAR(45)
- phone-contact VARCHAR(45)

Payments

- Payment ID INT
- Rent INT
- Water and Electricity INT

Manager

- IDemployee INT
- First Name VARCHAR(45)
- Last name VARCHAR(45)

House

- idHouse INT
- Type of residence VARCHAR(45)
- Home location_idHome location INT
- House situation_idHouse situation INT
- House situation_Appliance_idAppliance INT
- Listing Price INT
- Renters_idRenters INT
- Renters_Payments_Payment ID INT
- Leaser_Leaser ID INT
- Leaser_Receivement_idReceive account INT
- Manager_IDemployee INT

House situation

- idHouse situation INT
- number of roomes INT
- sq footage INT
- Appliance_idAppliance INT
- Construction material us…

Leaser

- Leaser ID INT
- First Name VARCH…
- Last Name VARCHA…
- Leaseterms VARCH…
- Receivement_idRec…
- phone contact VARC…

Receivement

- idReceive account…
- Rent fee INT

Appliance

- idAppliance INT
- Heating VARCHAR(45)
- Fridge VARCHAR(45)
- Furniture VARCHAR(45)

Tables/relationships/Cardinality/Datatypes

Entities are: house, house location,manager,house situation, appliance,renters,leaser,payments,recivements

When creating Cardinailty, most relationships are 1 to. I make the assumptions that renters and leasers can rent or lease more than one property,and managers can manage multiple properties, so there would be 1:m relationship. Managers can

For data types, most are INT or VARCHAR.Since for database, we store mostly numeric values or description attributes.

Design Considerations

The database is a relational database. OLTP is needed since it needs to capture transactions(who rents the room now, payments) in real time.When creating this model, I consider 3 parts: People’s information, House’s information,and a “main” table with a lot of foreign keys as a sum.The volume of data depends on the number of properties and people managed by this database.

The number of users will be large(we need faster processing speed) and monetary transaction and customer info are sensitive and happen in this database.So,we need a distributed databases to take advantage of its data recoverability,improved performance, and transparency.

Data security,privacy,and integrity

Data security is very important to us and requires us to “protect data from compromise by external attackers and malicious insiders.” Payment and SSN are very sensitive information, and they cannot be leaked. SO we need high level of data security.We need a great web firewall.

Data privacy is about how data is collected,shared and used.So we need a front-end applications to only allow customers manage their own account rather than entire database.Also,we will not have public api.Employees should sign an agreement for properly use database.

Data integrity is also important to us as the accuracy and consistency of data stored in our database are very important. If we make mistakes or typos on payment amount, customers will go mad. We also need to often backup our database