DevEstate

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Design Document Specifications:

- Project name.
- A list of applications you will implement.
- The components and actions that will be developed in each application.
- Explanation of how each component relates to the others.
- Database design. Diagram showing tables, fields, PKs, FKs, indexes, and relationships
between tables.
- Tentative site map for front-end diagram (See info and example here: https://www.outofsightdesigns.com/what-is-a-sitemap/)
    - Represent each page you envision for your site.
    - Show linkages conveying all possible pathways for a user traversing your site.
- A breakdown of the different tasks required to complete this project.

- Include assignments of each task to each group member.

- Clearly labeled section delineating APIs you will use.
- This document should be a PDF file. You will add it to your GitHub repo in the designated location (see below), and you must hand in a hard copy (see checkpoints deliverables)

- CReate, Update, Delete (CRUD)
- Implement Zillow API to provide accurate and meaningful information regarding home ownership
- Users will be able to keep track of Properties which they've liked
- SITEMAP
- Our Service will feature five main tables. They are as follows:
    - Property Table
    - Realtor Table
    - Property/Agent joined Table
    - Property/School joined table

1. **Property Table**

This table will store the main details about each property. It will have the following fields:

- PropertyID: INTEGER (Primary Key)
- StreetAddress: VARCHAR
- City: VARCHAR
- State: VARCHAR
- Zipcode: VARCHAR
- Country: VARCHAR
- Latitude: DECIMAL
- Longitude: DECIMAL
- LivingArea: INTEGER
- Bedrooms: INTEGER
- Bathrooms: INTEGER
- YearBuilt: INTEGER
- Price: DECIMAL
- DatePosted: TIMESTAMP
- DateSold: TIMESTAMP
- HomeType: VARCHAR
- PropertyTaxRate: DECIMAL
- TimeOnZillow: INTEGER
- HomeStatus: VARCHAR
- AnnualHomeownersInsurance: DECIMAL
- RentZestimate: DECIMAL
- BrokerageName: VARCHAR
- PageViewCount: INTEGER
- Description: TEXT

2. **PropertyFeatures Table**

Stores specific features of each property. For example, some fields could be:

- FeatureID: INTEGER (Primary Key)
- PropertyID: INTEGER (Foreign Key)
- Flooring: VARCHAR
- FoundationDetails: VARCHAR
- AccessibilityFeatures: VARCHAR
- GarageSpaces: INTEGER
- ParkingSpaces: INTEGER
- ViewType: VARCHAR
- WaterView: BOOLEAN
- Heating: VARCHAR
- Cooling: VARCHAR
- ConstructionMaterials: VARCHAR
- RoofType: VARCHAR
- LotSize: DECIMAL
- HOAFee: DECIMAL

3. **Agent Table**

Stores information about real estate agents. Some features will be:

- AgentID: INTEGER (Primary Key)
- DisplayName: VARCHAR
- ReviewCount: INTEGER
- RatingAverage: DECIMAL
- PhoneNumber: VARCHAR
- ImageURL: VARCHAR
- BadgeType: VARCHAR

4. **PropertyAgent Table**

This is a junction table to handle the many-to-many relationship between properties and agents.

Fields:

- PropertyAgentID: INTEGER (Primary Key)
- PropertyID: INTEGER (Foreign Key)
- AgentID: INTEGER (Foreign Key)

5. **School Table**

Stores information about schools in the vicinity of the property.

Fields:

- SchoolID: INTEGER (Primary Key)
- Name: VARCHAR
- Rating: INTEGER
- StudentsPerTeacher: INTEGER
- Size: INTEGER
- Level: VARCHAR
- Grades: VARCHAR
- Type: VARCHAR
- Distance: DECIMAL

6. **PropertySchool Table**

This is a junction table for the many-to-many relationship between properties and schools.

Fields:

- PropertySchoolID: INTEGER (Primary Key)
- PropertyID: INTEGER (Foreign Key)
- SchoolID: INTEGER (Foreign Key)

7**. PriceHistory Table**

Stores historical pricing information for each property.

Fields:

- PriceHistoryID: INTEGER (Primary Key)
- PropertyID: INTEGER (Foreign Key)
- Date: TIMESTAMP
- Event: VARCHAR
- Price: DECIMAL
- PricePerSquareFoot: DECIMAL

Relationships

Each Property has many PropertyFeatures.

- Real estate properties can have a wide array of features, such as different types of flooring (e.g., hardwood, tile), various amenities (e.g., pool, fireplace), and diverse utility setups (e.g., types of heating and cooling systems). These features are too numerous and varied to be efficiently stored in a single column of a property table.

Each Property can be associated with multiple Agents and vice versa.

Each Property can be associated with multiple Schools and vice versa.

Each Property has many entries in the PriceHistory table.

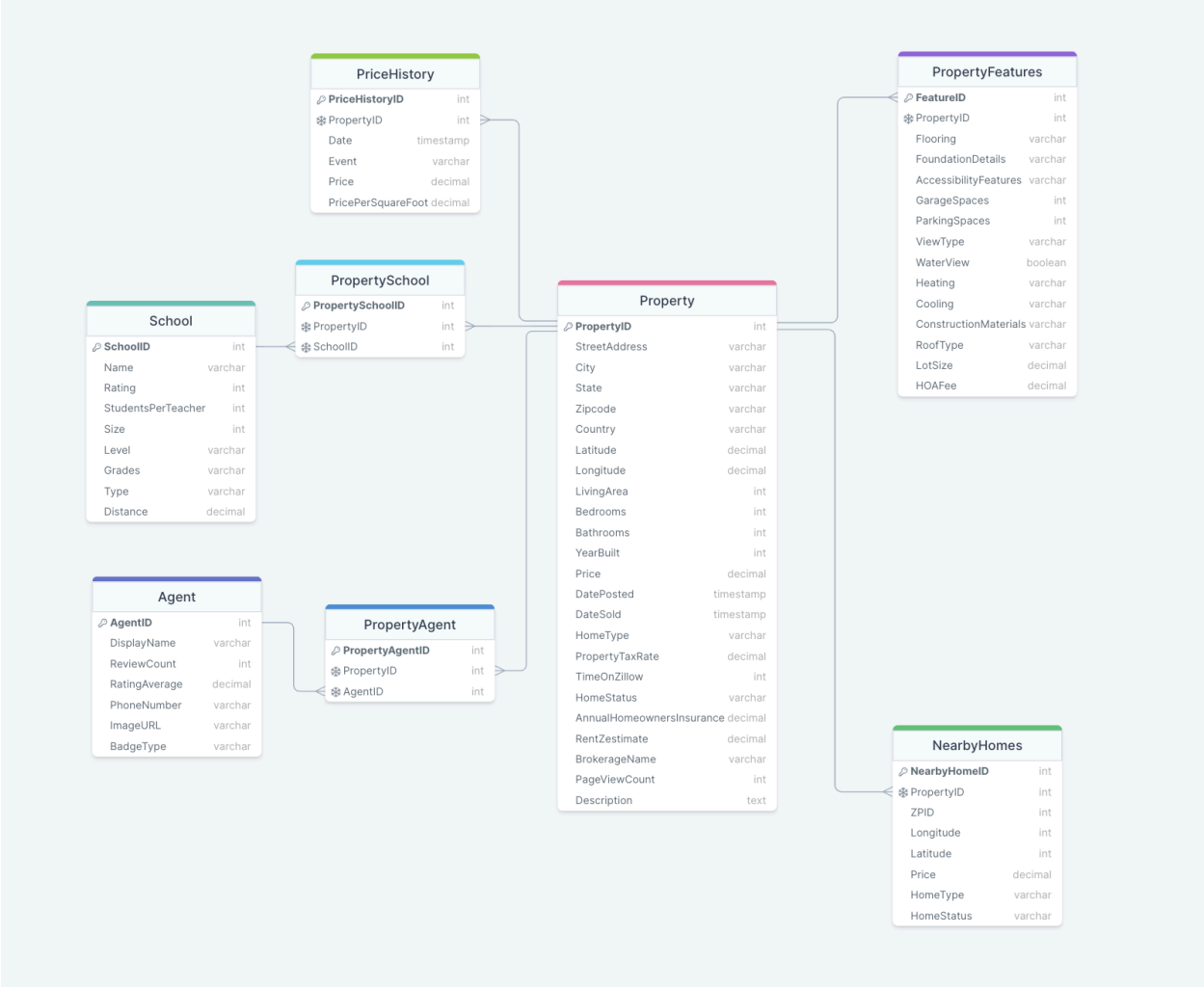
Each Property has many NearbyHomes.

Primary keys (PK) are unique identifiers for each table.

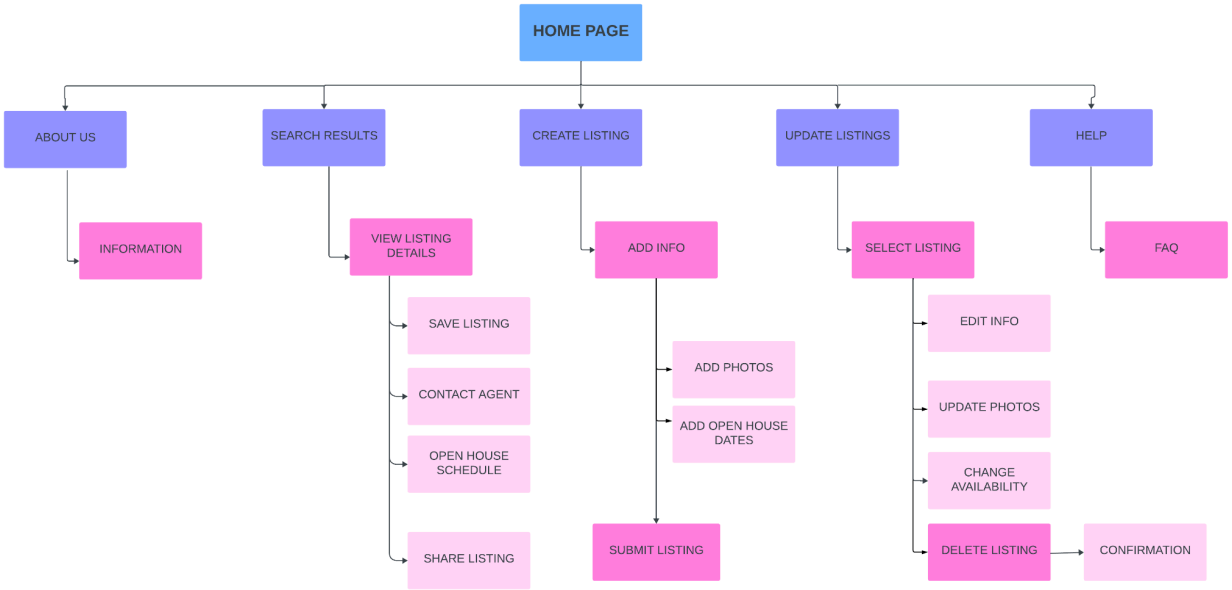
Foreign keys (FK) establish relationships between tables.

Junction tables are used to handle many-to-many relationships.

SQL ER Diagram


PriceHistory
PriceHistoryID int
PropertyID int
Date timestamp
Event varchar
Price decimal
PricePerSquareFoot decimal
PropertyFeatures
FeatureID int
PropertyID int
Flooring varchar
FoundationDetails varchar
AccessibilityFeatures varchar
GarageSpaces int
ParkingSpaces int
ViewType varchar
WaterView boolean
Heating varchar
Cooling varchar
ConstructionMaterials varchar
RoofType varchar
LotSize decimal
HOAFee decimal
PropertySchool
PropertySchoolID int
PropertyID int
SchoolID int
School
SchoolID int
Name varchar
Rating int
StudentsPerTeacher int
Size int
Level varchar
Grades varchar
Type varchar
Distance decimal
Property
PropertyID int
StreetAddress varchar
City varchar
State varchar
Zipcode varchar
Country varchar
Latitude decimal
Longitude decimal
LivingArea int
Bedrooms int
Bathrooms int
YearBuilt int
Price decimal
DatePosted timestamp
DateSold timestamp
HomeType varchar
PropertyTaxRate decimal
TimeOnZillow int
HomeStatus varchar
AnnualHomeownersInsurance decimal
RentZestimate decimal
BrokerageName varchar
PageViewCount int
Description text
Agent
AgentID int
DisplayName varchar
ReviewCount int
RatingAverage decimal
PhoneNumber varchar
ImageURL varchar
BadgeType varchar
PropertyAgent
PropertyAgentID int
PropertyID int
AgentID int
NearbyHomes
NearbyHomeID int
PropertyID int
ZPID int
Longitude int
Latitude int
Price decimal
HomeType varchar
HomeStatus varchar

SITEMAP


HOME PAGE
ABOUT US
SEARCH RESULTS
CREATE LISTING
UPDATE LISTINGS
HELP
INFORMATION
VIEW LISTING DETAILS
ADD INFO
SELECT LISTING
FAQ
SAVE LISTING
CONTACT AGENT
OPEN HOUSE SCHEDULE
SHARE LISTING
ADD PHOTOS
ADD OPEN HOUSE DATES
SUBMIT LISTING
EDIT INFO
UPDATE PHOTOS
CHANGE AVAILABILITY
DELETE LISTING
CONFIRMATION