Bilkent University

CS353 – Database Systems Term Project

Project Proposal Documentation

Online Real Estate System

Website:egekaraarslan.github.io/CS353-Gr15/

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1. Problem Description

Online Real Estate System is an application that provides services for renting, selling and buying real estates. The system stores the desired information and details about the real estate properties in a database system. It also stores information about the people involved in the process of buying, renting and selling of real estates. The information about the real estates that will be available are the necessary features that are considered in this process such as address, price, size etc. Further information about the neighborhood of the estate will be stored as well so that the users can be informed on information such as the crime rate and number of schools in the area that are essential for choosing a place to live. The users can also reach further and more detailed information about the neighborhood from the discussion forums that are available in which users can ask questions, give answers, make comments and rate the response. The users can also follow neighborhoods to be informed when a new property is available in that area. The information of the users will also be stored such as their name, contact information, their roles in the system. The users can be agents that will be the middleman in this process, the owners that want to sell or rent their property and the customers that want a property. The agents will receive requests from the owners so that they can start the transaction process. The owners will provide the detailed information about the properties. The agents and the owners will have a rating based on the past property that they dealt with given by the customers that interacted with them. There will be also technical information regarding the agents such as their company and commision rates. All of the users will be able to search real estate properties and find the necessary information about them.

The system will have a web-based interface that the users which are the property owners, customers and agents can login to utilise the system for real estate transactions.

2. Requirements and Limitations

2.1. Functional Requirements

- A property owner can put his property on the system for sale or renting.
- Owner can provide the information about his/her property such as price, address etc.
- Owner can determine a length for the renting.
- Owner can send a message to the agents requesting that they sell or rent his house.
- Agents can receive the owners' sell requests through messages
- Agents can receive and send messages to the customers that are interested in a property.
- Agents can give their company and commission information.
- Agents can start the selling or renting transaction of a property after they receive the request from an owner.
- Customers can save the homes they are interested in for later viewing
- Customers can rate the owners and agents after their interaction
- Customers can send messages to the agents if they are interested in a property guided by that agent.
- Customers can start discussions on the site by asking a question about a certain neighborhood.

- Customers can make comments and answer questions on the discussion board.
- Customers can like or dislike questions and comments in the discussion board.
- Users can provide personal information such as their names and contact details.
- Users can search for real estate properties that are published on the site according to parameters such as price, neighborhood, size etc.
- Users can follow neighborhoods to see if a new property is available for rent or sale in that neighborhood.
- Users can send emails to and receive emails from other users.

2.2. Non-Functional Requirements

- The system will have a user-friendly web interface.
- The system will be scalable to support many users at the same time.
- The system will have a low response time.

2.3. Pseudo-Requirements

- The system must have a web interface in the front end, and Java implementation in the back end.
- The system must not be open source.

2.4. Limitations

- The published properties will be on the site for 6 months. After that time it will be removed.
- An owner or agent or agency companies can only manage a certain quota of properties at the same time.
- There will be reasonable limit to the commissions of the real estate agents.
- Each property will be managed by exactly one owner and agent.
- The owners will have to at least fill some essentials information about their property so that it can be available for selling or renting. These information are the address, type, price, size and neighborhood of the property.

3. Conceptual Design

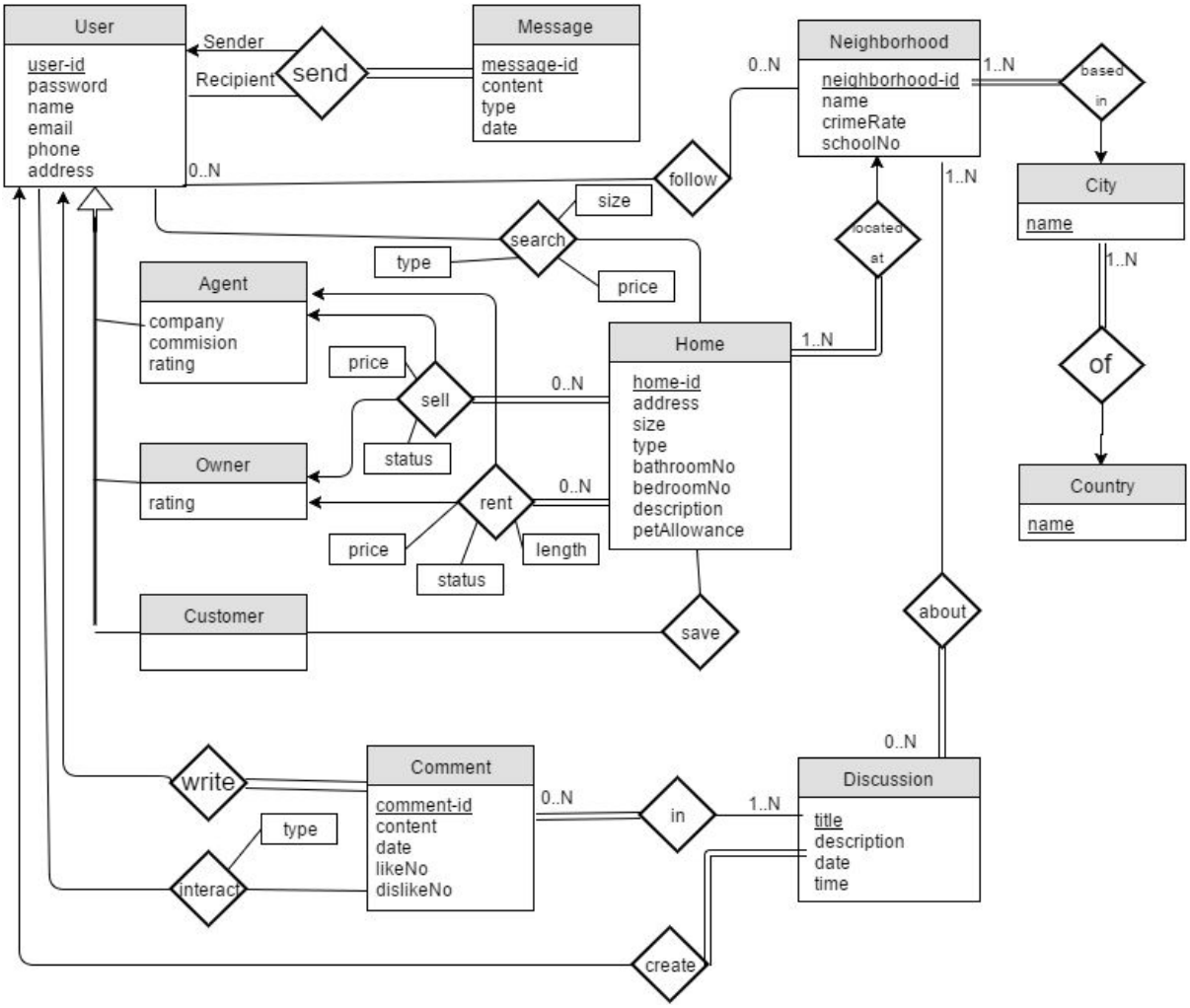

Figure 1: ER model of Online Real Estate System

Additional Notes:

1. Users

There are 3 types of people who are using this system. These people consist of agents, owners and customers. All users will have a specific user ID, password, name, email, phone number and address information.

1.1. Customers

Customers consist of people who are searching for a house to rent or buy using the system. Customers will have no other extra information and will be a regular user.

1.2. Agents

Agents are real estate agents that are using this system. They have company name, commission amount and rating as an extra to a user. Rating is given by earlier customers and owners.

1.3. Owners

Owners want to rent or sell their houses by the help of an agent using this system. They have all the information of a user. Owners have a house list that are to be rented and sold. The owners determine the price and status (on sale, not sold or on wait) of their house.

2. Home

The houses to be rented or sold by the owners have the following information; a unique home-id, address, size in m2, type of the house (penthouse, studio, etc.), number of bedrooms, number of bathrooms, a description of the house, pet allowance and map location.

3. Message

Messages have a unique message id, content, type and a date. Message types will be a regular message, a sell request from an owner to an agent or a customer's request to an agent to view the house that is being sold or rented. A user can be either sender or receiver of a message.

4. Neighborhood

Neighbourhood consists of a unique neighbourhood id, name, crime rate and a school list for the schools nearby. Each neighbourhood will belong to a city and a country which will both have a name only as their information.

5. Discussion

All users will be able to discuss about a neighbourhood. Discussion will have a unique title, description, date and time to be stored and will have comments in it.

6. Comments

Comments can be written by all users. Comments have a unique id, content, date, number of likes and dislikes to be stored. The users will be able to interact with comments. Interaction will have two types which are like and dislike. Additionally, a user can write many comments on a discussion and can create a discussion.