

Project 3: Apartment Maintenance Database System

Relevant Verbs and Nouns:

As a building manager, the task of assisting rental maintenance needs effectively can be quite demanding. With **handling** of **requests** from renters, **checking** **availability** with **contractors**, and **keeping track** of **repair progress**, there is a need to have a system made to manage the processes of maintaining **apartment units**. This system should be made to **capture** and **organize** information related to maintenance requests, including the apartment number, **description of the issue**, **priority level**, **date and time** of the request, and **status** of the maintenance work. It should also include information about the tenant who submitted the request, such as their **name** and **contact information**. Furthermore, the system should keep up with **maintenance staff**, including tracking their availability, cost and completion status.

User

- name: full name
- user_id: number
- apt_number: number
- email: number

Maintenance

- request_id: number
- timestamp
- priority[Low, Medium, High]
- status[Pending, In-Progress, Completed]
- details: text

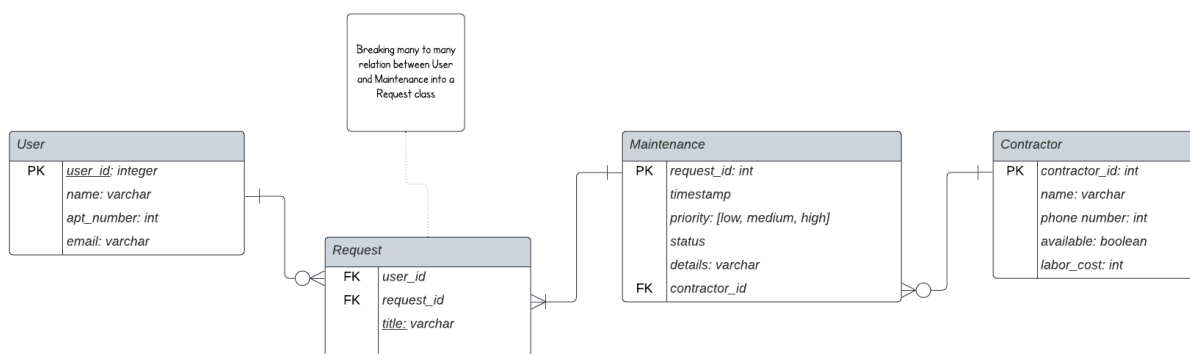
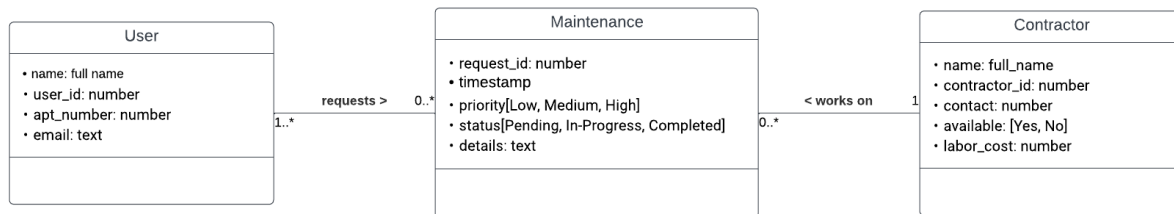
Contractor

- name: text
- contractor_id: number
- phone: number
- availability: [Yes, No]
- labor_cost: number

Rules:

- ❖ A user can place multiple requests
- ❖ Each request must have a user
- ❖ A maintenance project have at most 1 contractor
- ❖ Maintenance requests can have no contractor
- ❖ A contractor can work on multiple maintenance projects

UML & ERD



Redis Implementation:

The requests will be store in a key-value redis table

Data structure: Hash to manage Requests data

The request id and the request title with the user id being the value associated with the request. The hash is the adequate data structure to be used because it will pair each request id to its title

It would be as: "request:request_id" -> title

Alternative implementation:

Data structure: Sorted set to manage Users data

The sorted set is the adequate data structure to be store the user apartment number because each user_id is unique

It would be as follows: "user:user_id" -> user_name, apt_number, email