Olive Tree Homes

We are an apartment complex called Olive Tree Homes, a beautiful community with studio, 1 and 2- and 3-Bedroom apartments homes. Filled with amazing amenities like pool, gym, dog park and many more, we make sure our residents have the best time with their loved ones. Being in the city of Dallas which is growing rapidly as one of the major tech hubs in the country, every year numerous people move and get settled here. As a result, we are facing overwhelming demand to lease our apartments, and our traditional file system is unable to handle it. More demands is not just limited to leasing but also to many maintenance requests that we receive on a regular basis.
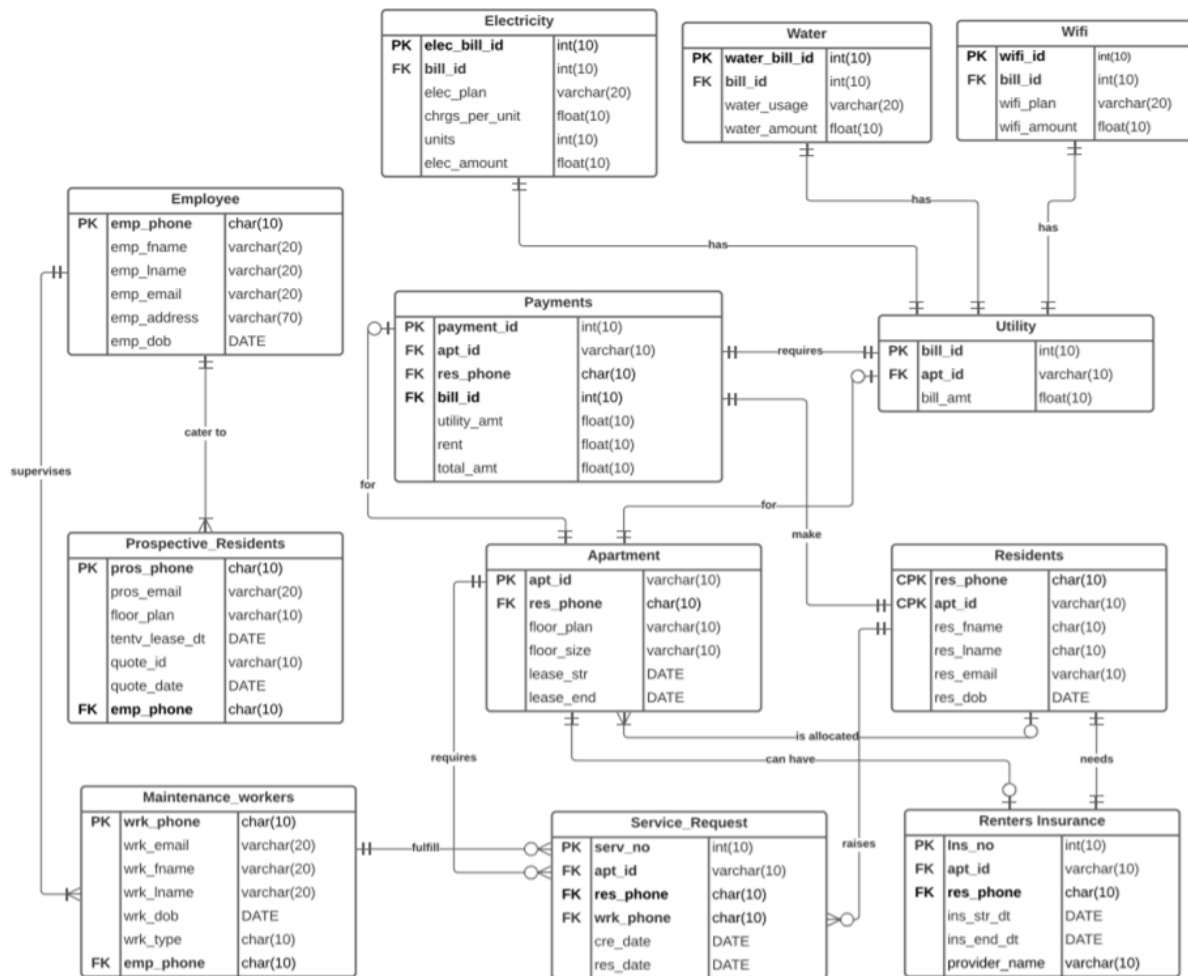
Our employees are having a tough time monitoring and managing numerous residents and service requests manually, some of the daily challenges we face are listed below:

- Difficult to manage innumerable service requests from residents, hard to track the request status.
- Capturing payment information for rent and different services is a tedious job.

- Poor visibility on maintenance efforts and frequent issues related to services.

To resolve this issue, we are planning to move to a database management system that can help us streamline our processes, reduce manual intervention, and make lives simpler at work. Some of the solutions that database system will help resolve the issues are listed below:

- Service requests can be raised from the website and the worker would be notified immediately.
- Payment process can be streamlined and recorded automatically using the dashboard and residents will be able to easily visualize their payment summaries on the go.
- Analyzing service requests will help in understanding which services need more workers based on request raised.
- Reduction in missing out on prospective customers by keeping a track in database system

ERD

Electricity

PK	elec_bill_id	int(10)
FK	bill_id	int(10)
	elec_plan	varchar(20)
	chrgs_per_unit	float(10)
	units	int(10)
	elec_amount	float(10)

Water

PK	water_bill_id	int(10)
FK	bill_id	int(10)
	water_usage	varchar(20)
	water_amount	float(10)

Wifi

PK	wifi_id	int(10)
FK	bill_id	int(10)
	wifi_plan	varchar(20)
	wifi_amount	float(10)

Employee

PK	emp_phone	char(10)
	emp_fname	varchar(20)
	emp_lname	varchar(20)
	emp_email	varchar(20)
	emp_address	varchar(70)
	emp_dob	DATE

Payments

PK	payment_id	int(10)
FK	apt_id	varchar(10)
FK	res_phone	char(10)
FK	bill_id	int(10)
	utility_amt	float(10)
	rent	float(10)
	total_amt	float(10)

Utility

PK	bill_id	int(10)
FK	apt_id	varchar(10)
	bill_amt	float(10)

Prospective_Residents

PK	pros_phone	char(10)
	pros_email	varchar(20)
	floor_plan	varchar(10)
	tentv_lease_dt	DATE
	quote_id	varchar(10)
	quote_date	DATE
FK	emp_phone	char(10)

Apartment

PK	apt_id	varchar(10)
FK	res_phone	char(10)
	floor_plan	varchar(10)
	floor_size	varchar(10)
	lease_str	DATE
	lease_end	DATE

Residents

CPK	res_phone	char(10)
CPK	apt_id	varchar(10)
	res_fname	char(10)
	res_lname	char(10)
	res_email	varchar(10)
	res_dob	DATE

Maintenance_workers

PK	wrk_phone	char(10)
	wrk_email	varchar(20)
	wrk_fname	varchar(20)
	wrk_lname	varchar(20)
	wrk_dob	DATE
	wrk_type	char(10)
FK	emp_phone	char(10)

Service_Request

PK	serv_no	int(10)
FK	apt_id	varchar(10)
FK	res_phone	char(10)
FK	wrk_phone	char(10)
	cre_date	DATE
	res_date	DATE

Renters Insurance

PK	Ins_no	int(10)
FK	apt_id	varchar(10)
FK	res_phone	char(10)
	ins_str_dt	DATE
	ins_end_dt	DATE
	provider_name	varchar(10)

Relationship labels: has, has, has, cater to, supervises, requires, for, for, make, is allocated, can have, requires, fulfill, raises, needs

Business Rules

1. Every employee must have a valid phone no and email ID.
2. Employee caters to prospective residents
3. Each employee caters to one or more prospective residents.
4. Prospective resident's information like tentative lease date, floor plan, email and phone number must be recorded..
5. Employee supervises Maintenance workers.
6. Each employee must supervise atleast 1 worker.
7. Maintenance workers must have valid phone & email.
8. Maintenance worker fulfills service requests.
9. A maintenance worker can work on multiple service requests.
10. Each service request must be fulfilled by a single worker only.
11. Every service request must contain valid service number, apartment_id, resident phone, worker phone, and creation date.
12. Every apartment must raise service request for maintenance.

13. An apartment may have zero or more service requests.
14. Each service request must be raised for a single apartment only.
15. Apartment must have attributes like apartment_id, floor details and lease details.
16. Payment may or may not be received for an apartment.
17. Every payment is attributed to a single apartment only.
18. Payments should have valid apartment_id, resident_phone, bill_id & amount details.
19. Utility is required for apartments.
20. Every apartment may or may not have utilility bill generated.
21. Each utility bill must corresspond to a single apartment only.
22. A utility is divided into three types - electricity, water & wifi.
23. Electricity must have valid electric plan, charges per unit, units and amount.
24. Residents are allocated to apartments.
25. Every apartment can have at most 1 resident as a primary owner / renter.
26. A resident can rent more than one apartment.
27. Every resident's primary renter/owner must have valid phone number & email.
28. Residents raises service requests.
29. Resident may or may not raise service request.
30. A service request must be raised by a single resident only.
31. Every resident needs renter's insurance.
32. Every apartment may or may not have a renter's insurance.
33. Every renter's insurance must be attributed to a single apartment.
34. Renter's insurance must have a provider name, insurance number, apartment_id, resident_phone, start date & end date.
35. Utility has Electricty.
36. Utility has Water.
37. Utility has Wifi.