Metropolitan State University

ICS 311-01: Database Management Systems
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Project Name: Property Management

Project Description

Tracking many properties, renters, contracts, payments, and maintenance requests; is a difficult and time-consuming operation. Involved in managing rental properties, manually keeping track of all the information can lead to errors, inaccuracies, and missed opportunities. A rental property management database system, which automates several time-consuming operations and offers immediate access to essential data, can offer an effective and centralized solution to these problems.

Problem :

At the moment, managing rental properties is laborious and reliant on spreadsheets, paper records, and verbal communication. This system may have shortcomings like:

It is difficult to identify lost opportunities for upselling or following up while monitoring rental payments and contracts with outdated or missing information.

Too long a response time to service inquiries

A rental property management database system has the following advantages:

1) Centralized data management that is simplified:
There is less chance of data loss or errors when all the information regarding properties, tenants, contracts, payments, and maintenance requests is kept in one location.

3) Improved communication: Many of the manual tasks associated with managing rental properties, such as reminding tenants to make payments, keeping track of repair requests, and monitoring contracts, can be automated by a database system.

3) Enhanced effectiveness
The productivity of rental property administration can be considerably increased by automating tedious processes and enabling actual data access, freeing up resources for other vital activities.

4) Making sensible decisions With real-time access to data, managers may make informed decisions about the rental rate, property management strategies, and more.

Users

Describe the different users of your system and what each role will be using the database for. What kind of interfaces will be needed for each user?

User	Role	Needs/Interface
Property manager	take the control of all data: property, help with leasing terms. Release every payment back to the owner Sending request to technician	Signup Login Update tenant information Update technician information Sending payment Sending request
Tenant	edit their data and request maintenance. Obtain payment history as well as the current outstanding balance.	Signup Login Pay rent see payment history request maintenance.
Technician	receive a request for maintenance issue maintenance charges update maintenance request status	Signup Login See the current request and all the completed request UI Update maintenance requests progress.

Database Entities

Determine the number of entities and attributes that will be needed to meet the needs of the system and its users. Follow the requirements for this portion to make sure you meet the expected requirements.

Entity	Attributes	Business Justification
Properties	1. property_id 2. property_name 3. property_address 4. property_type 5. number_of_units	• To store the property details • to let manger have overview picture of the property
Property manager	1. employee_id 2. f_name 3. l_name 4. email 5. property_id 6. phone_number	• manager manages the tenants and their details • allow managers to see the overview occupancy of the property • overview of any maintenance issues that were not addressed. • send maintenance request
Tenant	1. tenant_id 2. f_name 3. l_name	• store tenant information • associate tenant with a unit and property •

	4. email 5. phone_number	
Lease	1. lease_id 2. property_id 3. tenant_id 4. lease_start_date 5. lease_end_date	
Technician	1. technician_id 2. f_name 3. l_name 4. email 5. phone_number	
Maintenance requests	1. request_id 2. property_id 3. tenant_id 4. technician_id 5. description 6. status (open, in progress, completed)	● associate request with a tenant and unit ● keep maintenance status ● store status ● allow technician to use access and see any requests
Payment	1. payment_id 2. lease_id 3. payment_date 4. rent_amount	● store payments ● associate payments with a tenant using lease table

Query Scenarios

Detail the different scenarios that will be used for the database. See the requirements for the

Users(s)	Scenarios
tenant	1. check payment history 2.make payment 3.request maintenance 4.check status of maintenance request 5.update maintenance status
Technician	1. update maintenance request after work has been finished 2. view any maintenance request 3.view maintenance history of units

	4.view the occupancy status of units 5.issue maintenance charges
property manager	1. remove or edit Technicians data and tenants and see payment history of the tenants, 2. Check the occupancy status of units and update them accordingly. 3.view any maintenance request 4.send maintenance request 5.change the occupancy status of units

Group Members

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