

Data Management and Database Design (DAMG 6210)

P2. Database Design, Initial ERD - Spring 2023

Student Housing Management Database System

Team Members

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Business-Problem Description

The Property Rental Database will be an end-to-end home listing database wherein the system will have multiple roles accessing it. The system will allow students to conveniently view listed apartments and their corresponding details during their program tenure. Users of the system can use the platform to either list their properties for rent or look up various property listings. Registered users (Lessors and Lessees) will be able to sign a lease agreement for a particular property after agreement from both sides. The system will provide various features to users such as managing tenants and their housing information, rent payments, and lease agreements. The system will provide users with functionality to filter the various property listings as per their required conditions.

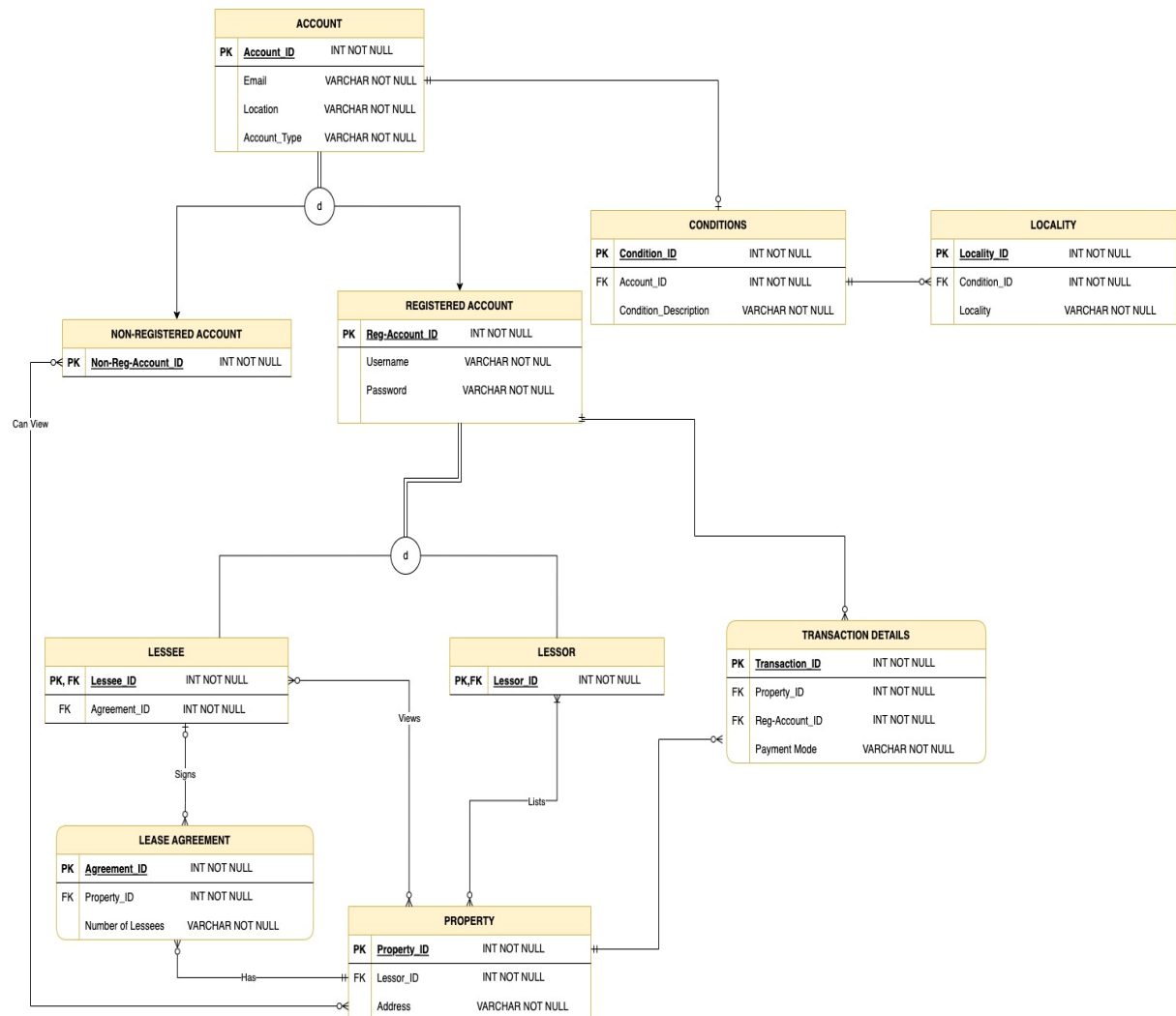
Entities

1. **Entity Name:** Account
Attributes: Account ID, Email, Location, Account Type
Primary Key: Account ID
2. **Entity Name:** Registered Account
Attributes: Reg-Account ID, Username, Password, Account Type
Super-type Entity: Account
Sub-type Entities: Lessee, Lessor
Primary Key: Reg-Account ID
3. **Entity Name:** Non-Registered Account
Attributes: Non-Reg-Account ID
Super-type Entity: Account
Primary Key: Non-Reg-Account ID
4. **Entity Name:** Conditions
Attributes: Condition ID, Account ID, Condition Description
Primary Key: Condition ID
5. **Entity Name:** Locality
Attributes: Locality ID, Condition ID, Locality
Primary Key: Locality ID
Foreign Key: *Condition ID*
6. **Entity Name:** Property
Attributes: Property ID, Lessor ID, Address
Primary Key: Property ID
Foreign Key: *Lessor ID*
7. **Entity Name:** Lessee
Attributes: Lessee ID, Agreement ID
Super-type Entity: Registered Account
Primary Key: Lessee ID

Foreign Key: *Agreement ID*

8. **Entity Name:** Lessor
Attributes: Lessor ID
Primary Key: Lessor ID
9. **Entity Name:** Lease Agreement
Attributes: Agreement ID, Property ID, Number of Lessees
Primary Key: Agreement ID
Foreign Key: *Property ID*
10. **Entity Name:** Transaction Details
Attributes: Transaction ID, Property ID, Reg-Account ID, Payment Mode
Primary Key: Transaction ID
Foreign Key: *Property ID, Reg-Account ID*

Initial Entity Relationship Diagram (ERD)



Business Rules

1. The user of the system will have an 'Account' which can either be 'Non-Registered Account' or 'Registered account'. A user with a Non-Registered Account can then register themselves on the system and create a 'Registered Account'.
2. Accounts must either have an 'Account Type' of 'Lessor' or 'Lessee'.
3. Both registered and non-registered account users (Of type Lessee) may view the various properties as per their requirements of Conditions and Locality. A 'Condition' must have a corresponding 'Account' and 'Locality' must have a corresponding 'Condition'.
4. Registered account users (of type Lessee) can select a property to rent and sign the lease agreement with the 'Lessor' (Landlord).
5. Multiple registered account users can rent a single property, and sign the lease agreement with the 'Lessor' (Landlord).
6. A Lessor may list 0 or more properties. A Lessee may view any number of properties.
7. A registered account user may have 0 or more 'Transaction Details'. A 'Transaction Details' instance must have a corresponding 'Registered User' and 'Property'.
8. A 'Property' may have 0 or more 'Transaction Details' which will be rent payments.
9. A 'Lessee' may sign 0 or more Lease Agreements. A 'Lease Agreement' must have one or more corresponding Lessees.
10. A 'Property' may or may not have a corresponding 'Lease Agreement'. A 'Lease Agreement' must have one corresponding 'Property'.