

UNIVERSITY OF KIGALI

SCHOOL OF ICT

BACHELOR OF INFORMATION TECHNOLOGY

DATABASE MANAGEMENT SYSTEM

CSC2401

ASSIGNMENT 2

❖ Marie Guyse- Laure AYITO: 2309001439

Supervisor: Dr BUGINGO EMMANUEL

27/01/2025

Title of the project:

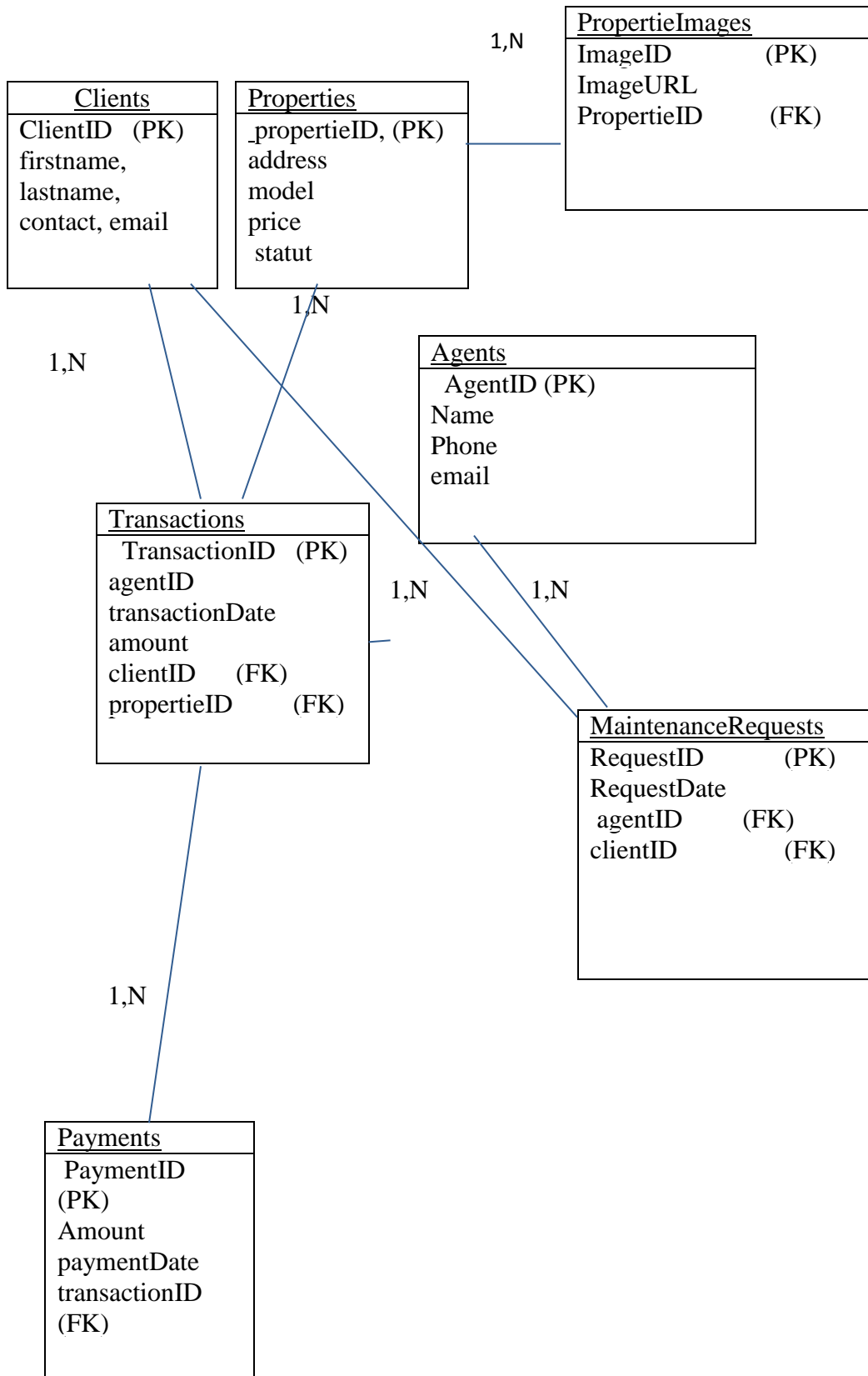
REAL ESTATE MANAGEMENT SYSTEM

Description of the project:

The Real Estate Management System is a database solution designed to help real estate agencies, landlords, and property managers efficiently manage properties, tenants, leases, and payments.

The database for a Real Estate Management System would consist of several interrelated tables to store key information. The **Clients** table tracks client details and preferences, while the **Properties** table holds information about available properties, including price, size, and status. The **Agents** table stores agent information, linking them to specific properties and clients. **Transactions** capture property sales, rentals, or purchases, with references to clients, agents, and properties. The **Payments** table records financial transactions related to properties, including amounts and payment status. **Maintenance Requests** store issues related to properties, while the **Property Images** table manages images associated with property listings. Relationships are established between these entities, ensuring seamless tracking of clients, properties, transactions, payments, and requests throughout the system.

ERD:



LOGICAL DATA MODEL:

1. **Clients** (clientID, firstname, lastname, contact, email)
2. **Properties** (propertieID, address, model, price, statut)
3. **Agents** (agentID, name, phone, email)
4. **Transactions** (transactionID, agentID, transactionDate, amount, clientID#, propertieID#)
5. **Payments** (paymentID, amount, paymentDate, transactionID#)
6. **Maintenance Requests** (requestID, requestDate, propertieID#, clientID#)
7. **Propertie Images** (imageID, imageURL, propertieID#)

DATA DICTIONARY:

Table Name	Column Name	Data Type	Constraints	Description
Clients	clientID	INT	PRIMARY KEY	Unique identifier for each client
	firstname	VARCHAR(50)	NOT NULL	Client's first name
	lastname	VARCHAR(50)	NOT NULL	Client's last name
	contact	VARCHAR(50)	NOT NULL	Client's phone number
	email	VARCHAR(50)	NULL	Client's email address
Properties	propertieID	VARCHAR(10)	PRIMARY KEY	Unique identifier for each property
	address	VARCHAR(50)	NOT NULL	Property address
	model	VARCHAR(50)	NOT NULL	Type or model of the property
	price	DECIMAL	NOT NULL	Price of the property
	statut	VARCHAR(15)	NOT NULL	Status (Available, Sold, Rented)
Agents	agentID	INT	PRIMARY KEY	Unique identifier for each agent
	name	VARCHAR(100)	NOT NULL	Full name of the agent
	phone	VARCHAR(50)	NOT NULL	Contact number of the agent
	email	VARCHAR(50)	NULL	Email of the agent
Transactions	transactionID	INT	PRIMARY KEY, AUTO_INCREMENT	Unique transaction ID
	clientID	INT	FOREIGN KEY REFERENCES clients(clientID)	Client involved in the transaction
	propertieID	VARCHAR(10)	FOREIGN KEY REFERENCES properties(propertieID)	Property being transacted
	agentID	INT	FOREIGN KEY	Agent handling

			REFERENCES agents(agentID)	the transaction
	transactionDate	DATE	NULL	Date of the transaction
	amount	DECIMAL	NULL	Transaction amount
Payments	paymentID	INT	PRIMARY KEY, AUTO_INCREMENT	Unique identifier for each payment
	transactionID	INT	FOREIGN KEY REFERENCES transactions(transactionID)	Associated transaction
	amount	DECIMAL	NOT NULL	Payment amount
	paymentDate	DATE	NOT NULL	Date of payment
Maintenance Requests	requestID	INT	PRIMARY KEY, AUTO_INCREMENT	Unique maintenance request ID
	propertieID	VARCHAR(10)	FOREIGN KEY REFERENCES properties(propertieID)	Property needing maintenance
	clientID	INT	FOREIGN KEY REFERENCES clients(clientID)	Client making the request
	requestDate	DATE	NOT NULL	Date of maintenance request
PropertieImages	imageID	INT	PRIMARY KEY, AUTO_INCREMENT	Unique identifier for each image
	propertieID	VARCHAR(10)	FOREIGN KEY REFERENCES properties(propertieID)	Property linked to the image
	imageURL	VARCHAR(200)	NOT NULL	URL of the property image