**E-R Diagram**



**Assumptions:**

1. Each office is assigned one or more employee.
2. Each employee must be assigned to only one office.
3. For each office, one employee is assigned as manager always.
4. Each manager is assigned to manage each office.
5. Each property must be managed by one of the office.
6. Each office may have several properties managed.
7. Each Property has one or more owners.
8. Each owner may own one or more property/properties.

**Relational Schema**

1. **Offices** (Office Number, Office Address\_Street, Office Address\_City, Office Address\_State, Office Address\_ZipCode, Office Telephone-no)
2. **Properties** ( Property Number, Property Address, Property Type\_No. of Rooms, Property Type\_No. of Baths, Vacancy, Employee-ID, Date of view) Add Client Number, Owner Number, Employee-id
3. **Owners** (Owner Number, Owner Name, Owner Address, Owner Type, Owner Telephone-no)
4. **Employees** ( Employee-ID, Employee SSN, Employee First Name, Employee Last Name, Employee Address, Employee Telephone-no, Job Title, Gender, Hire Date, Manager-ID)
5. **Renters** ( Client Number, Client Name, Rent Payment, Client Telephone-no) Add Employee\_id
6. **Maintenance** ( Property Inspection, Office Number ( Office number), Inspection Date, Inspected By, Issue Found, Issue Fixed) Add Property Number
7. **Owns** (Owner Number, Property Number)
8. **Lease** (Client Number, Property Number, Employee-ID, Lease-ID, Rent Payment\_Start Date, Rent Payment\_End Date)
9. **Collection** (Client Number, Property Number, Client Number, Date Received, Due Date, Amount)
10. **ADD View** ( Client Number, Employee-id, Date of View, Employee-id\_View)

**Offices** (Office Number, Office Address\_Street, Office Address\_City, Office Address\_State, Office Address\_ZipCode, Office Telephone-no)

CREATE TABLE Offices (

Office\_Number INTEGER(25) NOT NULL ,

Office\_Address\_Street VARCHAR (100),

Office\_Address\_City VARCHAR (100),

Office\_Address\_State VARCHAR (100),

Office\_Telephone\_no INTEGER (20),

PRIMARY KEY (Office\_Number)

);

**Properties** ( Property Number, Property Address, Property Type\_No. of Rooms, Property Type\_No. of Baths, Vacancy, Employee-ID, Date of view) Add Client Number, Owner Number, Employee-id

CREATE TABLE Properties (

Property\_Number VARCHAR (25) NOT NULL,

Property\_Address VARCHAR (100),

Property\_Type\_No\_Rooms VARCHAR (25),

Property\_Type\_No\_Baths VARCHAR (25),

Vacancy VARCHAR (100),

Owner\_Number VARCHAR(25) NOT NULL,

Employee\_Id VARCHAR (25) NOT NULL ,

PRIMARY KEY (Property\_Number)

);

**Owners** (Owner Number, Owner Name, Owner Address, Owner Type, Owner Telephone-no)

CREATE TABLE Owners (

Owner\_Number VARCHAR(25) NOT NULL,

Owner\_Name VARCHAR (100),

Owner\_Address VARCHAR (100),

Owner\_Type VARCHAR (100),

Owner\_Telephone\_No VARCHAR (25),

PRIMARY KEY (Owner\_Number)

);

**Employees** (Employee-ID, Employee SSN, Employee First Name, Employee Last Name, Employee Address, Employee Telephone-no, Job Title, Gender, Hire Date, Manager-ID)

CREATE TABLE Employees (

Employee\_Id VARCHAR (25) NOT NULL,

Employee\_SSN VARCHAR (15) NOT NULL,

Employee\_First\_Name VARCHAR (100),

Employee\_Last\_Name VARCHAR (100),

Employee\_Address VARCHAR (100),

Employee\_Telephone\_No INTEGER (25),

Job\_Title VARCHAR (100),

Gender Char(1),

Hire\_Date Date,

Manager\_Id VARCHAR (25),

PRIMARY KEY (Employee\_Id));

**\*Renters** ( Client Number, Client Name, Rent Payment, Client Telephone-no) Add Employee\_id

CREATE TABLE Renters

(

Client\_Number VARCHAR (100) NOT NULL,

Client\_Name VARCHAR (100),

Rent\_Payment decimal(10,2),

Client\_Telephone\_No INTEGER (25)

PRIMARY KEY (Client\_Number)

);

**Maintenance** ( Property Inspection, Office Number ( Office number), Inspection Date, Inspected By, Issue Found, Issue Fixed) Add Property Number

CREATE TABLE Maintenance

(

Property\_Inspection VARCHAR(100) NOT NULL,

Office\_Number VARCHAR(100) NOT NULL,

Inspection\_Date DATE,

Inspected\_By VARCHAR(100),

Issue\_Found VARCHAR(100),

Issues\_Fixed VARCHAR(100);

PRIMARY KEY (Property\_Inspection),

PRIMARY KEY (Office\_Number)

);

**Owns** (Owner Number, Property Number)

CREATE TABLE Owns

(

Owner\_Num VARCHAR (25) NOT NULL,

Property\_Num VARCHAR (25) NOT NULL,

PRIMARY KEY (Owner\_Number, Property\_Number)

);

ALTER TABLE Owns

ADD CONSTRAINT FK\_owns

FOREIGN KEY (Owner\_Num ) REFERENCES Owner(Owner\_Number),

FOREIGN KEY (Property\_Num) REFERENCES Property(Property\_Number)

ON UPDATE CASCADE

ON DELETE CASCADE;

**Lease** (Client Number, Property Number, Employee-ID, Lease-ID, Rent Payment\_Start Date, Rent Payment\_End Date)

CREATE TABLE Lease

(

Client\_Number VARCHAR (25) NOT NULL,

Property\_Number VARCHAR (25) NOT NULL,

Employee\_Id VARCHAR (25),

Lease\_Id VARCHAR (25),

Rent\_Payment\_Start\_Date VARCHAR (100),

Rent\_Payment\_End\_Date VARCHAR (100),

);

**Collection** (Client Number, Property Number, Client Number, Date Received, Due Date, Amount)

CREATE TABLE Collection

(

Client\_Number VARCHAR (25) NOT NULL,

Property\_Number VARCHAR (25) NOT NULL,

Client\_Number VARCHAR (25),

Date\_Received DATE (mm/dd/yyyy),

Due\_Date DATE (mm/dd/yyyy),

Amount INTEGER (100,10)

);