ADDRESS:

**Street**, **Postcode**, City, State

CREDIT CARD:

**Number**, Expiration, CVV, Street, Postcode, email

NEIGHBORHOOD:

**Name**, **Postcode,** Crime\_rates, Happiness\_score, Nearby\_schools, Nearby\_hospitals,

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RENTER:

**Email**, Name, Desired\_move-in\_date, Preferred\_location, Budget

AGENT:

**Email**, Name, Job\_title, Real\_Estate\_agency, Contact\_info

—-----------------

HOUSE: **Identifier**, City, State, Description, Address, Price, Rental\_price, Credit\_card, Availability, Square\_footage, Number\_of\_rooms, Email, Neigh\_name, Postcode

APARTMENT: **Identifier**, City, State, Description, Address, Price, Rental\_price, Credit\_card, Availability, Square\_footage, Number\_of\_rooms, Email, Neigh\_name, Postcode

COMMERCIAL BUILDING: **Identifier**, City, State, Description, Address, Price, Rental\_price, Credit\_card, Availability, Square\_footage, Type\_of\_business, Email, Neigh\_name, Postcode

VACATION HOME: **Identifier**, City, State, Description, Address, Price, Rental\_price, Credit\_card, Availability, Square\_footage, Number of rooms, Email, Neigh\_name, Postcode

LAND: **Identifier**, City, State, Description, Address, Price, Rental\_price, Credit\_card, Availability, Square\_footage, Type\_of\_land, Email, Neigh\_name, Postcode

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BOOKINGS: Number, Email, Identifier, **Booking\_ID,** Rewards\_ID

REWARD PROGRAM: **Reward\_id**, Points, Email

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CLARIFICATIONS AND NEW CHANGES:

We have decided to change the type of entity for the REWARD PROGRAM, instead of being a WEAK ENTITY, it will be a strong entity with partial participation for both RENTER and BOOKINGS, and with an Rewards\_ID primary key in order to identify the instance of the reward program.

Additionally, we have added a primary key Booking\_ID to the BOOKINGS entity to identify each booking.

We have decided that the participation of CREDIT CARD in its relationship with address should be total. All credit-cards need to have an Address.

For the property entity, we have added the attributes IS\_IN\_SALE and IS\_IN\_RENT in order to know if the property is available for being sold and also if it is available for being rented.

**CREATE TABLE ADDRESS (**

**Street varchar(255),**

**Postcode INT,**

**City varchar(255),**

**State varchar(255),**

**PRIMARY KEY (Street, Postcode)**

**);**

**CREATE TABLE USER (**

**Email varchar(255),**

**Name varchar(255) NOT NULL,**

**PRIMARY KEY (Email)**

**);**

**CREATE TABLE RENTER (**

**Email varchar(255),**

**Name varchar(255) NOT NULL,**

**Desired\_move\_in\_date date NOT NULL,**

**Preferred\_location varchar(255),**

**Budget numeric(10, 2),**

**PRIMARY KEY (Email),**

**FOREIGN KEY (Email) REFERENCES USER (Email)**

**);**

**CREATE TABLE AGENT (**

**Email varchar(255),**

**Name varchar(255) NOT NULL,**

**Job\_title varchar(255),**

**Real\_Estate\_agency varchar(255),**

**Contact\_info varchar(255),**

**PRIMARY KEY (Email),**

**FOREIGN KEY (Email) REFERENCES USER (Email)**

**);**

**CREATE TABLE CREDIT\_CARD (**

**Number varchar(255),**

**Expiration date NOT NULL,**

**CVV INT NOT NULL check (CVV < 1000),**

**Street varchar(255)NOT NULL,**

**Postcode INT NOT NULL check (Postcode < 100000),**

**Email varchar(255)NOT NULL,**

**PRIMARY KEY (Number),**

**FOREIGN KEY (Email) REFERENCES USER (Email),**

**FOREIGN KEY (Street, Postcode) REFERENCES ADDRESS (Street, Postcode)**

**);**

**CREATE TABLE NEIGHBORHOOD (**

**Name varchar(255),**

**Postcode INT NOT NULL check (Postcode < 100000),**

**Crime\_rates decimal(7,2) check (Crime\_rate >= 0 and crime\_rate <= 50000.00),**

**Happiness\_score decimal(5, 2) check (Happiness\_score >= 0 and crime\_rate <= 100.00),**

**Nearby\_schools INT check (Nearby\_schools >= 0 and Nearby\_schools <= 100.00),**

**Nearby\_hospitals INT check (Nearby\_schools >= 0 and Nearby\_schools <= 100.00),**

**PRIMARY KEY (Name, Postcode)**

**);**

**CREATE TABLE PROPERTY(**

**PropertyID varchar(255),**

**City varchar(255) NOT NULL,**

**State varchar(255) NOT NULL,**

**Description varchar(500),**

**Address varchar(255) NOT NULL,**

**Neigh\_postcode INT NOT NULL check (Neigh\_postcode < 100000),**

**Neigh\_name varchar(255) NOT NULL,**

**Price numeric(10, 2),**

**Rental\_price numeric(10, 2),**

**IsInRent boolean NOT NULL,**

**IsInSale boolean NOT NULL,**

**Type varchar(255) NOT NULL check (Type in (‘House’, ‘Apartment’, ‘Land’, ‘Vacation Home’, Commercial building’)),**

**Availability boolean NOT NULL,**

**Square\_footage numeric(10, 2) NOT NULL,**

**Email varchar(255) NOT NULL,**

**PRIMARY KEY (PropertyID),**

**FOREIGN KEY (Email) REFERENCES AGENT (Email),**

**FOREIGN KEY (Neigh\_name, Neigh\_postcode) REFERENCES NEIGHBORHOOD (Name, Postcode)**

**);**

**CREATE TABLE HOUSE (**

**PropertyId INT PRIMARY KEY,**

**NumRooms INT,**

**Type VARCHAR(255) NOT NULL,**

**CHECK (Type = 'House')**

**FOREIGN KEY (PropertyId) REFERENCES Property(PropertyId)**

**CREATE TABLE APARTMENT (**

**PropertyId INT PRIMARY KEY,**

**NumRooms INT,**

**Type VARCHAR(255) NOT NULL,**

**CHECK (Type = 'Apartment')**

**FOREIGN KEY (PropertyId) REFERENCES Property(PropertyId)**

**);**

**CREATE TABLE COMMERCIAL\_BUILDING (**

**PropertyId INT PRIMARY KEY,**

**Type VARCHAR(255) NOT NULL,**

**CHECK (Type = 'Comercial Building')**

**TypeOfBusiness varchar(255),**

**FOREIGN KEY (PropertyId) REFERENCES Property(PropertyId)**

**);**

**CREATE TABLE VACATION\_HOME (**

**PropertyId INT PRIMARY KEY,**

**NumRooms INT,**

**Type VARCHAR(255) NOT NULL,**

**CHECK (Type = Vacation home)**

**FOREIGN KEY (PropertyId) REFERENCES Property(PropertyId)**

**);**

**CREATE TABLE LAND (**

**PropertyId INT PRIMARY KEY,**

**TypeOfLand varchar(255),**

**Type VARCHAR(255) NOT NULL,**

**CHECK (Type = Land)**

**FOREIGN KEY (PropertyId) REFERENCES Property(PropertyId)**

**);**

**CREATE TABLE BOOKINGS (**

**CardNumber int NOT NULL,**

**Email varchar(255) NOT NULL,**

**PropertyID varchar(255) NOT NULL,**

**Booking\_ID INT,**

**Rewards\_ID INT,**

**PRIMARY KEY (Booking\_ID),**

**FOREIGN KEY (CardNumber) REFERENCES CREDIT\_CARD (Number),**

**FOREIGN KEY (Email) REFERENCES RENTER (Email),**

**FOREIGN KEY (PropertyID) REFERENCES Property(PropertyID),**

**FOREIGN KEY (Rewards\_ID) REFERENCES REWARD\_PROGRAM (Reward\_id)**

**FOREIGN KEY (Email) REFERENCES RENTER (Email)**

**);**

**CREATE TABLE REWARD\_PROGRAM (**

**Reward\_id INT,**

**Points INT,**

**Email varchar(255) NOT NULL,**

**PRIMARY KEY (Reward\_id),**

**FOREIGN KEY (Email) REFERENCES RENTER (Email)**

**);**

**CREATE INDEX idx\_user\_email ON USER(email)**

**CREATE INDEX idx\_renter\_email ON Renter (Name);**

**CREATE INDEX idx\_agent\_email ON Agent (Name);**

**CREATE INDEX idx\_renter\_budget ON Renter (Budget);**

**CREATE INDEX idx\_renter\_moveindate ON Renter (Desired\_move\_in\_date date);**

**CREATE INDEX idx\_neighborhood\_postcode ON Neighborhood (Postcode);**

**CREATE INDEX idx\_property\_type ON Property(Type);**