

SQL PROJECT: Real Estate Management System

```
1 • create database real_estate_management;
2
3 • use real_estate_management;
4
5 -- 1. Create Tables
6
7 • CREATE TABLE Agents (
8     AgentID INT PRIMARY KEY,
9     FirstName VARCHAR(50),
10    LastName VARCHAR(50),
11    Email VARCHAR(100),
12    Phone VARCHAR(20),
13    HireDate DATE,
14    CommissionRate DECIMAL(5,2)
15 );
16
17 • CREATE TABLE Clients (
18     ClientID INT PRIMARY KEY,
19     FirstName VARCHAR(50),
20     LastName VARCHAR(50),
```

create database
and table

```
CREATE TABLE Properties (
    PropertyID INT PRIMARY KEY,
    Address VARCHAR(100),
    City VARCHAR(50),
    State VARCHAR(20),
    ZipCode VARCHAR(10),
    Price DECIMAL(12,2),
    Status VARCHAR(20),
    AgentID INT,
    ListingDate DATE,
    PropertyType VARCHAR(50),
    Bedrooms INT,
    Bathrooms INT,
    SquareFeet INT,
    FOREIGN KEY (AgentID) REFERENCES Agents(AgentID)
);
```

insert values

- **CREATE TABLE** Clients (
 ClientID **INT PRIMARY KEY**,
 FirstName **VARCHAR(50)**,
 LastName **VARCHAR(50)**,
 Email **VARCHAR(100)**,
 Phone **VARCHAR(20)**,
 ClientType **VARCHAR(10)**
);

```
CREATE TABLE Transactions (  
    TransactionID INT PRIMARY KEY,  
    PropertyID INT,  
    BuyerID INT,  
    SellerID INT,  
    AgentID INT,  
    SalePrice DECIMAL(12,2),  
    SaleDate DATE,  
    CommissionEarned DECIMAL(12,2),  
    FOREIGN KEY (PropertyID) REFERENCES Properties(PropertyID),  
    FOREIGN KEY (BuyerID) REFERENCES Clients(ClientID),  
    FOREIGN KEY (SellerID) REFERENCES Clients(ClientID),  
    FOREIGN KEY (AgentID) REFERENCES Agents(AgentID)  
);
```

```

-- 2. Insert Data
-- -- Agents
INSERT INTO Agents VALUES
(101, 'Sarah', 'Johnson', 'sarah@agency.com', '9865934249', '2020-06-01', 0.05),
(102, 'Michael', 'Smith', 'michael@agency.com', '9865934248', '2022-02-20', 0.04);

select * from Agents;

-- Clients
INSERT INTO Clients VALUES
(201, 'Alice', 'Brown', 'alice@mail.com', '9632584592', 'Seller'),
(202, 'Bob', 'Miller', 'bob@mail.com', '5968326598', 'Buyer'),
(203, 'Tom', 'Clark', 'tom@mail.com', '5698324589', 'Seller'),
(204, 'Nina', 'Gray', 'nina@mail.com', '8695324575', 'Buyer');

-- Properties
INSERT INTO Properties VALUES
(1, '123 Main St', 'Miami', 'FL', '33101', 500000.00, 'Sold', 101, '2024-01-10', 'House', 3, 2, 1800),
(2, '456 Oak Ave', 'Orlando', 'FL', '32801', 350000.00, 'Available', 102, '2024-03-12', 'Apartment', 2, 1, 900),
(3, '789 Pine Rd', 'Tampa', 'FL', '33601', 450000.00, 'Sold', 101, '2024-01-20', 'House', 4, 3, 2200),
(4, '321 Elm St', 'Miami', 'FL', '33101', 600000.00, 'Available', 102, '2024-04-01', 'Commercial', 0, 2, 3500);

-- Transactions
INSERT INTO Transactions VALUES
(301, 1, 202, 201, 101, 490000.00, '2024-04-05', 24500.00),
(302, 3, 204, 203, 101, 440000.00, '2024-04-10', 22000.00);

```

```

107
108
109
110 -- 1. List all clients who have participated in any transaction (buyer or seller)
111
112 • SELECT DISTINCT C.ClientID, C.FirstName, C.LastName, C.ClientType
113 FROM Clients C
114 JOIN Transactions T
115 ON C.ClientID = T.BuyerID OR C.ClientID = T.SellerID;
116
117
118
119
120

```

Result Grid				
		Filter Rows:	Export:	Wrap Cell Content:
	ClientID	FirstName	LastName	ClientType
▶	201	Alice	Brown	Seller
	202	Bob	Miller	Buyer
	203	Tom	Clark	Seller
	204	Nina	Gray	Buyer

```

125
126 -- 2. Show all properties that have not yet been sold
127 • SELECT *
128 FROM Properties
129 WHERE Status <> 'Sold';
130
131
132
133
134
135
136
137
138

```

PropertyID	Address	City	State	ZipCode	Price	Status	AgentID	ListingDate	PropertyType	Bedrooms	Bathrooms	SquareFeet
2	456 Oak Ave	Orlando	FL	32801	350000.00	Available	102	2024-03-12	Apartment	2	1	900
4	321 Elm St	Miami	FL	33101	600000.00	Available	102	2024-04-01	Commercial	0	2	3500
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```

138
139 -- 3. Show total commission earned by each agent
140
141 • SELECT
142     A.AgentID,
143     CONCAT(A.FirstName, ' ', A.LastName) AS AgentName,
144     SUM(T.CommissionEarned) AS TotalCommission
145 FROM Agents A
146 JOIN Transactions T ON A.AgentID = T.AgentID
147 GROUP BY A.AgentID;
148
149
150
151

```

AgentID	AgentName	TotalCommission
101	Sarah Johnson	46500.00

Result Grid

Filter Rows

Export

Wrap Cell Content




	City	AvailableProperties
▶	Orlando	1
	Miami	1

[illegible]

```

179
180
181 -- 6. Get average sale price per city
182
183 • SELECT
184     P.City,
185     AVG(T.SalePrice) AS AvgSalePrice
186 FROM Transactions T
187 JOIN Properties P ON T.PropertyID = P.PropertyID
188 GROUP BY P.City;
189
190
191
192

```




Result Grid  Filter Rows: Export:  Wrap Cell Content: 

	City	AvgSalePrice
▶	Miami	490000.000000
	Tampa	440000.000000

```

192
193 -- 7. Get list of agents who have not closed any transaction
194
195 • SELECT
196     A.AgentID,
197     CONCAT(A.FirstName, ' ', A.LastName) AS AgentName
198 FROM Agents A
199 LEFT JOIN Transactions T ON A.AgentID = T.AgentID
200 WHERE T.TransactionID IS NULL;
201
202
203
204
205

```

Result Grid  Filter Rows: Export:  Wrap Cell Content: 

	AgentID	AgentName
▶	102	Michael Smith

```

205
206 -- 8. Show list of properties with agent and current status (Available/Sold)
207
208 • SELECT
209     P.PropertyID,
210     P.Address,
211     P.Status,
212     CONCAT(A.FirstName, ' ', A.LastName) AS AgentName
213 FROM Properties P
214 JOIN Agents A ON P.AgentID = A.AgentID;
215
216
217
218

```

PropertyID	Address	Status	AgentName
1	123 Main St	Sold	Sarah Johnson
2	456 Oak Ave	Available	Michael Smith
3	789 Pine Rd	Sold	Sarah Johnson
4	321 Elm St	Available	Michael Smith

```

220 -- 9. List all buyers who have purchased a house with more than 3 bedrooms

```

2 Open a script file in this editor

```

222 • SELECT DISTINCT
223     C.ClientID,
224     C.FirstName,
225     C.LastName,
226     C.Email
227 FROM Clients C
228 JOIN Transactions T ON C.ClientID = T.BuyerID
229 JOIN Properties P ON T.PropertyID = P.PropertyID
230 WHERE P.Bedrooms > 3;
231
232
233

```

ClientID	FirstName	LastName	Email
204	Nina	Gray	nina@mail.com

```

235
236 -- 10. JOIN Query
237 -- Show property listings with agent names
238 • SELECT
239     P.Address,
240     P.City,
241     P.Price,
242     CONCAT(A.FirstName, ' ', A.LastName) AS AgentName
243 FROM Properties P
244 JOIN Agents A ON P.AgentID = A.AgentID;
245
246
247
248

```

Result Grid Filter Rows: Export: Wrap Cell Content:

	Address	City	Price	AgentName
▶	123 Main St	Miami	500000.00	Sarah Johnson
	456 Oak Ave	Orlando	350000.00	Michael Smith
	789 Pine Rd	Tampa	450000.00	Sarah Johnson
	321 Elm St	Miami	600000.00	Michael Smith

```

250
251 -- 11. View
252 -- View of all sold properties with agent info
253 • CREATE VIEW SoldPropertiesView AS
254 SELECT T.TransactionID, P.Address, T.SalePrice, T.SaleDate, CONCAT(A.FirstName, ' ', A.LastName) AS AgentName,
255     T.CommissionEarned
256 FROM Transactions T
257 JOIN Properties P ON T.PropertyID = P.PropertyID
258 JOIN Agents A ON T.AgentID = A.AgentID
259 WHERE P.Status = 'Sold';
260
261 • SELECT * FROM SoldPropertiesView;
262
263

```

Result Grid Filter Rows: Export: Wrap Cell Content:

	TransactionID	Address	SalePrice	SaleDate	AgentName	CommissionEarned
▶	301	123 Main St	490000.00	2024-04-05	Sarah Johnson	24500.00
	302	789 Pine Rd	440000.00	2024-04-10	Sarah Johnson	22000.00

SoldPropertiesView


```

265
266 -- 12 Subquery
267
268 -- Get the transaction with the highest sale price
269 • SELECT *
270 FROM Transactions
271 WHERE SalePrice = (
272     SELECT MAX(SalePrice) FROM Transactions
273 );
274
275
276
277
278

```

TransactionID	PropertyID	BuyerID	SellerID	AgentID	SalePrice	SaleDate	CommissionEarned
301	1	202	201	101	490000.00	2024-04-05	24500.00
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```

275 -- 13 Stored Procedure
276 DELIMITER //
277 • CREATE PROCEDURE CountPropertiesByAgent(IN agent_id INT)
278 BEGIN
279     SELECT
280         COUNT(*) AS PropertyCount,
281         CONCAT(FirstName, ' ', LastName) AS AgentName
282     FROM Properties P
283     JOIN Agents A ON P.AgentID = A.AgentID
284     WHERE P.AgentID = agent_id
285     GROUP BY A.AgentID;
286 END //
287 DELIMITER ;
288 • CALL CountPropertiesByAgent(101);

```

PropertyCount	AgentName
2	Sarah Johnson