SQL PROJECT: Real Estate Management System

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

```
    ○ CREATE TABLE Properties (
      PropertyID INT PRIMARY KEY,
      Address VARCHAR(100),
      City VARCHAR(50),
                                                     insert values
      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)
  );
```

```
• ○ CREATE TABLE Clients (

ClientID INT PRIMARY KEY,

FirstName VARCHAR(50),

LastName VARCHAR(50),

Email VARCHAR(100),

Phone VARCHAR(20),

ClientType VARCHAR(10)
);
```

```
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)

);
```

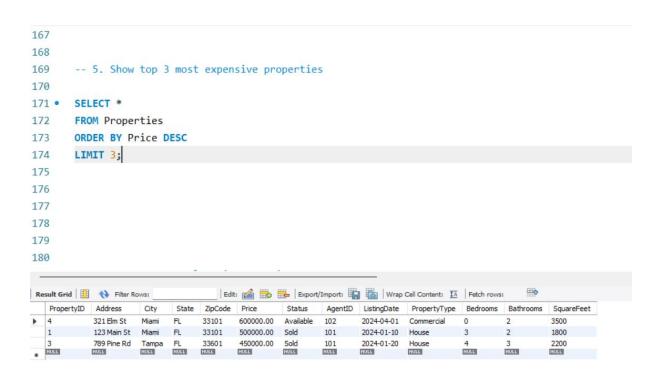
```
-- 2. Insert Data
  -- -- Agents
 INSERT INTO Agents VALUES
 (101, 'Sarah', 'Johnson', 'sarah@agency.com', '9865934249', '2020-06-01', 0.05),
 (102, 'Michael', 'Smith', 'michael@agency.com', '9865934248', '2022-02-20', 0.04);
 select * from Agents;
 -- Clients
 INSERT INTO Clients VALUES
 (201, 'Alice', '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
       ON C.ClientID = T.BuyerID OR C.ClientID = T.SellerID;
115
116
117
118
119
120
Export: Wrap Cell Content: IA
  ClientID FirstName LastName ClientType
                         Seller
201
         Alice
                 Brown
  202
        Bob
                Miller
                        Buver
                 Clark
  203
         Tom
                         Seller
  204 Nina Gray Buyer
```

```
125
126
        -- 2. Show all properties that have not yet been sold
127 • SELECT *
        FROM Properties
128
        WHERE Status <> 'Sold';
129
130
131
132
133
134
135
136
137
138
| Edit: 🚄 🖶 🖶 | Export/Import: 🏣 🐌 | Wrap Cell Content: 🖽
  PropertyID Address
                            State ZipCode Price
                                                 Status AgentID ListingDate PropertyType Bedrooms Bathrooms SquareFeet
                     City
) 2
           456 Oak Ave
                     Orlando FL
                                  32801
                                        350000.00 Available 102
                                                                2024-03-12 Apartment
                                                                                   2
                                                                                            1
                                                                                                     900
                                 33101 600000.00 Available 102
                                                                2024-04-01 Commercial 0
                                                                                                    3500
NULL
           321 Elm St Miami FL
* NULL
                                                                                   NULL
                                                                                            NULL
```

```
138
139
       -- 3. Show total commission earned by each agent
140
       SELECT
141 •
142
           A.AgentID,
           CONCAT(A.FirstName, ' ', A.LastName) AS AgentName,
143
           SUM(T.CommissionEarned) AS TotalCommission
144
       FROM Agents A
145
       JOIN Transactions T ON A.AgentID = T.AgentID
146
       GROUP BY A.AgentID;
147
148
149
150
151
                                Export: Wrap Cell Content: IA
AgentID AgentName TotalCommission
▶ 101
        Sarah Johnson 46500.00
```

```
154
155
       -- 4. Count how many properties are available per city
156
157 •
       SELECT
158
         City,
159
          COUNT(*) AS AvailableProperties
160
       FROM Properties
       WHERE Status = 'Available'
161
162
       GROUP BY City;
163
164
165
166
167
Export: Wrap Cell Content: 1A
City AvailableProperties

Orlando 1
Miami 1
```

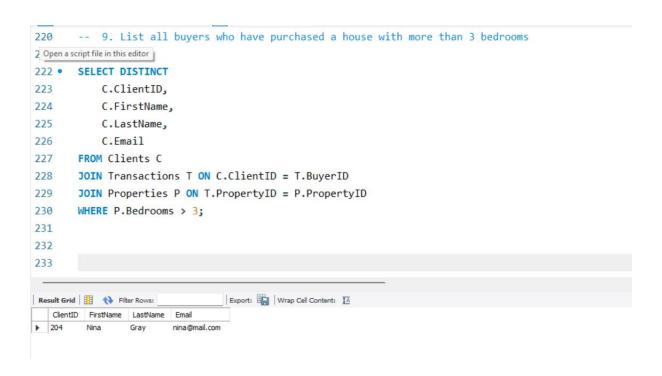


```
179
180
       -- 6. Get average sale price per city
181
182
       SELECT
183 •
184
           P.City,
185
           AVG(T.SalePrice) AS AvgSalePrice
186
       FROM Transactions T
187
       JOIN Properties P ON T.PropertyID = P.PropertyID
       GROUP BY P.City;
188
189
190
191
192
                               Export: Wrap Cell Content: IA
 City
        AvgSalePrice
        490000.000000
Miami
  Tampa 440000.000000
192
        -- 7. Get list of agents who have not closed any transaction
193
194
195 •
        SELECT
196
           A.AgentID,
           CONCAT(A.FirstName, ' ', A.LastName) AS AgentName
197
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
Export: Wrap Cell Content: IA
  AgentID AgentName
```

▶ 102

Michael Smith

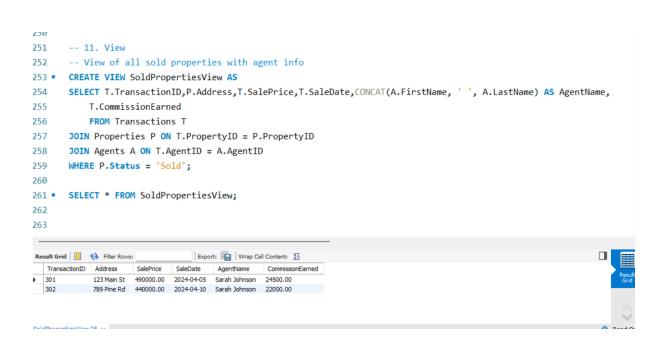
```
205
206
        -- 8. Show list of properties with agent and current status (Available/Sold)
207
208 • SELECT
209
             P.PropertyID,
210
             P.Address,
211
             P.Status,
212
             CONCAT(A.FirstName, ' ', A.LastName) AS AgentName
213
        FROM Properties P
214
        JOIN Agents A ON P.AgentID = A.AgentID;
215
216
217
218
Export: Wrap Cell Content: 1A
  PropertyID Address
                     Status
                              AgentName
           123 Main St Sold
456 Oak Ave Available
                              Sarah Johnson
  2
                              Michael Smith
           789 Pine Rd Sold Sarah Johnson
321 Elm St Available Michael Smith
  4
```



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



```
265
       -- 12 Subquery
266
267
        -- Get the transaction with the highest sale price
268
       SELECT *
269 •
270
       FROM Transactions
271
     272
            SELECT MAX(SalePrice) FROM Transactions
273
      ;( ا
274
275
276
277
278
| Edit: 🚄 🖶 | Export/Import: 🖫 🐻 | Wrap Cell Content: 🖽
            PropertyID
                     BuyerID
                             SellerID
                                   AgentID SalePrice
                                                   SaleDate
▶ 301
* NULL
                     202
                                          490000.00
                                                  2024-04-05
                                                           24500.00
                            NULL
                                  NULL
                                         NULL
                                                  NULL
                                                           NULL
```

```
275
       -- 13 Stored Procedure
276
       DELIMITER //
277 •
       CREATE PROCEDURE CountPropertiesByAgent(IN agent_id INT)
278
279
           SELECT
280
                COUNT(*) AS PropertyCount,
                CONCAT(FirstName, ' ', LastName) AS AgentName
281
282
            FROM Properties P
283
            JOIN Agents A ON P.AgentID = A.AgentID
            WHERE P.AgentID = agent_id
284
285
            GROUP BY A.AgentID;
286
       END //
       DELIMITER;
287
288 •
       CALL CountPropertiesByAgent(101);
Result Grid Filter Rows:
                              Export: Wrap Cell Content: TA
  PropertyCount AgentName
) 2
             Sarah Johnson
```