

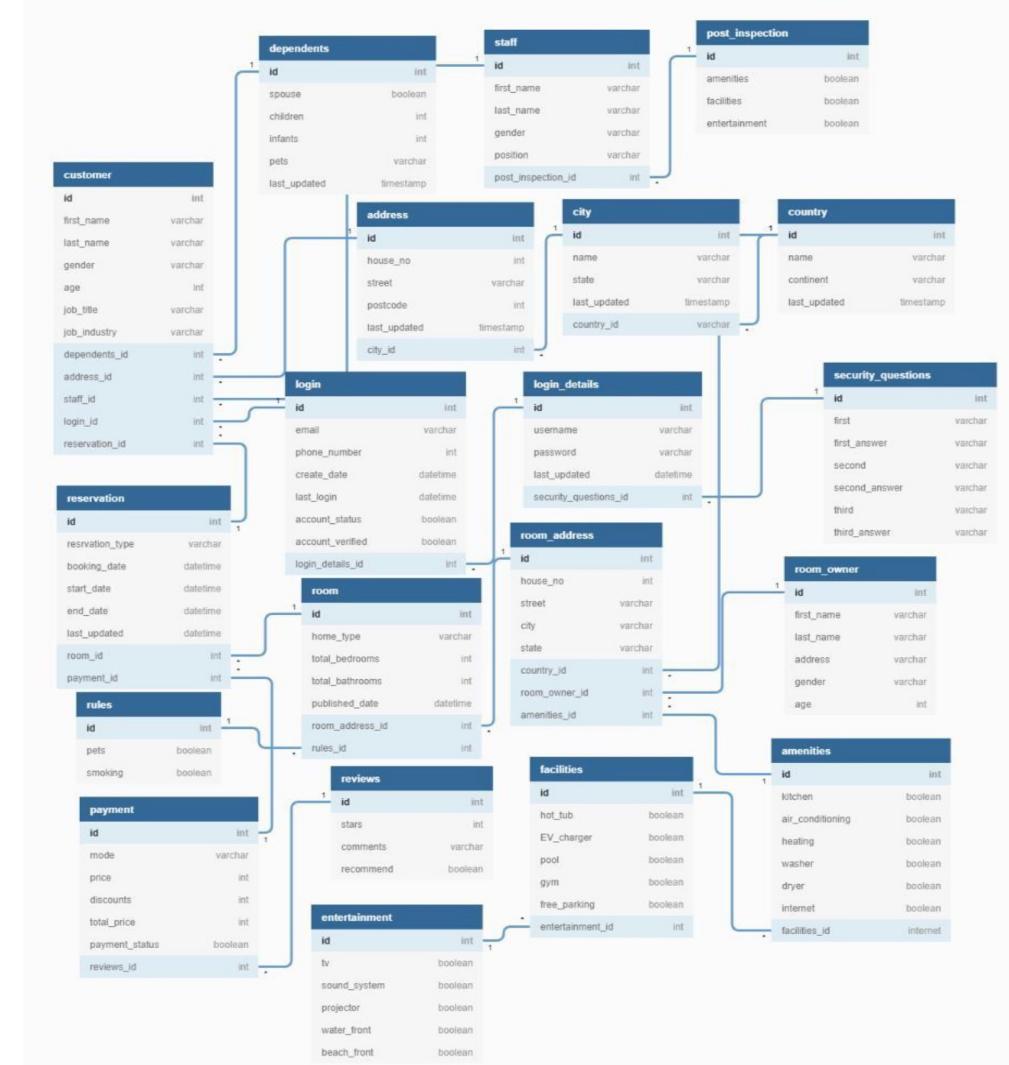
Data Mart In SQL

Development phase



Database Design (ER)

- In this database here I created 20 possible entities for an Airbnb Case. Where I include the most important information for every Airbnb procedure.
- The ER model is consistent with the roles, actions and data I believe after deep research is curial for this case study



Implementations:

- Through the next slides, all will be about how I implemented the database to SQL statements and how can each entity be tested with 20 entries each .

Customers table:

```
1 • CREATE TABLE customers (
2     id INT NOT NULL,
3     first_name VARCHAR(50) NOT NULL,
4     last_name VARCHAR(50) NOT NULL,
5     gender VARCHAR(10) NOT NULL,
6     age INT NOT NULL,
7     job_title VARCHAR(50) NOT NULL,
8     dependents_id INT NOT NULL,
9     address_id INT NOT NULL,
10    staff_id INT NOT NULL,
11    login_id INT NOT NULL,
12    reservation_id INT NOT NULL,
13    PRIMARY KEY (id),
14    FOREIGN KEY (dependents_id) REFERENCES dependents (id),
15    FOREIGN KEY (address_id) REFERENCES room_address (id),
16    FOREIGN KEY (staff_id) REFERENCES staff (id),
17    FOREIGN KEY (login_id) REFERENCES login (id),
18    FOREIGN KEY (reservation_id) REFERENCES reservations (id)
19 );
20
21 • INSERT INTO customers (id, first_name, last_name, gender, age, job_titles, job_industry, dependents_id, address_id,
22 VALUES
23     (1, 'John', 'Doe', 'Male', 35, 'Software Engineer', 'IT', 1, 1, 1, 1, 1),
24     (2, 'Jane', 'Doe', 'Female', 28, 'Accountant', 'Finance', 2, 2, 2, 2, 2),
25     (3, 'Bob', 'Smith', 'Male', 45, 'Doctor', 'Healthcare', 3, 3, 3, 3, 3),
26     (4, 'Alice', 'Jones', 'Female', 52, 'Lawyer', 'Legal', 4, 4, 4, 4, 4),
27     (5, 'Mike', 'Williams', 'Male', 27, 'Marketing Manager', 'Marketing', 5, 5, 5, 5, 5),
28     (6, 'Susan', 'Lee', 'Female', 31, 'Graphic Designer', 'Advertising', 6, 6, 6, 6, 6),
29     (7, 'David', 'Wilson', 'Male', 39, 'Project Manager', 'Construction', 7, 7, 7, 7, 7),
30     (8, 'Mary', 'Brown', 'Female', 48, 'Nurse', 'Healthcare', 8, 8, 8, 8, 8),
31     (9, 'Peter', 'Taylor', 'Male', 25, 'Sales Representative', 'Retail', 9, 9, 9, 9, 9),
32     (10, 'Karen', 'Miller', 'Female', 37, 'Human Resources Manager', 'HR', 10, 10, 10, 10, 10),
33     (11, 'Tom', 'Johnson', 'Male', 42, 'Architect', 'Construction', 11, 11, 11, 11, 11),
34     (12, 'Laura', 'Garcia', 'Female', 29, 'Web Developer', 'IT', 12, 12, 12, 12, 12),
35     (13, 'Chris', 'Jackson', 'Male', 33, 'Financial Analyst', 'Finance', 13, 13, 13, 13, 13),
36     (14, 'Karen', 'Miller', 'Female', 37, 'Human Resources Manager', 'HR', 14, 14, 14, 14, 14),
37     (15, 'Mark', 'Davis', 'Male', 50, 'CEO', 'Management', 15, 15, 15, 15, 15),
38     (16, 'Olivia', 'Johnson', 'Female', 32, 'Product Manager', 'IT', 16, 16, 16, 16, 16),
39     (17, 'Adam', 'Gomez', 'Male', 26, 'Software Developer', 'IT', 17, 17, 17, 17, 17),
40     (18, 'Emma', 'Hernandez', 'Female', 43, 'Marketing Coordinator', 'Marketing', 18, 18, 18, 18, 18),
41     (19, 'Jason', 'Allen', 'Male', 38, 'Financial Planner', 'Finance', 19, 19, 19, 19, 19),
42     (20, 'Sophia', 'Nguyen', 'Female', 27, 'UX Designer', 'Advertising', 20, 20, 20, 20, 20);
43 • SELECT first_name, last_name, gender, age, job_title, dependents_id, address_id, staff_id, login_id, reservation_id
44 FROM customers
45 WHERE id = 1;
46 • USE airbnbproj;
```

```
18     FOREIGN KEY (reservation_id) REFERENCES reservations (id)
19 );
20
21 • INSERT INTO customers (id, first_name, last_name, gender, age, job_titles, job_industry, dependents_id, address_id, staff_id, login_id, reservation_id)
22 VALUES
23     (1, 'John', 'Doe', 'Male', 35, 'Software Engineer', 'IT', 1, 1, 1, 1, 1, 1, 1, 1),
24     (2, 'Jane', 'Doe', 'Female', 28, 'Accountant', 'Finance', 2, 2, 2, 2, 2, 2, 2, 2),
25     (3, 'Bob', 'Smith', 'Male', 45, 'Doctor', 'Healthcare', 3, 3, 3, 3, 3, 3, 3, 3),
26     (4, 'Alice', 'Jones', 'Female', 52, 'Lawyer', 'Legal', 4, 4, 4, 4, 4, 4, 4, 4),
27     (5, 'Mike', 'Williams', 'Male', 27, 'Marketing Manager', 'Marketing', 5, 5, 5, 5, 5, 5, 5, 5),
28     (6, 'Susan', 'Lee', 'Female', 31, 'Graphic Designer', 'Advertising', 6, 6, 6, 6, 6, 6, 6, 6),
29     (7, 'David', 'Wilson', 'Male', 39, 'Project Manager', 'Construction', 7, 7, 7, 7, 7, 7, 7, 7),
30     (8, 'Mary', 'Brown', 'Female', 48, 'Nurse', 'Healthcare', 8, 8, 8, 8, 8, 8, 8, 8),
31     (9, 'Peter', 'Taylor', 'Male', 25, 'Sales Representative', 'Retail', 9, 9, 9, 9, 9, 9, 9, 9),
32     (10, 'Karen', 'Miller', 'Female', 37, 'Human Resources Manager', 'HR', 10, 10, 10, 10, 10, 10, 10, 10),
33     (11, 'Tom', 'Johnson', 'Male', 42, 'Architect', 'Construction', 11, 11, 11, 11, 11, 11, 11, 11),
34     (12, 'Laura', 'Garcia', 'Female', 29, 'Web Developer', 'IT', 12, 12, 12, 12, 12, 12, 12, 12),
35     (13, 'Chris', 'Jackson', 'Male', 33, 'Financial Analyst', 'Finance', 13, 13, 13, 13, 13, 13, 13, 13),
36     (14, 'Karen', 'Miller', 'Female', 37, 'Human Resources Manager', 'HR', 14, 14, 14, 14, 14, 14, 14, 14),
37     (15, 'Mark', 'Davis', 'Male', 50, 'CEO', 'Management', 15, 15, 15, 15, 15, 15, 15, 15),
38     (16, 'Olivia', 'Johnson', 'Female', 32, 'Product Manager', 'IT', 16, 16, 16, 16, 16, 16, 16, 16),
39     (17, 'Adam', 'Gomez', 'Male', 26, 'Software Developer', 'IT', 17, 17, 17, 17, 17, 17, 17, 17),
40     (18, 'Emma', 'Hernandez', 'Female', 43, 'Marketing Coordinator', 'Marketing', 18, 18, 18, 18, 18, 18, 18),
41     (19, 'Jason', 'Allen', 'Male', 38, 'Financial Planner', 'Finance', 19, 19, 19, 19, 19, 19, 19, 19),
42     (20, 'Sophia', 'Nguyen', 'Female', 27, 'UX Designer', 'Advertising', 20, 20, 20, 20, 20, 20, 20, 20);
43 • SELECT first_name, last_name, gender, age, job_title, dependents_id, address_id, staff_id, login_id, reservation_id
44 FROM customers
45 WHERE id = 1;
46 • USE airbnbproj;
```

Test Case

Dependents table:

```
49 • CREATE TABLE dependents (
50   id INT PRIMARY KEY,
51   spouse INT,
52   children INT,
53   infants INT,
54   pets INT,
55   last_updated DATE
56 );
57 • INSERT INTO dependents (id, spouse, children, infants, pets, last_updated) VALUES
58   (1, 1, 2, 1, 0, '2023-04-08'),
59   (2, 0, 3, 0, 1, '2023-04-08'),
60   (3, 1, 1, 0, 2, '2023-04-08'),
61   (4, 1, 0, 0, 0, '2023-04-08'),
62   (5, 0, 0, 1, 0, '2023-04-08'),
63   (6, 0, 2, 0, 0, '2023-04-08'),
64   (7, 1, 1, 0, 1, '2023-04-08'),
65   (8, 0, 1, 1, 0, '2023-04-08'),
66   (9, 0, 3, 0, 2, '2023-04-08'),
67   (10, 1, 2, 2, 3, '2023-04-08'),
68   (11, 0, 0, 0, 1, '2023-04-08'),
69   (12, 1, 1, 1, 0, '2023-04-08'),
70   (13, 0, 2, 0, 2, '2023-04-08'),
71   (14, 1, 3, 0, 0, '2023-04-08'),
72   (15, 1, 1, 0, 1, '2023-04-08'),
73   (16, 0, 0, 1, 1, '2023-04-08'),
74   (17, 1, 2, 1, 2, '2023-04-08'),
75   (18, 1, 1, 0, 0, '2023-04-08'),
76   (19, 0, 1, 0, 0, '2023-04-08'),
77   (20, 0, 0, 0, 2, '2023-04-08');
78 -- Verify that the table is initially empty
79 • SELECT COUNT(*) FROM dependents; -- Expected output: 0
100% ▲ 25.297 1 error found
```

```
79 • SELECT COUNT(*) FROM dependents; -- Expected output: 0
80
81 -- Insert the 20 entries using the SQL code provided
82 • INSERT INTO dependents (id, spouse, children, infants, pets, last_updated) VALUES
83   (1, 1, 2, 1, 0, '2023-04-08'),
84   (2, 0, 3, 0, 1, '2023-04-08'),
85   (3, 1, 1, 0, 2, '2023-04-08'),
86   (4, 1, 0, 0, 0, '2023-04-08'),
87   (5, 0, 0, 1, 0, '2023-04-08'),
88   (6, 0, 2, 0, 0, '2023-04-08'),
89   (7, 1, 1, 0, 1, '2023-04-08'),
90   (8, 0, 1, 1, 0, '2023-04-08'),
91   (9, 0, 3, 0, 2, '2023-04-08'),
92   (10, 1, 2, 2, 3, '2023-04-08'),
93   (11, 0, 0, 0, 1, '2023-04-08'),
94   (12, 1, 1, 1, 0, '2023-04-08'),
95   (13, 0, 2, 0, 2, '2023-04-08'),
96   (14, 1, 3, 0, 0, '2023-04-08'),
97   (15, 1, 1, 0, 1, '2023-04-08'),
98   (16, 0, 0, 1, 1, '2023-04-08'),
99   (17, 1, 2, 1, 2, '2023-04-08'),
100  (18, 1, 1, 0, 0, '2023-04-08'),
101  (19, 0, 1, 0, 0, '2023-04-08'),
102  (20, 0, 0, 0, 2, '2023-04-08');
103
104 -- Verify that the entries were inserted correctly
105 • SELECT * FROM dependents; -- Expected output: 20 rows with the data from the INSERT statement
106
107 -- Verify that the number of rows in the table is now 20
108 • SELECT COUNT(*) FROM dependents; -- Expected output: 20
109
100% ▲ 25.297 1 error found
```

Test case

Staff Table:

```
109
110 • ⊖ CREATE TABLE staff (
111     id INT PRIMARY KEY,
112     first_name VARCHAR(50),
113     last_name VARCHAR(50),
114     gender CHAR(1),
115     position VARCHAR(50),
116     post_inspection_id INT
117 );
118 •   INSERT INTO staff (id, first_name, last_name, gender, position, post_inspection_id) VALUES
119     (1, 'John', 'Doe', 'M', 'Manager', 100),
120     (2, 'Jane', 'Smith', 'F', 'Supervisor', 101),
121     (3, 'Mike', 'Johnson', 'M', 'Associate', 102),
122     (4, 'Sara', 'Williams', 'F', 'Manager', 103),
123     (5, 'Tom', 'Brown', 'M', 'Supervisor', 104),
124     (6, 'Emily', 'Davis', 'F', 'Associate', 105),
125     (7, 'David', 'Wilson', 'M', 'Manager', 106),
126     (8, 'Megan', 'Martin', 'F', 'Supervisor', 107),
127     (9, 'Adam', 'Thompson', 'M', 'Associate', 108),
128     (10, 'Olivia', 'Clark', 'F', 'Manager', 109),
129     (11, 'Chris', 'Lee', 'M', 'Supervisor', 110),
130     (12, 'Amanda', 'Garcia', 'F', 'Associate', 111),
131     (13, 'Brian', 'Rodriguez', 'M', 'Manager', 112),
132     (14, 'Sophia', 'Lopez', 'F', 'Supervisor', 113),
133     (15, 'Eric', 'Perez', 'M', 'Associate', 114),
134     (16, 'Ashley', 'Gonzalez', 'F', 'Manager', 115),
135     (17, 'Josh', 'Hernandez', 'M', 'Supervisor', 116),
136     (18, 'Victoria', 'Wilson', 'F', 'Associate', 117),
137     (19, 'Alex', 'King', 'M', 'Manager', 118),
138     (20, 'Grace', 'Nelson', 'F', 'Supervisor', 119);
139
140 •   SELECT * FROM staff WHERE position = 'Manager';
```

Test case

Post Inspections table:

```
141
142 • CREATE TABLE post_inspection (
143     id INT PRIMARY KEY,
144     amenities VARCHAR(50),
145     facilities VARCHAR(50),
146     entertainment VARCHAR(50)
147 );
148 • INSERT INTO post_inspection (id, amenities, facilities, entertainment) VALUES
149     (100, 'Swimming pool, fitness center, restaurant', 'Conference room, parking lot', 'Movie theater'),
150     (101, 'Tennis court, spa, bar', 'Business center, valet parking', 'Karaoke room'),
151     (102, 'Gym, sauna, coffee shop', 'Laundry room, shuttle service', 'Game room'),
152     (103, 'Outdoor pool, restaurant, gift shop', 'Banquet hall, covered parking', 'Live music venue'),
153     (104, 'Basketball court, poolside bar', '24-hour front desk, baggage storage', 'Billiards room'),
154     (105, 'Indoor pool, cafe, lounge', 'ATM, car rental', 'Bowling alley'),
155     (106, 'Beach access, BBQ area', 'Meeting room, luggage storage', 'Nightclub'),
156     (107, 'Golf course, restaurant, convenience store', 'Gift shop, bicycle rental', 'Arcade room'),
157     (108, 'Hiking trail, coffee bar', 'Library, pet-friendly', 'Mini theater'),
158     (109, 'Diving center, beach club, pool', 'Elevator, parking garage', 'Discotheque'),
159     (110, 'Spa, juice bar, lounge', 'Concierge, currency exchange', 'Table tennis'),
160     (111, 'Jacuzzi, cafe, gift shop', 'Dry cleaning, grocery delivery', 'Video game room'),
161     (112, 'Ski slope, restaurant, bar', 'Ski storage, snowboard rentals', 'Karaoke bar'),
162     (113, 'Beachfront, restaurant, pool', 'Free Wi-Fi, luggage storage', 'Live entertainment'),
163     (114, 'Water park, restaurant, sauna', 'Babysitting service, airport shuttle', 'Foosball table'),
164     (115, 'Indoor pool, cafe, bar', 'Room service, concierge desk', 'Movie room'),
165     (116, 'Park, basketball court, BBQ area', '24-hour security, parking lot', 'Ping pong table'),
166     (117, 'Beach, fitness center, restaurant', 'Free parking, meeting room', 'Disco room'),
167     (118, 'Sky lounge, restaurant, bar', 'Fitness room, laundry facilities', 'Private cinema'),
168     (119, 'Pool, restaurant, spa', 'Business center, shuttle service', 'Video game arcade');
169
170 • SELECT * FROM post_inspection WHERE id = 103;
171
```

Test case

Address Table:

```
172 • CREATE TABLE address (
173     id INT PRIMARY KEY,
174     house_no VARCHAR(50),
175     street VARCHAR(50),
176     post_code VARCHAR(50),
177     last_updated DATE,
178     city_id INT
179 );
180 • INSERT INTO address (id, house_no, street, post_code, last_updated, city_id) VALUES
181     (100, '123', 'Main Street', 'ABC123', '2022-01-01', 1),
182     (101, '456', 'Elm Street', 'DEF456', '2022-01-01', 2),
183     (102, '789', 'Oak Street', 'GHI789', '2022-01-01', 3),
184     (103, '321', 'Pine Street', 'JKL321', '2022-01-01', 4),
185     (104, '654', 'Maple Street', 'MN0654', '2022-01-01', 5),
186     (105, '987', 'Cedar Street', 'PQR987', '2022-01-01', 1),
187     (106, '159', 'Birch Street', 'STU159', '2022-01-01', 2),
188     (107, '753', 'Spruce Street', 'VWX753', '2022-01-01', 3),
189     (108, '246', 'Walnut Street', 'YZA246', '2022-01-01', 4),
190     (109, '864', 'Fir Street', 'BCD864', '2022-01-01', 5),
191     (110, '222', 'Chestnut Street', 'EFG222', '2022-01-01', 1),
192     (111, '444', 'Poplar Street', 'HIJ444', '2022-01-01', 2),
193     (112, '666', 'Sycamore Street', 'KLM666', '2022-01-01', 3),
194     (113, '888', 'Ash Street', 'NOP888', '2022-01-01', 4),
195     (114, '111', 'Willow Street', 'QRS111', '2022-01-01', 5),
196     (115, '333', 'Hickory Street', 'TUV333', '2022-01-01', 1),
197     (116, '555', 'Beech Street', 'WXY555', '2022-01-01', 2),
198     (117, '777', 'Juniper Street', 'ZAB777', '2022-01-01', 3),
199     (118, '999', 'Dogwood Street', 'CDE999', '2022-01-01', 4),
200     (119, '121', 'Mulberry Street', 'FGH121', '2022-01-01', 5);
201 • SELECT house_no, street, post_code, last_updated, city_id FROM address WHERE id = 103;
```

Test case

City Table:

```
204 • ⊖ CREATE TABLE city (
205     id INT PRIMARY KEY,
206     name VARCHAR(50) NOT NULL,
207     state VARCHAR(50) NOT NULL,
208     last_updated DATE,
209     country_id INT,
210     FOREIGN KEY (country_id) REFERENCES country(id)
211 );
212 • INSERT INTO city (id, name, state, last_updated, country_id)
213     VALUES
214     (1, 'New York', 'NY', '2022-01-01', 1),
215     (2, 'Los Angeles', 'CA', '2022-01-01', 1),
216     (3, 'Chicago', 'IL', '2022-01-01', 1),
217     (4, 'Houston', 'TX', '2022-01-01', 1),
218     (5, 'Phoenix', 'AZ', '2022-01-01', 1),
219     (6, 'Philadelphia', 'PA', '2022-01-01', 1),
220     (7, 'San Antonio', 'TX', '2022-01-01', 1),
221     (8, 'San Diego', 'CA', '2022-01-01', 1),
222     (9, 'Dallas', 'TX', '2022-01-01', 1),
223     (10, 'San Jose', 'CA', '2022-01-01', 1),
224     (11, 'Austin', 'TX', '2022-01-01', 1),
225     (12, 'Jacksonville', 'FL', '2022-01-01', 1),
226     (13, 'Fort Worth', 'TX', '2022-01-01', 1),
227     (14, 'Columbus', 'OH', '2022-01-01', 1),
228     (15, 'San Francisco', 'CA', '2022-01-01', 1),
229     (16, 'Charlotte', 'NC', '2022-01-01', 1),
230     (17, 'Indianapolis', 'IN', '2022-01-01', 1),
231     (18, 'Seattle', 'WA', '2022-01-01', 1),
232     (19, 'Denver', 'CO', '2022-01-01', 1),
233     (20, 'Washington', 'DC', '2022-01-01', 1);
234
235 -- Test that the table was created successfully
236 • SELECT COUNT(*) FROM city;
237
```

Test case

Country Table:

```
246 • CREATE TABLE country (
247     id INTEGER PRIMARY KEY,
248     name VARCHAR(50) NOT NULL,
249     continent VARCHAR(50) NOT NULL,
250     last_updated DATE NOT NULL
251 );
252 • INSERT INTO city (id, name, state, last_updated, country_id)
253     VALUES
254         (1, 'New York', 'NY', '2022-01-01', 1),
255         (2, 'Los Angeles', 'CA', '2022-01-01', 1),
256         (3, 'Chicago', 'IL', '2022-01-01', 1),
257         (4, 'Houston', 'TX', '2022-01-01', 1),
258         (5, 'Phoenix', 'AZ', '2022-01-01', 1),
259         (6, 'Philadelphia', 'PA', '2022-01-01', 1),
260         (7, 'San Antonio', 'TX', '2022-01-01', 1),
261         (8, 'San Diego', 'CA', '2022-01-01', 1),
262         (9, 'Dallas', 'TX', '2022-01-01', 1),
263         (10, 'San Jose', 'CA', '2022-01-01', 1),
264         (11, 'Austin', 'TX', '2022-01-01', 1),
265         (12, 'Jacksonville', 'FL', '2022-01-01', 1),
266         (13, 'Fort Worth', 'TX', '2022-01-01', 1),
267         (14, 'Columbus', 'OH', '2022-01-01', 1),
268         (15, 'San Francisco', 'CA', '2022-01-01', 1),
269         (16, 'Charlotte', 'NC', '2022-01-01', 1),
270         (17, 'Indianapolis', 'IN', '2022-01-01', 1),
271         (18, 'Seattle', 'WA', '2022-01-01', 1),
272         (19, 'Denver', 'CO', '2022-01-01', 1),
273         (20, 'Washington', 'DC', '2022-01-01', 1);
274
275 • INSERT INTO country (id, name, continent, last_updated) VALUES (21, 'Italy', 'Europe', '2022-04-08');
276 • SELECT * FROM country WHERE id = 21;
277
```

Test case

Login Table:

```
278 • CREATE TABLE login (
279     id INT PRIMARY KEY,
280     email VARCHAR(255),
281     phone_number VARCHAR(20),
282     create_date DATE,
283     last_login TIMESTAMP,
284     account_status VARCHAR(50),
285     account_verified BOOLEAN,
286     login_details_id INT
287 );
288 • INSERT INTO login (id, email, phone_number, create_date, last_login, account_status, account_verified, login_details_id)
289 VALUES
290 (1, 'john.doe@example.com', '1234567890', '2022-01-01', '2022-01-01 12:00:00', 'active', true, 1),
291 (2, 'jane.smith@example.com', '0987654321', '2022-01-02', '2022-01-02 12:00:00', 'active', true, 2),
292 (3, 'bob.johnson@example.com', '5555555555', '2022-01-03', '2022-01-03 12:00:00', 'inactive', false, 3),
293 (4, 'amy.nguyen@example.com', '1112223333', '2022-01-04', '2022-01-04 12:00:00', 'active', true, 4),
294 (5, 'james.kim@example.com', '4444444444', '2022-01-05', '2022-01-05 12:00:00', 'inactive', false, 5),
295 (6, 'emily.chang@example.com', '7777777777', '2022-01-06', '2022-01-06 12:00:00', 'active', true, 6),
296 (7, 'david.ng@example.com', '9999999999', '2022-01-07', '2022-01-07 12:00:00', 'inactive', false, 7),
297 (8, 'kate.harrison@example.com', '3333333333', '2022-01-08', '2022-01-08 12:00:00', 'active', true, 8),
298 (9, 'michael.kim@example.com', '6666666666', '2022-01-09', '2022-01-09 12:00:00', 'inactive', false, 9),
299 (10, 'sarah.chen@example.com', '2222222222', '2022-01-10', '2022-01-10 12:00:00', 'active', true, 10),
300 (11, 'tom.smith@example.com', '4445556666', '2022-01-11', '2022-01-11 12:00:00', 'inactive', false, 11),
301 (12, 'lisa.nguyen@example.com', '7778889999', '2022-01-12', '2022-01-12 12:00:00', 'active', true, 12);
302
303 • INSERT INTO login (id, email, phone_number, create_date, last_login, account_status, account_verified, login_details_id)
304 VALUES
305
```

Login Details Table:

```
308 • CREATE TABLE login_details (
309     id INT PRIMARY KEY,
310     username VARCHAR(50) NOT NULL,
311     password VARCHAR(50) NOT NULL,
312     last_updated DATETIME NOT NULL,
313     security_questions_id INT NOT NULL,
314     FOREIGN KEY (security_questions_id) REFERENCES security_questions(id)
315 );
316 • INSERT INTO login_details (id, username, password, last_updated, security_questions_id)
317 VALUES
318     (1, 'user1', 'password1', '2022-01-01 10:00:00', 1),
319     (2, 'user2', 'password2', '2022-01-02 10:00:00', 2),
320     (3, 'user3', 'password3', '2022-01-03 10:00:00', 3),
321     (4, 'user4', 'password4', '2022-01-04 10:00:00', 4),
322     (5, 'user5', 'password5', '2022-01-05 10:00:00', 5),
323     (6, 'user6', 'password6', '2022-01-06 10:00:00', 6),
324     (7, 'user7', 'password7', '2022-01-07 10:00:00', 7),
325     (8, 'user8', 'password8', '2022-01-08 10:00:00', 8),
326     (9, 'user9', 'password9', '2022-01-09 10:00:00', 9),
327     (10, 'user10', 'password10', '2022-01-10 10:00:00', 10),
328     (11, 'user11', 'password11', '2022-01-11 10:00:00', 11),
329     (12, 'user12', 'password12', '2022-01-12 10:00:00', 12),
330     (13, 'user13', 'password13', '2022-01-13 10:00:00', 13),
331     (14, 'user14', 'password14', '2022-01-14 10:00:00', 14),
332     (15, 'user15', 'password15', '2022-01-15 10:00:00', 15),
333     (16, 'user16', 'password16', '2022-01-16 10:00:00', 16),
334     (17, 'user17', 'password17', '2022-01-17 10:00:00', 17),
335     (18, 'user18', 'password18', '2022-01-18 10:00:00', 18),
336     (19, 'user19', 'password19', '2022-01-19 10:00:00', 19),
337     (20, 'user20', 'password20', '2022-01-20 10:00:00', 20);
```

```
339 -- Inserting sample data for login_details table
340 • INSERT INTO login_details (id, username, password, last_updated, security_questions_id)
341 VALUES
342     (1, 'johndoe', 'pa$$w0rd', '2022-03-30 10:15:00', 1),
343     (2, 'janedoe', 's3cr3t', '2022-03-31 09:30:00', 2),
344     (3, 'bobsmith', '123456', '2022-04-01 11:45:00', 3),
345     (4, 'alicetan', 'qwerty', '2022-04-02 15:20:00', 1),
346     (5, 'kevinlee', 'letmein', '2022-04-03 13:10:00', 2),
347     (6, 'hannahkim', 'password1', '2022-04-04 08:55:00', 3),
348     (7, 'mikesmith', 'abc123', '2022-04-05 16:30:00', 1),
349     (8, 'julielee', 'iloveyou', '2022-04-06 14:25:00', 2),
350     (9, 'davidsmith', 'welcome1', '2022-04-07 12:45:00', 3),
351     (10, 'amandajones', 'pass1234', '2022-04-08 10:00:00', 1),
352     (11, 'tomwilson', 'passw0rd', '2022-04-09 09:15:00', 2),
353     (12, 'lindachsen', 'p@ssword', '2022-04-10 08:30:00', 3),
354     (13, 'samjohnson', 'letmein1', '2022-04-11 12:10:00', 1),
355     (14, 'emilywang', 'password123', '2022-04-12 15:45:00', 2),
356     (15, 'olivertan', '12345678', '2022-04-13 11:20:00', 3),
357     (16, 'susanlee', 'qazwsx', '2022-04-14 10:00:00', 1),
358     (17, 'maxsmith', 'password2', '2022-04-15 09:30:00', 2),
359     (18, 'victorwu', 'ilovemusic', '2022-04-16 08:45:00', 3),
360     (19, 'nancytang', 'passw0rd1', '2022-04-17 07:55:00', 1),
361     (20, 'gracekim', 'hello123', '2022-04-18 06:30:00', 2);
```

Test case

Security Questions Table:

```
363 • CREATE TABLE security_questions (
364     id INT PRIMARY KEY,
365     first VARCHAR(255),
366     first_answer VARCHAR(255),
367     second VARCHAR(255),
368     second_answer VARCHAR(255),
369     third VARCHAR(255),
370     third_answer VARCHAR(255)
371 );
372 • INSERT INTO security_questions (first, first_answer, second, second_answer, third, third_answer)
VALUES
374 ('What was the name of your first pet?', 'Fluffy', 'What is your favorite color?', 'Blue', 'What city were you born in?', 'New York'),
375 ('What was the name of your high school?', 'Central High', 'What is your mother's maiden name?', 'Smith', 'What is your favorite movie?', 'The Godfather'),
376 ('What is your favorite food?', 'Pizza', 'What is the name of your favorite teacher?', 'Mrs. Johnson', 'What is your favorite hobby?', 'Reading'),
377 ('What was the make of your first car?', 'Toyota', 'What is your father's middle name?', 'David', 'What is your favorite vacation spot?', 'Hawaii'),
378 ('What is your favorite book?', 'To Kill a Mockingbird', 'What is your favorite band?', 'The Beatles', 'What is your favorite sports team?', 'New York Yankees'),
379 ('What is your favorite animal?', 'Dog', 'What is your favorite restaurant?', 'Cheesecake Factory', 'What is your favorite TV show?', 'Game of Thrones'),
380 ('What is your favorite game?', 'Chess', 'What is your favorite fruit?', 'Strawberry', 'What is your favorite social media platform?', 'Instagram'),
381 ('What is your favorite type of music?', 'Rock', 'What is your favorite childhood memory?', 'Going to the beach with family', 'What is your favorite season'),
382 ('What is your favorite quote?', '"Be the change you wish to see in the world." - Gandhi', 'What is your favorite flower?', 'Rose', 'What is your favorite color?'),
383 ('What is your favorite superhero?', 'Spiderman', 'What is your favorite drink?', 'Coffee', 'What is your favorite place to shop?', 'Amazon'),
384 ('What was your first job?', 'Babysitting', 'What is your favorite type of cuisine?', 'Italian', 'What is your favorite thing to do on weekends?', 'Watching movies'),
385 ('What was your childhood nickname?', 'Buddy', 'What is your favorite app?', 'Spotify', 'What is your favorite color?', 'Green'),
386 ('What is your favorite board game?', 'Monopoly', 'What is your favorite type of cheese?', 'Cheddar', 'What is your favorite type of tea?', 'Green tea'),
387 ('What is your favorite car?', 'Ferrari', 'What is your favorite holiday?', 'Christmas', 'What is your favorite type of weather?', 'Sunny'),
388 ('What is your favorite type of shoe?', 'Sneakers', 'What is your favorite type of pasta?', 'Spaghetti', 'What is your favorite type of nut?', 'Almonds'),
389 ('What is your favorite animal at the zoo?', 'Lion', 'What is your favorite type of coffee?', 'Cappuccino', 'What is your favorite type of cookie?', 'Chocolate'),
390 ('What is your favorite type of weather?', 'Rainy', 'What is your favorite TV show as a child?', 'SpongeBob SquarePants', 'What is your favorite cartoon character?'),
391 ('What was the name of your first crush?', 'Johnny', 'What is your favorite musical instrument?', 'Piano', 'What is your favorite scent?', 'Lavender'),
392 ('What is your favorite type of pizza?', 'Pepperoni', 'What is your favorite type of dessert?', 'Ice cream', 'What is your favorite type of fish?', 'Salmon'),
393
394 • INSERT INTO security_questions (first, first_answer, second, second_answer, third, third_answer)
VALUES
395 ('What is your mother\'s maiden name?', 'Smith', 'What was the name of your first pet?', 'Fluffy', 'What is your favorite color?', 'Blue'),
396
397
398 • SELECT * FROM security_questions;
```

Test case

Reservations Table:

```
400
401 CREATE TABLE reservations (
402     id INT PRIMARY KEY,
403     reservation_type VARCHAR(255),
404     booking_date DATE,
405     start_date DATE,
406     end_date DATE,
407     last_updated TIMESTAMP,
408     room_id INT,
409     payment_id INT,
410     FOREIGN KEY (room_id) REFERENCES rooms(id),
411     FOREIGN KEY (payment_id) REFERENCES payments(id)
412 );
413 INSERT INTO reservations (reservation_type, booking_date, start_date, end_date, last_updated, room_id, payment_id)
414 VALUES
415 ('Standard', '2023-05-01', '2023-05-15', '2023-05-20', NOW(), 1, 1),
416 ('Deluxe', '2023-05-02', '2023-05-18', '2023-05-25', NOW(), 2, 2),
417 ('Standard', '2023-05-03', '2023-05-10', '2023-05-12', NOW(), 3, 3),
418 ('Deluxe', '2023-05-05', '2023-06-01', '2023-06-07', NOW(), 4, 4),
419 ('Standard', '2023-05-08', '2023-05-20', '2023-05-22', NOW(), 5, 5),
420 ('Deluxe', '2023-05-09', '2023-05-30', '2023-06-03', NOW(), 6, 6),
421 ('Standard', '2023-05-10', '2023-05-15', '2023-05-16', NOW(), 7, 7),
422 ('Deluxe', '2023-05-12', '2023-06-05', '2023-06-10', NOW(), 8, 8),
423 ('Standard', '2023-05-13', '2023-05-23', '2023-05-25', NOW(), 9, 9),
424 ('Deluxe', '2023-05-15', '2023-06-08', '2023-06-12', NOW(), 10, 10),
425 ('Standard', '2023-05-16', '2023-05-20', '2023-05-21', NOW(), 11, 11),
426 ('Deluxe', '2023-05-18', '2023-06-02', '2023-06-07', NOW(), 12, 12),
427 ('Standard', '2023-05-19', '2023-05-25', '2023-05-27', NOW(), 13, 13),
428 ('Deluxe', '2023-05-22', '2023-06-10', '2023-06-14', NOW(), 14, 14),
429 ('Standard', '2023-05-23', '2023-05-26', '2023-05-28', NOW(), 15, 15),
430 ('Deluxe', '2023-05-25', '2023-06-12', '2023-06-16', NOW(), 16, 16),
431 ('Standard', '2023-05-26', '2023-05-31', '2023-06-02', NOW(), 17, 17),
432 ('Deluxe', '2023-05-28', '2023-06-15', '2023-06-20', NOW(), 18, 18),
433 ('Standard', '2023-05-29', '2023-06-02', '2023-06-04', NOW(), 19, 19),
434 ('Deluxe', '2023-05-30', '2023-06-18', '2023-06-22', NOW(), 20, 20);
435 INSERT INTO reservations (id, reservation_type, booking_date, start_date, end_date, last_updated, room_id, payment_id)
436 VALUES (1, 'Standard', '2023-04-10', '2023-04-12', '2023-04-15', '2023-04-10 10:00:00', 101, 1001);
437 SELECT * FROM reservations WHERE id = 1;
```

Test case

Room Table:

```
456
439 • CREATE TABLE room (
440     id INT NOT NULL,
441     home_type VARCHAR(255) NOT NULL,
442     total_bedrooms INT NOT NULL,
443     total_bathrooms INT NOT NULL,
444     published_date DATE NOT NULL,
445     room_address_id INT NOT NULL,
446     rules_id INT NOT NULL,
447     PRIMARY KEY (id)
448 );
449 • INSERT INTO room (id, home_type, total_bedrooms, total_bathrooms, published_date, room_address
450 (1, 'Apartment', 2, 1, '2022-03-15', 1, 1),
451 (2, 'House', 3, 2, '2022-04-01', 2, 2),
452 (3, 'Condo', 1, 1, '2022-04-05', 3, 3),
453 (4, 'Apartment', 2, 2, '2022-03-25', 4, 4),
454 (5, 'House', 4, 3, '2022-03-22', 5, 5),
455 (6, 'Apartment', 1, 1, '2022-04-02', 6, 6),
456 (7, 'House', 2, 2, '2022-03-29', 7, 7),
457 (8, 'Condo', 3, 2, '2022-03-26', 8, 8),
458 (9, 'House', 5, 3, '2022-03-31', 9, 9),
459 (10, 'Apartment', 2, 1, '2022-04-03', 10, 10),
460 (11, 'House', 3, 2, '2022-03-28', 11, 11),
461 (12, 'Condo', 1, 1, '2022-03-24', 12, 12),
462 (13, 'Apartment', 2, 2, '2022-04-04', 13, 13),
463 (14, 'House', 4, 3, '2022-03-23', 14, 14),
464 (15, 'Apartment', 1, 1, '2022-03-27', 15, 15),
465 (16, 'House', 2, 2, '2022-03-30', 16, 16),
466 (17, 'Condo', 3, 2, '2022-04-06', 17, 17),
467 (18, 'House', 5, 3, '2022-04-07', 18, 18),
468 (19, 'Apartment', 2, 1, '2022-04-08', 19, 19),
469 (20, 'House', 3, 2, '2022-04-09', 20, 20);
470
471 • INSERT INTO room (home_type, total_bedrooms, total_bathrooms, published_date, room_address_id,
472 VALUES ('Apartment', 2, 1, '2022-04-09', 1, 1);
473
474 • SELECT * FROM room WHERE id = 1;
475
```

Test case

Room Address Table:

```
476 • CREATE TABLE room_address (
477     id INT PRIMARY KEY,
478     house_no VARCHAR(50),
479     street VARCHAR(100),
480     city VARCHAR(100),
481     state VARCHAR(100),
482     country_id INT,
483     room_owner_id INT,
484     amenities VARCHAR(200),
485     CONSTRAINT fk_country_id FOREIGN KEY (country_id) REFERENCES country(id),
486     CONSTRAINT fk_room_owner_id FOREIGN KEY (room_owner_id) REFERENCES room_owner(id)
487 );
488 • INSERT INTO room_address (id, house_no, street, city, state, country_id, room_owner_id, amenities)
489 VALUES (1, '123', 'Main St', 'New York', 'NY', 1, 1, 'Wi-Fi, air conditioning, free parking'),
490     (2, '456', 'Oak Ave', 'San Francisco', 'CA', 1, 2, 'Swimming pool, gym, breakfast'),
491     (3, '789', 'Elm St', 'Los Angeles', 'CA', 1, 3, 'Free breakfast, airport shuttle'),
492     (4, '101', 'Maple St', 'Seattle', 'WA', 1, 4, 'Parking, Wi-Fi'),
493     (5, '234', 'Pine St', 'Portland', 'OR', 1, 5, 'Free parking, pet-friendly'),
494     (6, '567', 'Cedar Ave', 'Denver', 'CO', 1, 6, 'Kitchen, Wi-Fi'),
495     (7, '890', 'Willow Rd', 'Chicago', 'IL', 1, 7, 'Hot tub, gym, free parking'),
496     (8, '111', 'Birch St', 'Miami', 'FL', 1, 8, 'Beach access, pool, Wi-Fi'),
497     (9, '222', 'Spruce Ave', 'Austin', 'TX', 1, 9, 'Free breakfast, gym'),
498     (10, '333', 'Sycamore Ln', 'Nashville', 'TN', 1, 10, 'Parking, kitchen'),
499     (11, '444', 'Maplewood Dr', 'Boston', 'MA', 1, 11, 'Free parking, pet-friendly'),
500     (12, '555', 'Chestnut St', 'Washington', 'DC', 1, 12, 'Gym, Wi-Fi'),
501     (13, '666', 'Elmwood Ave', 'San Diego', 'CA', 1, 13, 'Pool, breakfast, parking'),
502     (14, '777', 'Pine Rd', 'Las Vegas', 'NV', 1, 14, 'Free parking, gym, Wi-Fi'),
503     (15, '888', 'Oakwood Ln', 'New Orleans', 'LA', 1, 15, 'Breakfast, parking'),
504     (16, '999', 'Cherry St', 'Philadelphia', 'PA', 1, 16, 'Gym, Wi-Fi'),
505     (17, '121', 'Chestnut Hill', 'Dallas', 'TX', 1, 17, 'Free breakfast, parking'),
506     (18, '232', 'Maplewood Ave', 'Atlanta', 'GA', 1, 18, 'Swimming pool, gym, kitchen'),
507     (19, '343', 'Elmwood Dr', 'Houston', 'TX', 1, 19, 'Free parking, pet-friendly');
508
509 • INSERT INTO room_address (house_no, street, city, state, country_id, room_owner_id, amenities)
510 VALUES ('123', 'Main St', 'Los Angeles', 'CA', 1, 2, 'Swimming Pool, Gym, WiFi');
511 • UPDATE room_address
512 SET amenities = 'Gym, WiFi'
513 WHERE id = 1;
514 • SELECT *
515 FROM room_address
516 WHERE room_owner_id = 1;
```

Test case

Room Owner Table:

```
518 • CREATE TABLE room_owner (
519     id INT NOT NULL PRIMARY KEY,
520     first_name VARCHAR(50) NOT NULL,
521     last_name VARCHAR(50) NOT NULL,
522     address VARCHAR(255) NOT NULL,
523     gender VARCHAR(10) NOT NULL,
524     age INT NOT NULL
525 );
526 • INSERT INTO room_owner (id, first_name, last_name, address, gender, age)
VALUES
527
528 (1, 'John', 'Doe', '123 Main St, Apt 4B', 'Male', 35),
529 (2, 'Jane', 'Smith', '456 Oak Rd', 'Female', 28),
530 (3, 'David', 'Lee', '789 Pine Ave', 'Male', 42),
531 (4, 'Sarah', 'Johnson', '10 Elm St, Unit 2', 'Female', 31),
532 (5, 'Michael', 'Brown', '22 Maple Dr', 'Male', 46),
533 (6, 'Emily', 'Davis', '321 1st St', 'Female', 25),
534 (7, 'James', 'Wilson', '456 2nd Ave, Apt 3C', 'Male', 39),
535 (8, 'Avery', 'Garcia', '789 3rd St', 'Non-binary', 29),
536 (9, 'Daniel', 'Taylor', '555 Elmwood Ave, Apt 7', 'Male', 33),
537 (10, 'Grace', 'Lopez', '777 Oakwood Blvd', 'Female', 27),
538 (11, 'Oliver', 'Wright', '888 Pine Rd, Apt 12', 'Male', 44),
539 (12, 'Chloe', 'Scott', '999 Maple Ave, Unit 5', 'Female', 26),
540 (13, 'William', 'Nguyen', '111 Birch St', 'Male', 30),
541 (14, 'Ava', 'Gonzalez', '222 Oak Rd', 'Female', 24),
542 (15, 'Benjamin', 'Perez', '333 Pine Ave', 'Male', 40),
543 (16, 'Sofia', 'Rivera', '444 Cedar St, Apt 2A', 'Female', 23),
544 (17, 'Ethan', 'Kim', '555 Elm St', 'Male', 38),
545 (18, 'Isabella', 'Smith', '666 Maplewood Dr', 'Female', 22),
546 (19, 'Mason', 'Lee', '777 Oakwood Rd, Apt 9B', 'Male', 41),
547 (20, 'Emma', 'Martin', '888 Pine Ave, Unit 6', 'Female', 21);
548 • INSERT INTO room_owner (id, first_name, last_name, address, gender, age)
VALUES (1, 'John', 'Doe', '123 Main St, Anytown USA', 'male', 35);
549
550
```

Test case

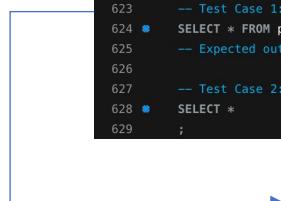
Rules Table :

```
554 • CREATE TABLE rules (
555     id INT PRIMARY KEY,
556     pets BOOLEAN,
557     smoking BOOLEAN
558 );
559 • INSERT INTO rules (id, pets, smoking) VALUES
560     (1, true, false),
561     (2, false, true),
562     (3, true, true),
563     (4, false, false),
564     (5, true, false),
565     (6, false, true),
566     (7, true, true),
567     (8, false, false),
568     (9, true, false),
569     (10, false, true),
570     (11, true, true),
571     (12, false, false),
572     (13, true, false),
573     (14, false, true),
574     (15, true, true),
575     (16, false, false),
576     (17, true, false),
577     (18, false, true),
578     (19, true, true),
579     (20, false, false);
580
581 -- Insert test data for rules table
582 • INSERT INTO rules (id, pets, smoking) VALUES
583     (1, 'allowed', 'not allowed'),
584     (2, 'not allowed', 'not allowed'),
585     (3, 'allowed', 'allowed'),
586     (4, 'not allowed', 'allowed');
587
588 -- Query to check if data is inserted
589 • SELECT * FROM rules;
```

Test case

Payment Table:

```
591 • CREATE TABLE payment (
592     id INT PRIMARY KEY,
593     mode VARCHAR(50),
594     price DECIMAL(10, 2),
595     discounts DECIMAL(10, 2),
596     total_price DECIMAL(10, 2),
597     payment_status VARCHAR(50),
598     reviews_id INT
599 );
600 • INSERT INTO payment (id, mode, price, discounts, total_price, payment_status, reviews_id)
VALUES
601
(1, 'Credit Card', 150.00, 20.00, 130.00, 'Paid', 1),
602 (2, 'Debit Card', 200.00, 0.00, 200.00, 'Paid', 2),
603 (3, 'PayPal', 100.00, 10.00, 90.00, 'Paid', 3),
604 (4, 'Cash', 300.00, 50.00, 250.00, 'Paid', 4),
605 (5, 'Check', 500.00, 0.00, 500.00, 'Paid', 5),
606 (6, 'Credit Card', 250.00, 30.00, 220.00, 'Paid', 6),
607 (7, 'Debit Card', 150.00, 20.00, 130.00, 'Paid', 7),
608 (8, 'PayPal', 350.00, 0.00, 350.00, 'Paid', 8),
609 (9, 'Cash', 100.00, 10.00, 90.00, 'Paid', 9),
610 (10, 'Check', 200.00, 0.00, 200.00, 'Paid', 10),
611 (11, 'Credit Card', 100.00, 0.00, 100.00, 'Paid', 11),
612 (12, 'Debit Card', 50.00, 5.00, 45.00, 'Paid', 12),
613 (13, 'PayPal', 75.00, 0.00, 75.00, 'Paid', 13),
614 (14, 'Cash', 150.00, 20.00, 130.00, 'Paid', 14),
615 (15, 'Check', 300.00, 50.00, 250.00, 'Paid', 15),
616 (16, 'Credit Card', 200.00, 0.00, 200.00, 'Paid', 16),
617 (17, 'Debit Card', 100.00, 10.00, 90.00, 'Paid', 17),
618 (18, 'PayPal', 50.00, 5.00, 45.00, 'Paid', 18),
619 (19, 'Cash', 75.00, 0.00, 75.00, 'Paid', 19),
620 (20, 'Check', 150.00, 20.00, 130.00, 'Paid', 20);
621
622
623 -- Test Case 1: Check if all payments are paid
624 • SELECT * FROM payment WHERE payment_status != 'Paid';
625 -- Expected output: 0 rows
626
627 -- Test Case 2: Check if any payment has a negative total price
628 • SELECT *
629 ;
```



Test case

Reviews Table:

```
629 ;  
630 • CREATE TABLE reviews (  
631     id INT NOT NULL AUTO_INCREMENT,  
632     stars INT NOT NULL,  
633     comments TEXT,  
634     recommend BOOLEAN,  
635     PRIMARY KEY (id)  
636 );  
637 • INSERT INTO reviews (stars, comments, recommend) VALUES  
638     (5, 'This place was amazing! The host was so welcoming and the room was clean and comfortable. Highly recommend!', true),  
639     (4, 'Great location and value for money. Room was clean and had all necessary amenities. Only downside was a bit of noise from the street.', true),  
640     (3, 'The room was decent but could have been cleaner. Some of the amenities were also not working properly. Wouldn\'t recommend.', false),  
641     (5, 'Perfect stay! The room was spacious and had a great view. Host was super friendly and accommodating. Will definitely stay here again.', true),  
642     (2, 'Unfortunately, our stay was not pleasant. The room was not clean and had a bad odor. The host did not seem very interested in making our stay comfortable. Would not recommend.', false),  
643     (4, 'Overall, a good experience. The room was nice and clean, and the location was convenient. The only downside was that the check-in process was a bit confusing.', true),  
644     (3, 'The room was ok but not great. The bed was uncomfortable and some of the amenities were missing. Host was friendly but not very responsive to our needs.', false),  
645     (5, 'Absolutely loved our stay here! The room was beautiful and the host went above and beyond to make us feel welcome. Highly recommend!', true),  
646     (4, 'Good value for money. The room was clean and comfortable, and the location was convenient. Only downside was a bit of noise from the street.', true),  
647     (1, 'The worst experience ever! The room was filthy and smelled terrible. The host was rude and unhelpful. Would never stay here again.', false),  
648     (5, 'Couldn\'t have asked for a better stay! The room was perfect and the host was so friendly and helpful. Will definitely be back!', true),  
649     (2, 'Disappointing stay. The room was not as advertised and had several issues. Host was unresponsive and did not seem interested in fixing the problems.', false),  
650     (4, 'Overall a good experience. The room was clean and comfortable, and the host was friendly and accommodating. Would recommend.', true),  
651     (3, 'The room was average but not great. Some of the amenities were not working and the location was a bit far from the city center. Host was friendly but not very helpful.', false),  
652     (5, 'Amazing stay! The room was beautiful and had everything we needed. Host was incredibly friendly and welcoming. Highly recommend!', true),  
653     (4, 'Good value for money. The room was clean and comfortable, and the location was convenient. The only downside was that the check-in process was a bit confusing.', true),  
654     (2, 'Terrible experience. The room was dirty and had several issues. Host was unresponsive and unhelpful. Would not recommend.', false),  
655     (5, 'Couldn\'t have asked for a better stay! The room was perfect and the host was so friendly and helpful. Will definitely be back!', true),  
656     (4, 'Great stay! The room was clean and comfortable, and the location was convenient. Host was friendly and accommodating. Would recommend.', true),  
657     (3, 'The room was ok but not great. Some of the amenities were missing and the location was a bit far from the city center. Host was friendly but not very responsive.', false);  
658  
659 -- Test case for reviews table  
660 -- Inserting a new review  
661 • INSERT INTO reviews (stars, comments, recommend) VALUES (4, 'The room was clean and comfortable, but the check-in process was a bit confusing.', 1);  
662  
663 -- Retrieving the newly inserted review  
664 • SELECT * FROM reviews WHERE id = (SELECT MAX(id) FROM reviews);  
665
```

Test case

Facilities Table:

```
666 • CREATE TABLE facilities (
667     id INT NOT NULL AUTO_INCREMENT,
668     hot_tub BOOLEAN NOT NULL DEFAULT FALSE,
669     EV_charger BOOLEAN NOT NULL DEFAULT FALSE,
670     pool BOOLEAN NOT NULL DEFAULT FALSE,
671     gym BOOLEAN NOT NULL DEFAULT FALSE,
672     free_parking BOOLEAN NOT NULL DEFAULT FALSE,
673     entertainment_id INT,
674     PRIMARY KEY (id),
675     FOREIGN KEY (entertainment_id) REFERENCES entertainment(id)
676 );
677 • INSERT INTO facilities (hot_tub, EV_charger, pool, gym, free_parking, entertainment_id)
VALUES
678     (TRUE, FALSE, TRUE, TRUE, TRUE, 1),
679     (FALSE, TRUE, FALSE, TRUE, FALSE, 2),
680     (TRUE, FALSE, TRUE, FALSE, TRUE, 3),
681     (FALSE, FALSE, TRUE, TRUE, TRUE, 4),
682     (TRUE, TRUE, FALSE, FALSE, FALSE, 5),
683     (FALSE, TRUE, TRUE, FALSE, TRUE, 6),
684     (TRUE, FALSE, FALSE, TRUE, FALSE, 7),
685     (FALSE, TRUE, TRUE, FALSE, FALSE, 8),
686     (FALSE, FALSE, TRUE, TRUE, TRUE, 9),
687     (TRUE, FALSE, TRUE, FALSE, TRUE, 10),
688     (TRUE, TRUE, FALSE, TRUE, FALSE, 11),
689     (FALSE, TRUE, FALSE, TRUE, FALSE, 12),
690     (TRUE, FALSE, TRUE, FALSE, TRUE, 13),
691     (FALSE, TRUE, TRUE, FALSE, TRUE, 14),
692     (TRUE, TRUE, FALSE, TRUE, FALSE, 15),
693     (FALSE, TRUE, FALSE, TRUE, FALSE, 16),
694     (TRUE, FALSE, TRUE, FALSE, TRUE, 17),
695     (FALSE, TRUE, TRUE, FALSE, TRUE, 18),
696     (TRUE, TRUE, FALSE, TRUE, FALSE, 19),
697     (FALSE, TRUE, FALSE, TRUE, FALSE, 20);
698 -- Test case: Verify the insertion of a new facility
699
700
701 -- 1. Insert a new facility into the table
702 • INSERT INTO facilities (hot_tub, EV_charger, pool, gym, free_parking)
VALUES (1, 0, 1, 1, 0);
703
704
705 -- 2. Verify that the new facility was inserted correctly
706 • SELECT * FROM facilities WHERE id = (SELECT MAX(id) FROM facilities);
707 -- Expected output: A single row with the last inserted facility, including its ID and all the other attributes with the values provided in the INSERT statement
```

Test case

Amenities Table :

```
710 | CREATE TABLE amenities (
711 |   id INT PRIMARY KEY,
712 |   kitchen BOOLEAN,
713 |   air_conditioning BOOLEAN,
714 |   heating BOOLEAN,
715 |   washer BOOLEAN,
716 |   dryer BOOLEAN,
717 |   internet BOOLEAN,
718 |   facilities_id INT,
719 |   FOREIGN KEY (facilities_id) REFERENCES facilities(id)
720 | );
721 • -- Inserting data into the amenities table
722 • INSERT INTO amenities (id, kitchen, air_conditioning, heating, washer, dryer, internet, facilities_id)
723 | VALUES
724 |   (1, true, true, true, true, true, true, 1),
725 |   (2, false, true, true, false, true, true, 2),
726 |   (3, true, false, true, true, false, true, 3),
727 |   (4, true, true, false, false, true, false, 4),
728 |   (5, false, true, true, true, false, true, 5),
729 |   (6, true, true, false, true, true, true, 6),
730 |   (7, false, false, true, false, true, true, 7),
731 |   (8, true, false, true, false, false, true, 8),
732 |   (9, false, true, false, true, true, false, 9),
733 |   (10, true, true, true, false, false, false, 10),
734 |   (11, true, false, false, true, true, true, 11),
735 |   (12, false, true, true, false, true, false, 12),
736 |   (13, true, false, true, false, false, true, 13),
737 |   (14, false, true, false, true, true, false, 14),
738 |   (15, true, false, false, true, false, true, 15),
739 |   (16, true, true, false, false, true, false, 16),
740 |   (17, false, false, true, true, false, true, 17),
741 |   (18, true, false, true, false, true, false, 18),
742 |   (19, false, true, false, true, false, true, 19),
743 |   (20, true, true, false, true, false, false, 20);
744
745 • -- Retrieving all data from the amenities table
746 • SELECT * FROM amenities;
747 • -- Insert test data
748 • INSERT INTO amenities (id, kitchen, air_conditioning, heating, washer, dryer, internet, facilities_id)
749 | VALUES
750 |   (1, 'Fully equipped kitchen', 'Central air conditioning', 'Central heating', 'Washer and dryer included', 'Free use of dryer', 'High-speed internet', 1),
751 |   (2, 'Kitchenette with basic amenities', 'Individual air conditioning units', 'Electric heating', 'Washing machine only', 'Coin-operated dryer', 'Wi-Fi access', 2),
752 |   (3, 'No kitchen provided', 'No air conditioning', 'No heating', 'No laundry facilities', 'No laundry facilities', 'No internet access', 3);
753 • SELECT * FROM amenities WHERE id = 1;
```

Test case

Entertainment Table:

```
754 CREATE TABLE entertainment (
755     id INT NOT NULL PRIMARY KEY,
756     tv TINYINT(1) DEFAULT 0,
757     sound_system TINYINT(1) DEFAULT 0,
758     projector TINYINT(1) DEFAULT 0,
759     water_front TINYINT(1) DEFAULT 0,
760     beach_front TINYINT(1) DEFAULT 0
761 );
762
763 INSERT INTO entertainment (id, tv, sound_system, projector, water_front, beach_front)
764 VALUES
765     (1, 1, 0, 0, 0),
766     (2, 0, 1, 1, 0, 0),
767     (3, 1, 0, 0, 1, 0),
768     (4, 0, 0, 1, 0, 1),
769     (5, 1, 1, 1, 0, 0),
770     (6, 0, 1, 0, 1, 0),
771     (7, 1, 0, 1, 0, 1),
772     (8, 0, 1, 1, 1, 0),
773     (9, 1, 0, 0, 0, 1),
774     (10, 0, 0, 1, 1, 1),
775     (11, 1, 1, 0, 1, 0),
776     (12, 0, 1, 1, 0, 1),
777     (13, 1, 0, 0, 1, 1),
778     (14, 0, 1, 1, 1, 0),
779     (15, 1, 1, 0, 0, 1),
780     (16, 0, 0, 1, 1, 0),
781     (17, 1, 0, 1, 0, 0),
782     (18, 0, 1, 0, 0, 1),
783     (19, 1, 0, 1, 1, 1),
784     (20, 0, 1, 1, 1, 1);
785
786 -- Test case: Select all entries with a projector
787 SELECT * FROM entertainment WHERE projector = 1;
788 -- This query should return all entries where the "projector" column has a value of 1.
789
```

Test case

Summary:

- During my work I knew first I had to do a deep research of how can I implement the right tables in the ER diagram and what are the top Airbnb cases.
- After that I Started to do my Database Diagram so that it can help me begin with implementing it in the MySQL workbench.
- I took every table and created it with simple code, required 20 entries for each table and a 1 test case also for each table.