CS 7330 Project Part 2

MySQL 8.0.27
Using Sequel Ace as work bench on Mac

From Part 1:

You are to *__design__* a database to keep track of building inspections required by the department of Faulty or Damaged Buildings (FODB). Implementation will be done in part 2.

Part 2 Requirements:

Complete the implementation of your design and populate your database with the provided data. Then, develop and execute queries to determine answers to the following questions:

1. List all buildings (building#, address, type) that have not passed a final (FNL, FN2, FN3) inspection

    a.

```
1
2  -- -- -- Project Queries -- -- --
3  -- List all buildings (building#, address, type) that have not passed a final (FNL, FN2, FN3) inspection.
4  select b.Address from Building b
5  join Inspection i on i.Address = b.Address
6  where i.Type in ('FNL', 'FN2', 'FN3') AND i.InspectionResults = 1;
7
```

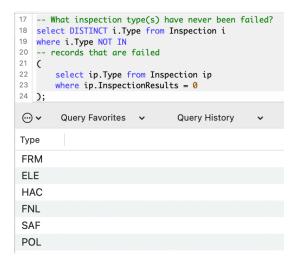| ⊙˅   Query Favorites   ˅   Query History   ˅ |
| --- |
| Address |
| 300 Oak St., Dallas, TX |
| 302 Oak St., Dallas, TX |
| 100 Winding Wood, Carrollton, TX |

2. List the id and name of inspectors who have given at least one failing score.

   a.

```
8   -- List the id and name of inspectors
9   select i.EmployeeID, i.Name from Inspector i
10  -- who have given 'at least one failing score'
11  where EXISTS
12  (
13      select NULL from Inspection ip
14      where i.EmployeeID = ip.EmployeeID AND ip.Score < 75
15  );
```

⊙ ∨	Query Favorites ∨	Query History ∨

EmployeeID	Name	
102	Inspector-2	

3. What inspection type(s) have never been failed?

   a.

```
17  -- What inspection type(s) have never been failed?
18  select DISTINCT i.Type from Inspection i
19  where i.Type NOT IN
20  -- records that are failed
21  (
22      select ip.Type from Inspection ip
23      where ip.InspectionResults = 0
24  );
```

⊙ ∨	Query Favorites ∨	Query History ∨

Type	
FRM	
ELE	
HAC	
FNL	
SAF	
POL	

4. What is the total cost of all inspections for builder 12345?

   a.

```
26  -- What is the total cost of all inspections for builder 12345?
27  select b.LicenseID, b.Name, SUM(i.Cost) TotalCost from Builder b
28  join Inspection i on i.LicenseID = b.LicenseID
29  where b.LicenseID = 12345;
```

⊙ ∨	Query Favorites ∨	Query History ∨

LicenseID	Name	TotalCost	
12345	Builder-1	1400	

5. What is the average score for all inspections performed by Inspector 102?

   a.

   ```
   31  -- What is the average score for all inspections performed by Inspector 102?
   32  select ip.EmployeeID, ip.Name, AVG(i.Score) AverageScore from Inspector ip |
   33  join Inspection i on i.EmployeeID = ip.EmployeeID
   34  where ip.EmployeeID = 102;
   ```

   | ⊙∨   Query Favorites   ∨   Query History   ∨ |

EmployeeID	Name	AverageScore
102	Inspector-2	75.0000

6. How much revenue did FODB receive for inspections during October?

   a.

   ```
   36  -- How much revenue did FODB receive for inspections during October?
   37  select SUM(i.Cost) Revenue from Inspection i
   38  where month(i.InspectionDate) = 10;
   ```

   | ⊙∨   Query Favorites   ∨   Query History   ∨ |

Revenue
1550

7. How much revenue was generated this year by inspectors with more than 15 years seniority?

   ```
   40  -- How much revenue was generated this year by inspectors with more than 15 years seniority?
   41  -- -- Assuming 'this year' is 2021
   42  select SUM(i.Cost) Revenue from Inspection i
   43  where i.EmployeeID in
   44  -- Get inspectors whose HireDate is at least 15 years from this year, 2021
   45  (
   46      select ip.EmployeeID from Inspector ip
   47      where timestampdiff(YEAR, ip.HireDate, curdate()) >= 15
   48  );
   ```

   | ⊙∨   Query Favorites   ∨   Query History   ∨ |

Revenue
2400

   a.

Implement these changes (in the order given) to your database. The specific data items will be provided in conjunction with Part 2.

8. Demonstrate the adding of a new 1600 sq ft residential building for builder #34567 located at 1420 Main St., Lewisville TX.

    a.

```
-- -- -- Implement the following changes in order -- -- --
-- Demonstrate the adding of a new 1600 sq ft residential building for builder #34567 located at 1420 Main St., Lewisville TX.
insert into Building values(34567, '1420 Main St., Lewisville TX', 'residential', 1600, null, null);
```

34567	1420 Main St., Lewisville TX	residential	1600 NULL	NULL

9. Demonstrate the adding of an inspection on the building you just added. This framing inspection occurred on 11/21/2021 by inspector 104, with a score of 50, and note of "work not finished."

    a.

```
-- Demonstrate the adding of an inspection on the building you just added.
-- This framing inspection occurred on 11/21/2021 by inspector 104, with a score of 50, and note of "work not finished."
insert into Inspection values(27, 'FRM', '2021/11/21', 34567, 104, 100, '1420 Main St., Lewisville TX', 50, 'work not finished.', 0);
```

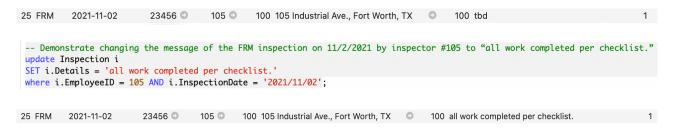| 27 FRM	2021-11-21	34567	104	100 1420 Main St., Lewisville TX		50 work not finished.	0

10. Demonstrate changing the cost of an ELE inspection changed to $150 effective today.

    a. Not Applicable using my current schema design, as inspection types and their costs are not directly linked i.e. FRM - $100, ELE - $100, etc. If an ELE inspection were to change prices, the insert statement into Inspection would simply have the new price.

11. Demonstrate adding of an inspection on the building you just added. This electrical inspection occurred on 11/22/2021 by inspector 104, with a score of 60, and note of "lights not completed."

    a.

```
-- Demonstrate adding of an inspection on the building you just added.
-- This electrical inspection occurred on 11/22/2021 by inspector 104, with a score of 60, and note of "lights not completed."
-- I will use the new price of ELE, $150, here
insert into Inspection values(28, 'FRM', '2021/11/22', 34567, 104, 150, '1420 Main St., Lewisville TX', 60, 'lights not completed.', 0);
```

28 FRM	2021-11-22	34567	104	150 1420 Main St., Lewisville TX		60 lights not completed.	0

12. Demonstrate changing the message of the FRM inspection on 11/2/2021 by inspector #105 to "all work completed per checklist."

    a.

| 25 | FRM | 2021-11-02 | 23456 | 105 | 100 | 105 Industrial Ave., Fort Worth, TX | | 100 | tbd | | 1 |

```
-- Demonstrate changing the message of the FRM inspection on 11/2/2021 by inspector #105 to "all work completed per checklist."
update Inspection i
SET i.Details = 'all work completed per checklist.'
where i.EmployeeID = 105 AND i.InspectionDate = '2021/11/02';
```

| 25 | FRM | 2021-11-02 | 23456 | 105 | 100 | 105 Industrial Ave., Fort Worth, TX | | 100 | all work completed per checklist. | | 1 |

13. Demonstrate the adding of a POL inspection by inspector #103 on 11/28/2021 on the first building associated with builder 45678.

    a.

```
-- Demonstrate the adding of a POL inspection by inspector #103 on 11/28/2021 on the first building associated with builder 45678.
insert into Inspection values(29, 'POL', '2021/11/28', 45678, 103, 50, '100 Winding Wood, Carrollton, TX', 76, 'Dirty filter', 1);
```

| 29 | POL | 2021-11-28 | 45678 | 103 | 50 | 100 Winding Wood, Carrollton, TX | | 76 | Dirty filter | | 1 |

Leave your database in this state   # of Inspection rows = 29

    NOTE: I exported the database in Xml format, so there are 4 Xml files that represent the tables I have in my Project database.

(END)