

Advanced MySQL Final Assessment

Task 1:

Task 1:

Lucky Shrub need to find out what their average sale price, or cost was for a product in 2022.

You can help them with this task by creating a **FindAverageCost()** function that returns the average sale price value of all products in a specific year. This should be based on the user input.

The screenshot below shows the average cost returned from the **FindAverageCost()** function based on the user input of the year 2022:

Result :

```
mysql> SELECT FindAverageCost(2022);
+-----+
| FindAverageCost(2022) |
+-----+
|                496.15 |
+-----+
```

Task 2:

Task 2:

Lucky Shrub need to evaluate the sales patterns for bags of artificial grass over the last three years. Help them out using the following steps:

Step 1: Create the **EvaluateProduct** stored procedure that outputs the total number of items sold during the last three years for the **P1** Product ID. Input the ProductID when invoking the procedure.

Step 2: Call the procedure.

Step 3: Output the values into outside variables.

Result :

```
mysql> CALL EvaluateProduct('P1', @sold_items_2020, @sold_items_2021, @sold_items_2022);
Query OK, 1 row affected (0.00 sec)

mysql> SELECT @sold_items_2020, @sold_items_2021, @sold_items_2022;
+-----+-----+-----+
| @sold_items_2020 | @sold_items_2021 | @sold_items_2022 |
+-----+-----+-----+
|          35      |          10      |          65      |
+-----+-----+-----+
```

Task 3:

Task 3:

Lucky Shrub need to automate the orders process in their database. The database must insert a new data in response to the insertion of a new order in the **Orders** table. This new record of data must contain new ID and the current date and time.

You can help Lucky Shrub by creating a trigger called **UpdateAudit**. This trigger must be invoked automatically AFTER a new order is inserted into the Orders table.

Remember: The AuditID is an auto increment key. Therefore, you don't need to insert it manually.

Result :

```
+-----+-----+
| AuditID | OrderDateTime |
+-----+-----+
|        1 | 2023-06-16 12:34:39 |
+-----+-----+
```

Task 4:

Task 4:

Lucky Shrub need location data for their clients and employees. To help them out, create an optimized query that outputs the following data:

- The full name of all clients and employees from the **Clients** and **Employees** tables in the Lucky Shrub database.
- The address of each person from the **Addresses** table.

The data should be ordered by the street name. The output result is shown in the following screenshot:

Result :

FullName	Street	County
Takashi Ito	,291 Oak Wood Avenue	Graham County
Laurina Delgado	102 Sycamore Lane	Santa Cruz County
Benjamin Clauss	125 Roselawn Close	Gila County
Emily Sierra	148 Riverview Lane	Tuscon County
Greta Galkina	178 Seaview Avenue	Tuscon County
Francesca Soffia	243 Waterview Terrace	Tuscon County
Jane Murphy	724 Greenway Drive	Pinal County
Seamus Hogan	751 Waterfall Hills	Tuscon County
Greta Galkina	755 Palm Tree Hills	Mohave County
Altay Ayhan	831 Beechwood Terrace	Cochise County
Thomas Eriksson	878 Riverside Lane	Tuscon County
Simon Tolo	908 Seaview Hills	Tuscon County

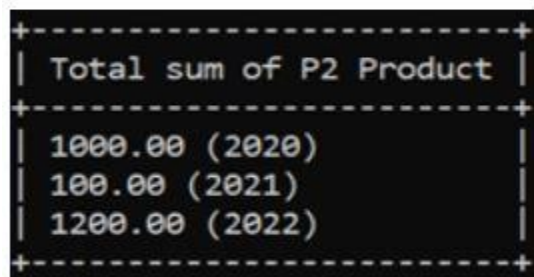
Task 5:

Task 5:

Lucky Shrub need to find out what quantities of wood panels they are selling. The wood panels product has a Product ID of **P2**. The following query returns the total quantity of this product as sold in the years 2020, 2021 and 2022:

```
1 SELECT CONCAT (SUM(Cost), " (2020)") AS "Total sum of P2 Product" FROM Orders WHERE YE
2 UNION
3 SELECT CONCAT (SUM(Cost), "(2021)") FROM Orders WHERE YEAR (Date) = 2021 AND ProductID
4 UNION
5 SELECT CONCAT (SUM (Cost), "(2022)") FROM Orders WHERE YEAR (Date) = 2022 AND ProductI
```

The output of this query is shown in the following screenshot:



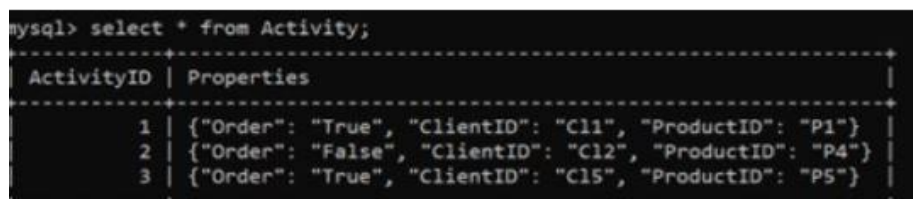
Total sum of P2 Product
1000.00 (2020)
100.00 (2021)
1200.00 (2022)

Your task is to optimize this query by recreating it as a common table expression (CTE).

Task6:

Task 6:

Lucky Shrub want to know more about the activities of the clients who use their online store. The system logs the **ClientID** and the **ProductID** information for each activity in a JSON Properties column inside the **Activity** table. This occurs while clients browse through Lucky Shrub products online. The following screenshot shows the **Activity** table.



```
mysql> select * from Activity;
```

ActivityID	Properties
1	{"Order": "True", "ClientID": "C11", "ProductID": "P1"}
2	{"Order": "False", "ClientID": "C12", "ProductID": "P4"}
3	{"Order": "True", "ClientID": "C15", "ProductID": "P5"}

Result :

ClientID	ProductID	FullName	ContactNumber
Cl1	P1	Takashi Ito	351786345
Cl2	P4	Jane Murphy	351567243
Cl5	P5	Altay Ayhan	351208983

Task7 :

Task 7:

Lucky Shrub need to find out how much revenue their top selling product generated.

Create a stored procedure called **GetProfit** that returns the overall profits generated by a specific product in a specific year. This should be based on the user input of the ProductID and Year.

For example, the output result of **GetProfit** procedure with the **P1** ProductID and Year **2020** is displayed in the screenshot below:

Result :

```
mysql> CALL GetProfit('P1', 2020);
+-----+
| profit |
+-----+
| 350.00 |
+-----+
```

Task8:

Task 8:

Lucky Shrub need a summary of their client's details, including their addresses, order details and the products they purchased. Help them out by creating a virtual table called **DataSummary** that joins together the four tables that contain this data. These four tables are as follows:

- **Clients**,
- **Addresses**,
- **Orders**,
- and **Products**.

Result :

FullName	ContactNumber	County	ProductName	ProductID	Cost	Date
Jane Murphy	351567243	Pinal County	Wood panels	P2	100.00	2022-09-05
Jane Murphy	351567243	Pinal County	Wood panels	P2	100.00	2022-09-13
Benjamin Clauss	351342509	Gila County	Sycamore trees	P4	150.00	2022-09-07
Laurina Delgado	351342597	Santa Cruz County	Artificial grass bags	P1	150.00	2022-09-10
Jane Murphy	351567243	Pinal County	Wood panels	P2	200.00	2022-09-05
Laurina Delgado	351342597	Santa Cruz County	Patio slates	P3	450.00	2022-09-08
Takashi Ito	351786345	Graham County	Artificial grass bags	P1	500.00	2022-09-01
Takashi Ito	351786345	Graham County	Artificial grass bags	P1	500.00	2022-09-12
Takashi Ito	351786345	Graham County	Artificial grass bags	P1	500.00	2022-09-01
Takashi Ito	351786345	Graham County	Artificial grass bags	P1	500.00	2022-09-01
Laurina Delgado	351342597	Santa Cruz County	Patio slates	P3	800.00	2022-09-03
Jane Murphy	351567243	Pinal County	Wood panels	P2	800.00	2022-09-09
Jane Murphy	351567243	Pinal County	Artificial grass bags	P1	1000.00	2022-09-01
Takashi Ito	351786345	Graham County	Sycamore trees	P4	1200.00	2022-09-10