MySQL Tasks- Create DB

1) What is a Query?

A query is a request for data or information from a database table or combination of tables. In the context of queries in a database, it can be either a **select** query (data retrieval query) or an **action** query (asks for additional operations on the data, such as insertion, updating or deletion).

2) What is the SELECT statement?

It is a statement used to select data from a database.

- SELECT… FROM…
- SELECT DISTINCT … FROM…
- SELECT COUNT (...) FROM…

3) What is the WHERE clause?

It is a clause used to filter records. (WHERE clause is not only used in SELECT statements, it is also used in UPDATE, DELETE, etc.!)

- SELECT… FROM… WHERE…

4) What is the Primary key?

Its constraint uniquely identifies each record in a table. It must contain **UNIQUE** values, and cannot contain **NULL** values. A table can have only **ONE** primary key; and in the table, this primary key can consist of single or multiple columns (fields).

5) What is a Database?

It is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).

SQL/ MySQL is a **relational** database that stores data in separate tables rather than putting all the data in one big storeroom. The database structure is organized into physical files optimized for speed. You set up rules governing the relationships between different data fields, such as one-to-one, one-to-many, unique, required, or optional, and “pointers” between different tables. The database enforces these rules so that with a well-designed database your application never sees data that are inconsistent, duplicated, orphaned, out of date, or missing.

Task 1:

```
USE sql_store;
SELECT last_name, first_name, points, ((points + 10)* 100) as discount_factor
FROM CUSTOMERS;
```

last_name	first_name	points	discount_factor
MacCaffrey	Babara	2273	228300
Brushfield	Ines	947	95700
Boagey	Freddi	2967	297700
Roseburgh	Ambur	457	46700
Betchley	Clemmie	3675	368500
Twiddell	Elka	3073	308300
Dowson	Ilene	1672	168200
Naseby	Thacher	205	21500
Rumgay	Romola	1486	149600
Mynett	Levy	796	80600

Task 2:

```
USE sql_store;
SELECT Name, Unit_Price, unit_price*1.1 as 'New Price'
FROM products;
```

Name	Unit_Price	New Price
Foam Dinner Plate	1.21	1.331
Pork - Bacon,back Peameal	4.65	5.115
Lettuce - Romaine, Heart	3.35	3.685
Brocolinni - Gaylan, Chinese	4.53	4.983
Sauce - Ranch Dressing	1.63	1.793
Petit Baguette	2.39	2.629
Sweet Pea Sprouts	3.29	3.619
Island Oasis - Raspberry	0.74	0.814
Longan	2.26	2.486
Broom - Push	1.09	1.199

Task 3:

```
USE sql_store;
SELECT*
FROM customers
WHERE birth_date> '1990-01-01';
```

customer_id	first_name	last_name	birth_date	phone	address	city	state	points
6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486

Task 4:

```
USE sql_inventory;
SELECT Name, Quantity_in_stock, Unit_price
FROM products
ORDER BY quantity_in_stock DESC
LIMIT 1;
```

Name	Quantity_in_stock	Unit_price
Foam Dinner Plate	70	1.21
Pork - Bacon,back Peameal	49	4.65
Lettuce - Romaine, Heart	38	3.35
Brocolinni - Gaylan, Chinese	90	4.53
Sauce - Ranch Dressing	94	1.63
Petit Baguette	14	2.39
Sweet Pea Sprouts	98	3.29
Island Oasis - Raspberry	26	0.74
Longan	67	2.26
Broom - Push	6	1.09

Task 5:

```
USE sql_inventory;
SELECT Product_id, Name, (quantity_in_stock*unit_price) as 'Price',
Quantity_in_stock, Unit_price
FROM products
order by quantity_in_stock*unit_price DESC
limit 1;
```

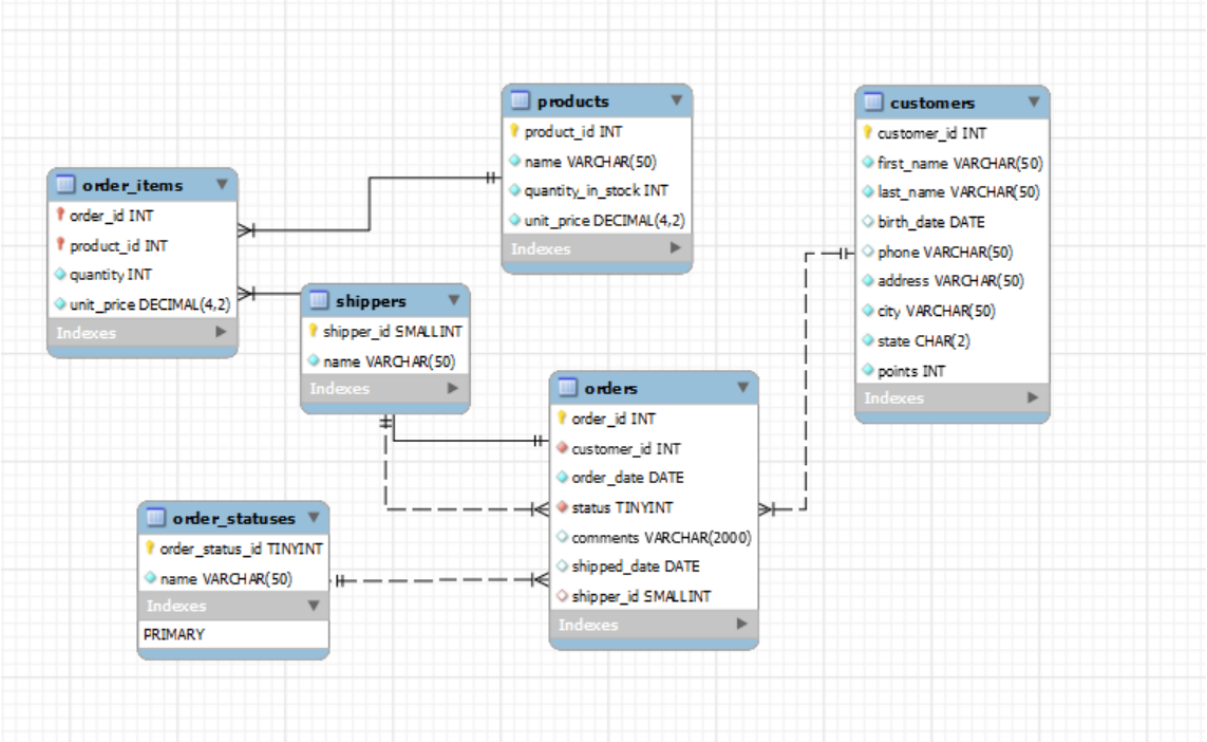
Product_id	Name	Price	Quantity_in_stock	Unit_price
4	Brocolinni - Gaylan, Chinese	407.70	90	4.53

Task 6:

```
USE sql_store;
SELECT First_name, Last_name, Birth_date, Address, City, State
FROM customers
ORDER BY birth_date ASC;
```

First_name	Last_name	Birth_date	Address	City	State
Ilene	Dowson	1964-08-30	50 Lillian Crossing	Nashville	TN
Levy	Mynett	1969-10-13	68 Lawn Avenue	Atlanta	GA
Clemmie	Betchley	1973-11-07	5 Spohn Circle	Arlington	TX
Ambur	Roseburgh	1974-04-14	30 Arapahoe Terrace	Orlando	FL
Freddi	Boagey	1985-02-07	251 Springs Junction	Colorado Springs	CO
Babara	MacCaffrey	1986-03-28	0 Sage Terrace	Waltham	MA
Ines	Brushfield	1986-04-13	14187 Commercial Trail	Hampton	VA
Elka	Twiddell	1991-09-04	7 Manley Drive	Chicago	IL
Romola	Rumgay	1992-05-23	3520 Ohio Trail	Visalia	CA
Thacher	Naseby	1993-07-17	538 Mosinee Center	Sarasota	FL

Creating an EER Diagram:



In this diagram, we can notice that the ‘order_items’ table is a composite key where the columns are used to identify all the rows that are involved uniquely. It has a many-to-one relationship and identifying relationship (solid line) to the ‘products’ table and ‘shippers’ table.

Whereas, ‘orders’ is a parent table which has ‘order_id INT’ as a primary key. It has a many-to-one relationship and non-identifying relationship (dotted line) to the tables of ‘customers’, ‘order_statuses’, and ‘shippers’. This means the child can be identified independently of the parent.