Projet SQL

1ère partie : Base de données Sakila

1. Trouvez tous les acteurs dont le nom de famille contient les lettres "gen".

2. Trouvez tous les acteurs dont le nom de famille contient les lettres "li".

3. Liste des noms de famille de tous les acteurs, ainsi que le nombre d'acteurs portant chaque nom de famille.

4. Lister les noms de famille des acteurs et le nombre d'acteurs qui portent chaque nom de famille, mais seulement pour les noms qui sont portés par au moins deux acteurs.

5. Utilisez JOIN pour afficher le montant total perçu par chaque membre du personnel en août 2005.

6. Afficher les titres des films commençant par les lettres K et Q dont la langue est l'anglais.

7. Affichez les noms et les adresses électroniques de tous les clients canadiens.

8. Quelles sont les ventes de chaque magasin pour chaque mois de 2005 ? (CONCAT)

9. Trouvez le titre du film, le nom du client, le numéro de téléphone du client et l'adresse du client pour tous les DVD en circulation (qui n'ont pas prévu d'être rendus)

2ème partie : Test technique (type entreprise)

1. How can SQL queries be optimized?
2. How do you remove duplicate rows from a table?
3. What are the main differences between HAVING and WHERE SQL clauses?
4. What is the difference between normalization and denormalization?
5. What are the key differences between the DELETE and TRUNCATE SQL commands?
6. What are some ways to prevent duplicate entries when making a query?
7. What are the different types of relationships in SQL?
8. Give an example of the SQL code that will insert the 'Input data' into the two tables. You must ensure that the student table includes the correct [dbo].[Master].[id] in the [dbo].[student].[Master_id] column.

   Then give an example of the SQL code that shows courses', subject names, and the number of students taking the course *only* if the course has three or more students on the course.

Table: subject			
subject_id	subject_name	max_score	lecturer
11	Math	130	Charlie Sole
12	Computer Science	50	James Pillet
13	Biology	300	Carol Denby
14	Geography	220	Yollanda Balang
15	Physics	110	Chris Brother
16	Chemistry	400	Manny Donne

Table: student			
student_id	student_name	city	subject_id
2001	Olga Thorn	New York	11
2002	Sharda Clement	San Francisco	12
2003	Bruce Shelkins	New York	13
2004	Fabian Johnson	Boston	15
2005	Bradley Camer	Stanford	11
2006	Sofia Mueller	Boston	16
2007	Rory Pietman	New Haven	12
2008	Carly Walsh	Tulsa	14
2011	Richard Curtis	Boston	11
2012	Cassey Ledgers	Stanford	11
2013	Harold Ledgers	Miami	13
2014	Davey Bergman	San Francisco	12
2015	Darcey Button	Chicago	14

9. Write a query to retrieve the order_id , customer_id, and total from the orders table where the total is greater than 400.

   Then do a query to retrieve the customer_id and the total amount spent by each customer from the orders table, ordered by the total amount spent in descending order.

Table: Orders

order_id	customer_id	order_date	total
1	100	01/01/2021	200
2	101	02/02/2021	300
3	102	03/03/2021	400
4	103	04/04/2021	500
5	104	05/05/2021	600

Table: Order items

order_id	product_id	quantity	price
1	10	2	50
1	11	3	25
2	12	4	30
2	13	5	20
3	14	6	15
3	15	7	10
4	16	8	5
4	17	9	4
5	18	10	3
5	19	11	2

10. Write a query that shows the total quantity sold for each product.

Table: Order items

order_id	order_date	customer_id	product_id	quantity
1	01/01/2022	101	1	2
2	01/01/2022	102	1	1
3	01/01/2022	103	2	5
4	02/01/2022	104	3	3
5	02/01/2022	105	1	2
6	02/01/2022	101	3	1
7	03/01/2022	102	2	4
8	03/01/2022	103	1	2
9	03/01/2022	104	2	1
10	04/01/2022	105	3	2

11. Assume we have a large excel spreadsheet with customer orders data. Each row contains information about a single order, including the customer name, order date, order ID, order quantity, and order total. We want to divide this data into three tables: Customers, Orders, and OrderDetails. Customers will store customer information, Orders will store order information (including customer ID), and OrderDetails will store details about individual order items (including order ID).

Customers:

id	name	address	city	country
1	John Smith	123 Main St.	Anytown	USA
2	Jane Doe	456 Oak St.	Somewhere	USA
3	Bob Johnson	789 Pine St.	Anytown	USA
4	Alice Lee	1010 Elm St.	Nowhere	USA
5	David Kim	1234 Maple St.	Anytown	USA

Orders:

id	customer_id	order_date	total
1	1	01/01/2022	100
2	1	02/01/2022	150
3	2	03/01/2022	75
4	3	04/01/2022	200
5	4	05/01/2022	50

OrderDetails:

id	order_id	product	quantity	price
1	1	Widget A	2	25
2	1	Widget B	1	50
3	2	Widget C	1	75
4	2	Widget D	2	37.5
5	3	Widget A	1	25
6	3	Widget B	2	50
7	4	Widget D	1	200
8	5	Widget A	2	25

We want to insert the customer orders data into the three tables Customers, Orders, and OrderDetails. Write an SQL query that inserts the data into the appropriate tables, and ensures that the customer ID and order ID are maintained across all three tables. The Orders table should have a foreign key reference to the Customers table, and the OrderDetails table should have a foreign key reference to the Orders table. Assume that the source data is stored in a single table named 'customer_orders', and that the schema for each destination table is already defined.