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ITE-M1                                                                ITE
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DB_Homework_06 Solution :
1. List the products and their stocked quantities that are less than 10.*/

    SELECT ProductName, StockQty
    FROM TbProduct
    WHERE StockQty < 10;

/*2. Show the years and the total income for each year.*/

    SELECT Year(InvoiceDate) AS Years, Sum(TotalAmount) AS [Total Income]
    FROM TbInvoice
    GROUP BY Year(InvoiceDate);

/*3. Show the ID, name and phone number of the customer who purchased the Invoice with ID = 1.*/

    SELECT TbInvoice.CusID AS ID, CusName AS name, PhoneNo AS [phone number]
    FROM TbInvoice RIGHT JOIN TbCustomer ON TbInvoice.CusID = TbCustomer.CusID
    WHERE InvoiceID = 1;

/*4. Show the IDs, names and the purchased quantities of the products listed in Invoice with ID
= 1.*/

    SELECT TbProduct.ProductID AS IDs, ProductName AS [names], Sum(Quantity) AS quantities
    FROM TbInvoice RIGHT JOIN (TbInvoiceDetail RIGHT JOIN TbProduct ON
    TbInvoiceDetail.ProductID = TbProduct.ProductID) ON TbInvoice.InvoiceID =
    TbInvoiceDetail.InvoiceID
    WHERE (((TbInvoice.InvoiceID)=1))
    GROUP BY TbProduct.ProductID, ProductName;

/*5. List all the customers whose names start with “B” and were born in 2000.*/

    SELECT CusName AS Name
    FROM TbCustomer
    WHERE CusName LIKE 'B*'  AND Year(BirthDate) = 2000;

-- 6. Show the provinces and the number of customers from each province. Also, sort the result
set by the number of customers from each province in a descending order.

    SELECT Province, COUNT(Province) AS Customers
    FROM TbCustomer
    GROUP BY Province
    ORDER BY COUNT(Province) DESC;
-- 7. Show the number of male and female customer from each province.

    SELECT Province, COUNT(IIF(Gender = 'M', 1, )) AS Male, COUNT(IIF(Gender = 'F', 1, )) AS
    Female
    FROM TbCustomer
    GROUP BY Province;

-- 8. List the products and their quantities sold in July 2019.

    SELECT InvoiceDate, ProductName, Sum(Quantity) AS Quantities
    FROM TbInvoice RIGHT JOIN (TbInvoiceDetail RIGHT JOIN TbProduct ON
    TbInvoiceDetail.ProductID = TbProduct.ProductID) ON TbInvoice.InvoiceID =
    TbInvoiceDetail.InvoiceID
    WHERE MONTH(InvoiceDate)='7' AND Year(InvoiceDate)= '2019'
    GROUP BY ProductName, InvoiceDate;

-- 9. Show the average age of male and the average age of female customers, and their average
purchased amounts.

    SELECT Gender, ROUND(AVG(DATEDIFF("yyyy",BirthDate,DATE())),0) AS Age, AVG(TotalAmount) AS
    [Average amount]
    FROM TbCustomer RIGHT JOIN TbInvoice ON TbCustomer.CusID =TbInvoice.CusID
    GROUP BY Gender;
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-- 10. Show names and qualities of the products purchased by the customer with ID=1.

    SELECT ProductName, Quantity
    FROM TbCustomer LEFT JOIN (TbInvoice LEFT JOIN (TbInvoiceDetail LEFT JOIN TbProduct ON
    TbInvoiceDetail.ProductID = TbProduct.ProductID) ON TbInvoice.InvoiceID =
    TbInvoiceDetail.InvoiceID) ON TbCustomer.CusID = TbInvoice.CusID
    WHERE TbCustomer.CusID = 1;

-- 11. List all customers and their total purchased amounts.

    SELECT TbCustomer.CusName, SUM(TotalAmount) AS [Total purchased amount]
    FROM TbCustomer LEFT JOIN TbInvoice ON TbCustomer.CusID = TbInvoice.CusID
    GROUP BY CusName;

-- 12. Find the most sold product in 2018.

    SELECT TOP 1 ProductName AS [Most sold], SUM(Quantity) AS [TOP 1 Quantity]
    FROM TbInvoice LEFT JOIN (TbInvoiceDetail LEFT JOIN TbProduct ON TbInvoiceDetail.ProductID
    = TbProduct.ProductID) ON TbInvoice.InvoiceID = TbInvoiceDetail.InvoiceID
    WHERE YEAR(InvoiceDate) = 2018
    GROUP BY ProductName
    ORDER BY SUM(Quantity) DESC;

-- 13. Update the price of the products that were not sold in 2020 by minus 1$.

    UPDATE TbProduct SET UnitPrice = UnitPrice - 1
    WHERE ProductName NOT IN(
        SELECT DISTINCT ProductName
        FROM TbProduct RIGHT JOIN(TbInvoiceDetail RIGHT JOIN TbInvoice ON
        TbInvoiceDetail.InvoiceID = TbInvoice.InvoiceID)ON TbProduct.ProductID =
        TbInvoiceDetail.ProductID
        WHERE  YEAR(InvoiceDate) = 2020
    );

-- 14. Update the membership of the customers whose total purchase amount are more than 50$ to
"Premium".

    UPDATE TbCustomer SET Membership = "Premium"
    WHERE CusID IN (
        SELECT TbInvoice.CusID
        FROM TbInvoice RIGHT JOIN TbCustomer ON TbInvoice.CusID = TbCustomer.CusID
        WHERE TotalAmount > 0
        GROUP BY TbInvoice.CusID
        HAVING Sum(TotalAmount) >= 50
    );

-- 15. Remove the customers who have never bought any product, and whose memberships are “Guest”.

    DELETE *
    FROM TbCustomer
    WHERE CusID NOT IN(
        SELECT TbInvoice.CusID
        FROM TbInvoice LEFT JOIN TbCustomer ON TbInvoice.CusID = TbCustomer.CusID
        GROUP BY  TbInvoice.CusID,CusName
        )
    OR Membership = "Guest";
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