Worksheet 01

Working Platform: Microsoft SQL Server

1. Create a new database giving '**LankaSales**' as the database name.
2. Create following tables under the database you have just created. Use SQL Scripts to create tables. Keyfields are underlined.

Client

Field Name	Data Type	Size
ClientNo	varchar	6
Name	varchar	20
City	varchar	20
Date_Joined	DateTime	
Balance_Due	Currency	

Product

Field Name	Data Type	Size
ProductNo	varchar	6
Description	varchar	50
Profit_Margin*	Number	
Qty_Available	Number	
Re_Order_Level	Number	
Item_Cost	Currency	
Selling_Price	Currency	

* Profit Margin should be between 0 and 100

3. Write SQL statements to insert following records to the tables created.

Client Table

ClientNo	Name	City	Date_Joined	Balance_Due
C001	Sagara	Colombo	20/12/2010	25000
C002	Nisansala	Galle	05/08/2014	12000
C003	Pamith	Piliyandala	30/01/2008	4500
C004	Amali	Moratuwa	15/06/2015	20000
C005	Nayana	Nugegoda	18/12/2011	16500
C006	Krishan	Anuradhapura	04/03/2014	22000
C007	Ruwanthi	Maharagama	04/05/2015	8500

Product Table

ProductNo	Description	Profit_Margin (%)	Qty_Available	Re_Order_Level	Item_Cost	Selling_Price
P0001	FlashDrive 8 GB	5	100	30	1000	1050
P0002	Keyboard	10	25	5	3500	3850
P0003	Mouse	10	50	15	1200	1320
P0004	HardDisk 400 GB	15	20	5	10000	11500
P0005	HardDisk I TB	15	35	3	15000	17250
P0006	FlashDrive 32 GB	5	100	25	1100	1155
P0007	LED Monitor 15”	15	15	5	18000	20700
P0008	LED Monitor 17”	15	10	2	30000	34500

4. Write SQL Statements for the following queries.
   - 4.1. List the names of all the clients
   - 4.2. Prepare a list of cities of customers. Make sure not to repeat the same city in the list.
   - 4.3. Find the number of customers residing in Colombo.
   - 4.4. List the names of the clients whose name begins with letter ‘N’
   - 4.5. Find the customers joined before 1st January 2015
   - 4.6. Find the Name and the City of customers who joined in the year 2014
   - 4.7. List the customers who has a balance more than Rs. 10000.00
   - 4.8. What is the average profit margin for products?
   - 4.9. Find the products which keep over 10% profit
   - 4.10. Find the total value of the keyboards available.

5. Write SQL Query to produce following Table to show Available Quantity of given Product.

P0001	P0002	P0003	P0004	P0005	P0006	P0007	P0008
100	25	50	20	35	100	15	10

Worksheet 02

6. Create the following tables under the database created. You may use the design editor for creating them. Key fields are underlined.

Sales_Order

Field Name	Data Type	Size	Description
Sales_Order_No	Number		
Sales_Order_Date	DateTime		
Order_Taken_By	varChar	20	Name of the sales person
ClientNo	varChar	6	Foreign Key references Client
Delivery_Address	varChar	255	

Sales_Order_Details

Field Name	Data Type	Size	Description
Sales_Order_No	Number		Foreign Key references Sales_Order
Product_No	varchar	5	Foreign Key references Product
Quantity	Number		Number of items

Items_to_Order

Field Name	Data Type	Size	Description
NoticeNo	Number		
Product_No	varchar	5	Foreign Key references Product
DateNotified	DateTime		

7. Populate tables with appropriate records – At least 10 records. (Make sure to insert records in order to keep referential integrity).

8. Create views for the following.
    8.1. Prepare a list of sales orders placed by the client C005.
    8.2. Print the description and total quantity sold from each product
    8.3. Find the names of sales persons who have sold **HardDisk I TB**
    8.4. Display the sales order no and the day the customer placed their order
    8.5. Display the orders to be delivered in a given day
    8.6. Find the bill value of a given Sales_Order

9. Create Stored Procedures to represent the queries indicated in Question 7

10. Create Dynamic Query to extract sales of a given Sales Person who has at least one Sales order. Output with the query should not contain empty tuples for sales person who does not have sales.

11. Create triggers for the following.

    11.1. Write an Update trigger for the Products table to insert a record to the Items_to_Order table if the Quantity available of a given product falls below the re-order level.

    11.2. Write an Insert trigger to Sales_Order _Detail trigger to update the Product table according to the products and the quantities ordered in a given sale. (Eg. If sales order detail table gets a new record for 25 items of product P0001, the Qty_Available in the product table should be updated accordingly.