Database Systems Lab

BS(SE) Morning - Fall 2022

Assignment-01

Deadline: 25 Aug 2024 Sunday 11:59 pm

Course & Lab Instructor: Dr. Sanam Ahmed

- **Kindly paste the query as well as result table screenshot as a result of each task**

Sample:

Display All the Employees from emp table

Solution:

Select * from emp

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7499	ALLEN	SALESMAN	7698	02/20/1981	1600	300	30
7521	WARD	SALESMAN	7698	02/22/1981	1250	500	30
7654	MARTIN	SALESMAN	7698	09/28/1981	1250	1400	30
More than 10 rows available. Increase rows selector to view more rows.							

Task 01: [15 Marks]

Create the following tables

1. Customers

Col Name	Data Type	Constraints
CustomerID	INT	Primary Key
FirstName	VARCHAR(50)	NOT NULL
LastName	VARCHAR(50)	NOT NULL
Email	VARCHAR(20)	NOT NULL, UNIQUE
Phone	VARCHAR(11)	NOT NULL, UNIQUE
JoinDate	DATE	NOT NULL

2. Categories

Col Name	Data Type	Constraints
CategoryID	INT	Primary Key
CategoryName	VARCHAR(100)	NOT NULL, UNIQUE
Description	VARCHAR(200)	

3. Products

Col name	Data Type	Constraints
ProductID	INT	Primary Key
ProductName	VARCHAR(100)	NOT NULL
CategoryID	INT	Foreign Key references Categories(CategoryID)
Price	DECIMAL(10, 2)	Price > 0
StockQuantity	INT	StockQuantity >=0

4. Orders

Col Name	Data Type	Constraints
OrderID	INT	Primary Key
CustomerID	INT	Foreign Key references Customers(CustomerID)
OrderDate	DATE	NOT NULL
TotalAmount	DECIMAL(10, 2)	NOT NULL, TotalAmount >= 0

5. OrderDetails

Col Name	Data Type	Constraints
OrderDetailID	INT	Primary Key
OrderID	INT	Foreign Key references Orders(OrderID)
ProductID	INT	Foreign Key references Products(ProductID)
Quantity	INT	NOT NULL, Quantity > 0
PriceAtOrder	DECIMAL(10, 2)	NOT NULL,PriceAtOrder > 0

Task 02: [15 Marks]

Insert Data into the tables

(Don't change the data which is specified as it is going to be used while retrieving the data in Task 3)

1. 3 Customers

Sanam Ahmad, JoinDate: 23 Aug 2023

Jafar Naqvi, JoinDate: 25 March 2024

Laiba Riaz, JoinDate: 2 Feb 2023

2. 3 Categories (Electronics, Books, Groceries)

3. 10 Products

4. 5 Orders (2 orders should be of Aug 2023, 1 of Jan 2023, and 2 of Dec 2023)

5. OrderDetails (There should be at least 3 unique Products in an order, Adjust the Total amount of specific order in Order Table according to the Products you are going to enter in OrderDetails Table for that Order.)

Task 03: [30 Marks]

Retrieving Data from the Tables

1. Show data of all the tables.

2. Find the average price of all products in the 'Electronics' category.

3. Find the total revenue generated per customer, ordered by the highest revenue.

4. Retrieve the FirstName, LastName, OrderDate, and TotalAmount for all orders placed by 'Sanam Ahmad'.

5. Retrieve the total number of products sold in each category, ordered by the total number of products sold in descending order.

6. Find the total revenue generated per customer, ordered by the highest revenue.

7. Retrieve the names of products ordered by customers who joined after March 1, 2023.

8. Find the most expensive product in each category.

9. Display the Total spent money of each Customer, Sort in ascending order.

10. Retrieve the total number of orders placed per month of year 2023.

11. Find all products that have never been ordered.

12. Find all customers who placed more than 3 orders.

13. List the categories that have more than 3 products.

14. Find the average, minimum, and maximum order total for each customer.

15. Calculate the total revenue for each product and sort by highest revenue.