Connecting Intelligence

Institute of Computer Engineering Technology

iCET Certified Master

ASSIGNMENT

Assignement	WEEK 02 - DBMS
Name	SQL Fundamentals
Ass. Date	18th November 2023

Answer all the questions given below.

1) What are the usages of using SQL constraints?

2) What is the primary purpose of a primary key in a database table?

3) Can a primary key consist of multiple columns? If yes, what is it called?

4) How does a primary key differ from a unique key constraint?

5) Is it possible for a primary key column to have NULL values? Why or why not?

6) What is a foreign key, and how does it relate to another table? And can a foreign key reference multiple tables?

7) How does a unique constraint differ from a primary key constraint?

8) Is it possible to have multiple unique constraints on a single table? If yes, explain with an example.

9) What is the purpose of a default constraint in SQL?

10) Can a column have both a default constraint and a NOT NULL constraint at the same time?

11) How do default constraints affect existing data when added to a table?

12) What is the function of a check constraint in a table?

13) Imagine you're creating a database for a bookstore. The database should include tables for books, authors, and categories.
Establish relationships between these tables using appropriate foreign key constraints. Write the complete SQL codes for the given task.

    - Design SQL statements to create tables for books, authors, and categories.

    - Create a foreign key constraint in the "Books" table that references the "Authors" table using the "AuthorID" column.

    - Add a foreign key constraint in the "Books" table that links the "CategoryID" column to the "Categories" table.

AuthorID	AuthorName
1	J.K. Rowling
2	Stephen King
3	Harper Lee
4	George Orwell

Author Table

CategoryID	CategoryName
1	Fantasy
2	Horror
3	Classics
4	Dystopian

Category Table

BookID	Title	AuthorID	CategoryID
101	Harry Potter and the Philosopher's Stone	1	1
102	The Shining	2	2
103	To Kill a Mockingbird	3	3
104	1984	4	4

Book Table

14) For a small shop, you should create tables for products, sales, and customers.
The products table will store information about available items, the sales table will track transactions, and the customers table will hold information about buyers.
Write the complete SQL codes for the given task.

- Design SQL statements to create tables for products, sales, and customers.
- Establish a foreign key constraint in the "Sales" table that references the "Products" table using the "ProductID" column.
- Add a foreign key constraint in the "Sales" table that links the "CustomerID" column to the "Customers" table.

CustomerID	CustomerName	Email
1	John Doe	john@example.com
2	Jane Smith	jane@example.com
3	Emily Johnson	emily@example.com

Customer Table

ProductID	ProductName	Price	StockQuantity
1	T-Shirt	19.99	50
2	Jeans	39.99	30
3	Sneakers	29.99	40
4	Dress	49.99	20

Product Table

SaleID	ProductID	CustomerID	Quantity	TotalAmount	SaleDate
101	1	1	2	39.98	2023-11-15
102	2	2	1	39.99	2023-11-16
103	3	3	3	89.97	2023-11-17
104	4	1	1	49.99	2023-11-18

Sales Table

15) For a small cafe, you should create tables for menu items, orders, and customers. The menu items table will store information about available food/drinks, the orders table will track customer orders, and the customers table will hold information about cafe visitors.
Write the complete SQL codes for the given task.

- Design SQL statements to create tables for menu items, orders, and customers.
  - ✔ The MenuItems table stores information about food and drinks available in the cafe.

    It includes columns for MenuItemID (as the primary key), ItemName, and Price.
  - ✔ The Customers table contains information about visitors to the cafe.

    It includes columns for CustomerID (as the primary key), CustomerName, and Email.
  - ✔ The Orders table tracks orders made by customers, including OrderID (as the primary key), MenuItemID (foreign key referencing MenuItems table), CustomerID (foreign key referencing Customers table), Quantity of items ordered, TotalAmount of the order, and OrderDate.
- Establish a foreign key constraint in the "Orders" table that references the "MenuItems" table using the "MenuItemID" column.
- Add a foreign key constraint in the "Orders" table that links the "CustomerID" column to the "Customers" table.
- Insert sample records to the all tables.