Practicing SQL Basics

Let's create a table called `Employees` with the following structure:

Column Name	Data Type	Description
EmployeeID	INT	Unique ID for each employee
FirstName	TEXT	Employee's first name
LastName	TEXT	Employee's last name
Department	TEXT	Department the employee works in
Salary	DECIMAL	Employee's annual salary
HireDate	DATE	Date the employee was hired
ManagerID	INT	The EmployeeID of their manager (Can be NULL)

Copy paste the code block given below and then perform required queries on [ONLINE MySQL COMPILER]

```
CREATE TABLE Employees (

    EmployeeID INT PRIMARY KEY,

    FirstName VARCHAR(50) NOT NULL,

    LastName VARCHAR(50) NOT NULL,

    Department VARCHAR(50),

    Salary DECIMAL(10, 2),

    HireDate DATE,

    ManagerID INT NULL

);

INSERT INTO Employees (EmployeeID, FirstName, LastName, Department, Salary,
HireDate, ManagerID) VALUES

(1, 'John', 'Doe', 'Sales', 75000.00, '2020-01-15', NULL),

(2, 'Jane', 'Smith', 'Marketing', 68000.00, '2019-05-20', 1),

(3, 'Peter', 'Jones', 'Sales', 72000.00, '2021-11-10', 1),

(4, 'Mary', 'Brown', 'IT', 85000.00, '2018-03-01', NULL),

(5, 'David', 'Wilson', 'IT', 80000.00, '2020-07-22', 4),

(6, 'Emily', 'Davis', 'Finance', 70000.00, '2022-09-05', 4),

(7, 'Michael', 'Garcia', 'Sales', 78000.00, '2019-04-18', 1),

(8, 'Sarah', 'Rodriguez', 'Marketing', 65000.00, '2023-02-14', 2),

(9, 'James', 'Martinez', 'IT', 90000.00, '2017-08-30', 4),

(10, 'Linda', 'Hernandez', 'Finance', 73000.00, '2021-06-01', 6);
```

SQL Question Set 1: Basic Retrieval and Filtering

- **Question 1:** Write a SQL query to select the `FirstName`, `LastName`, and `Department` for all employees who work in the 'Sales' department.
- **Question 2:** Write a SQL query to list the `EmployeeID`, `FirstName`, and `Salary` for employees whose `Salary` is between 60000 and 80000 (inclusive) using the `BETWEEN` operator.

SQL Question Set 2: Data Modification and Special Conditions

- **Question 1:** Write a SQL query to insert a new employee record with the following details: `EmployeeID` 105, `FirstName` 'Chris', `LastName` 'Evans', `Department` 'R&D', `Salary` 85000, `HireDate` '2024-01-20', `ManagerID` 15.
- **Question 2:** Write a SQL query to select the `EmployeeID`, `FirstName`, and `LastName` for all employees who do *not* have a `ManagerID` assigned (i.e., their `ManagerID` is NULL).

SQL Question Set 3: Aggregation and Grouping

- **Question 1:** Write a SQL query to calculate the average `Salary` of all employees in the entire `Employees` table.
- **Question 2:** Write a SQL query to find the `Department`s that have a total `Salary` expenditure (sum of salaries) greater than 500000. Display the `Department` and the calculated total salary for those departments.

NOSQL

Question 4: How do you update a field in all documents matching a certain condition in MongoDB?

Question 5: How do you find duplicate values in a MongoDB collection?

Note: Create the database, collection, and insert the necessary documents, based on the requirements of the question.