**EXERCISE 2 INDEX**

-- Exercise 1: Creating a Non-Clustered Index

-- Goal: Create a non-clustered index on the ProductName column in the Products table and compare query execution time before and after index creation.

SELECT \* FROM Products WHERE ProductName = 'Laptop';



CREATE NONCLUSTERED INDEX Products\_ProductName

ON Products (ProductName);

SELECT \* FROM Products WHERE ProductName = 'Laptop';



-- Exercise 2: Creating a Clustered Index

-- Goal: Create a clustered index on the OrderDate column in the Orders table and compare query execution time before and after index creation.

-- Step 1: Query to fetch orders before index creation

SELECT \* FROM Orders WHERE OrderDate = '2023-01-15';

-- Step 2: Create a clustered index on OrderDate

ALTER TABLE OrderDetails DROP CONSTRAINT FK\_\_OrderDeta\_\_Order\_\_4242D080;

ALTER TABLE Orders DROP CONSTRAINT PK\_\_Orders\_\_C3905BAF37F9BF40;

ALTER TABLE Orders ADD CONSTRAINT PK\_\_Orders\_\_C3905BAF37F9BF40 PRIMARY KEY NONCLUSTERED (OrderID);

CREATE CLUSTERED INDEX Order\_OrderDates

ON Orders (OrderDate);

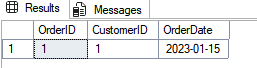
ALTER TABLE OrderDetails

ADD CONSTRAINT FK\_OrderDetails\_OrderID

FOREIGN KEY (OrderID) REFERENCES Orders(OrderID);

-- Step 3: Query to fetch orders after index creation

SELECT \* FROM Orders WHERE OrderDate = '2023-01-15';



-- Exercise 3: Creating a Composite Index

-- Goal: Create a composite index on the CustomerID and OrderDate columns in the Orders table and compare query execution time before and after index creation.

-- Step 1: Query to fetch orders before index creation

SELECT \* FROM Orders WHERE CustomerID = 1 AND OrderDate = '2023-01-15';

-- Step 2: Create a composite index on CustomerID and OrderDate

CREATE NONCLUSTERED INDEX Orders\_CustomerID\_OrderDate

ON Orders (CustomerID, OrderDate);

-- Step 3: Query to fetch orders after index creation

SELECT \* FROM Orders WHERE CustomerID = 1 AND OrderDate = '2023-01-15';

