**Exercise 1: Creating a Non-Clustered Index**

**SQL**

-- Enable statistics to measure query execution time (optional, for performance comparison)

SET STATISTICS TIME ON;

-- Step 1: Query to fetch product details before index creation

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

-- Step 2: Create a non-clustered index on ProductName

CREATE NONCLUSTERED INDEX IX\_Products\_ProductName

ON Products(ProductName);

-- Step 3: Query to fetch product details after index creation

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

-- Disable statistics after testing

SET STATISTICS TIME OFF;

**Ouput**

ProductID | ProductName | Category | Price

1 | Laptop | Electronics | 1200.00

**Exercise 2: Creating a Clustered Index**

**SQL**

-- Enable statistics to measure query execution time (optional, for performance comparison)

SET STATISTICS TIME ON;

-- 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

-- First, drop the existing clustered index on OrderID (PRIMARY KEY) and recreate it as non-clustered

ALTER TABLE Orders DROP CONSTRAINT PK\_Orders;

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

-- Now create the clustered index on OrderDate

CREATE CLUSTERED INDEX IX\_Orders\_OrderDate

ON Orders(OrderDate);

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

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

-- Disable statistics after testing

SET STATISTICS TIME OFF;

**Output**

OrderID | CustomerID | OrderDate

1 | 1 | 2023-01-15

**Exercise 3: Creating a Composite Index**

**SQL**

-- Enable statistics to measure query execution time (optional, for performance comparison)

SET STATISTICS TIME ON;

-- 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 non-clustered index on CustomerID and OrderDate

CREATE NONCLUSTERED INDEX IX\_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';

-- Disable statistics after testing

SET STATISTICS TIME OFF;

**Output**

OrderID | CustomerID | OrderDate

1 | 1 | 2023-01-15