EF Core 8.0 Hands-On Lab Report (Labs 1–5)

Lab 1: Understanding ORM with a Retail Inventory System

In Lab 1, a .NET console application named 'RetailInventory' was created using the command:

  dotnet new console -n RetailInventory

EF Core packages were then installed:

  dotnet add package Microsoft.EntityFrameworkCore.SqlServer

  dotnet add package Microsoft.EntityFrameworkCore.Design

This lab laid the foundation by introducing ORM and setting up the EF Core environment.

Lab 2: Setting Up the Database Context

In this lab, the `Category` and `Product` models were created with appropriate navigation properties. `AppDbContext` was defined with DbSet<Product> and DbSet<Category>. A SQL Server connection string was configured with the user's Windows Authentication:

  Server=LAPTOP-PPAGAVBO\SQLEXPRESS02;Database=RetailInventoryDb;

  Trusted_Connection=True;TrustServerCertificate=True;

Lab 3: Using EF Core CLI to Apply Migrations

The initial migration was created using:

  dotnet ef migrations add InitialCreate

Then the database schema was applied using:

  dotnet ef database update

This created the RetailInventoryDb database with Products and Categories tables.

Lab 4: Inserting Initial Data into the Database

Initial data for categories and products was added using AddRangeAsync and SaveChangesAsync.
Two categories ('Electronics' and 'Groceries') and two products ('Laptop' and 'Rice Bag') were successfully inserted.

Lab 5: Retrieving Data from the Database

Data was retrieved using EF Core queries:
- ToListAsync: to retrieve all products
- FindAsync: to find product by ID
- FirstOrDefaultAsync: to find expensive product (price > ₹50,000)
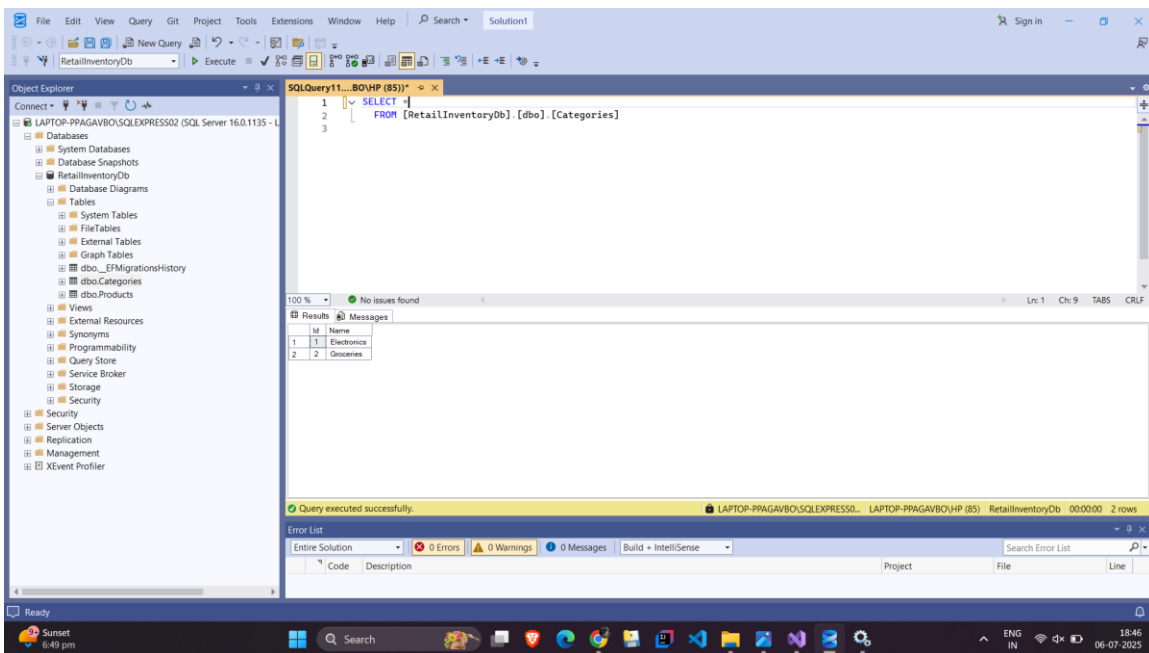The console output confirmed correct retrieval of data.

Screenshots

The following screenshots provide visual confirmation of Lab 4 and Lab 5 outputs:

- Data insertion and retrieval output from the console
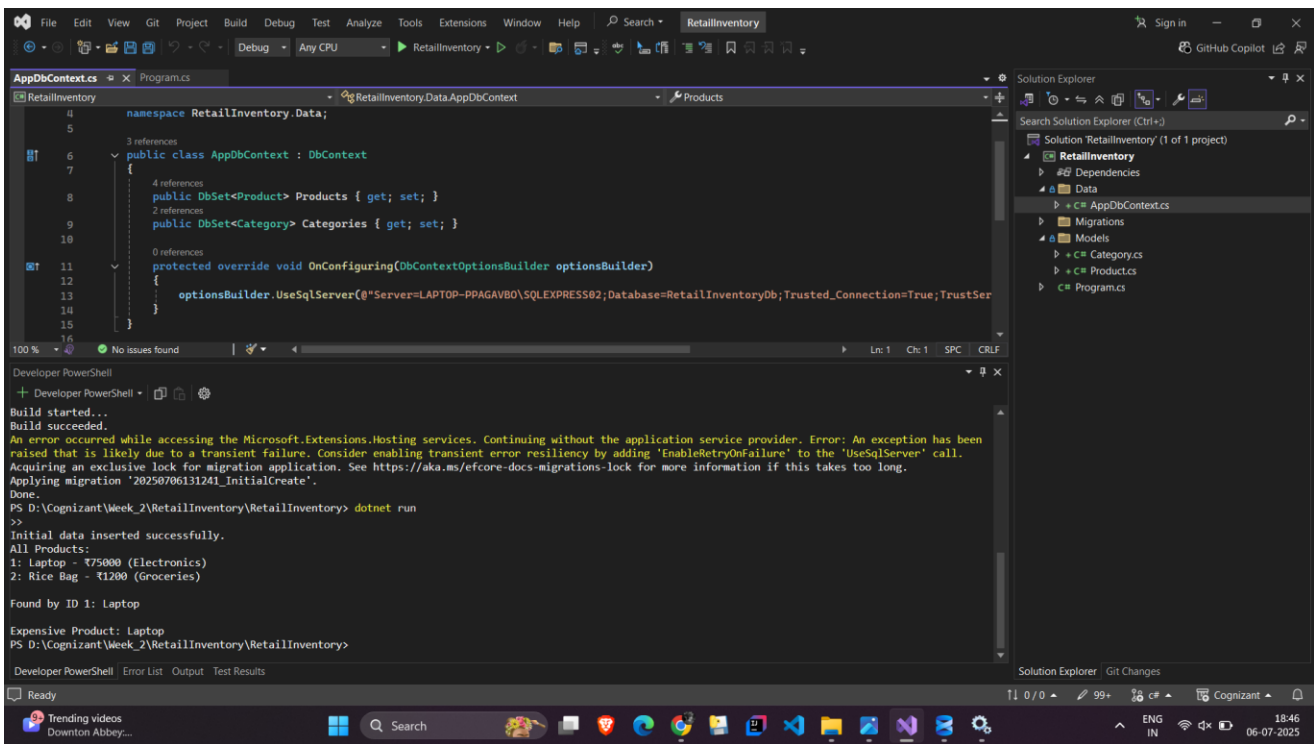
- SQL Server Management Studio: Products and Categories table content

SQLQuery12....BO\HP (87))*

```
1   SELECT *
2       FROM [RetailInventoryDb].[dbo].[Products]
3
```

100 %   ● No issues found   Ln: 1   Ch: 9   TABS   CRLF

Results | Messages

	Id	Name	Price	CategoryId
1	1	Laptop	75000.00	1
2	2	Rice Bag	1200.00	2

● Query executed successfully.   LAPTOP-PPAGAVBO\SQLEXPRESS0...   LAPTOP-PPAGAVBO\HP (87)   RetailInventoryDb   00:00:00   2 rows

Error List

Entire Solution   ⊗ 0 Errors   ⚠ 0 Warnings   ⓘ 0 Messages   Build + IntelliSense

	Code	Description	Project	File	Line

Object Explorer

Connect -

- LAPTOP-PPAGAVBO\SQLEXPRESS02 (SQL Server 16.0.1135 - L
  - Databases
    - System Databases
    - Database Snapshots
    - RetailInventoryDb
      - Database Diagrams
      - Tables
        - System Tables
        - FileTables
        - External Tables
        - Graph Tables
        - dbo._EFMigrationsHistory
        - dbo.Categories
        - dbo.Products
      - Views
      - External Resources
      - Synonyms
      - Programmability
      - Query Store
      - Service Broker
      - Storage
      - Security
  - Security
  - Server Objects
  - Replication
  - Management
  - XEvent Profiler

Ready