

EF Core 8.0 Guided Hands-On Exercises

Lab 1: Understanding ORM with a Retail Inventory System

1. What is ORM?

ORM stands for Object-Relational Mapping. It is a way to connect the code we write in C# with the database tables, without having to write SQL queries manually.

- A class in C# represents a table in the database.
- The properties of the class act as columns in the table.
- Each object (created using that class) is like a row in the table.
- Relationships like one-to-many or many-to-many can also be handled easily.

```
public class Student
{
    public int Id { get; set; }
    public string Name { get; set; }
}
```

2. Benefits of using ORM:

- Increases productivity (less code, faster development)
- Easier to maintain the code
- No need to write complex SQL — everything is done using C# objects

3. EF Core vs EF Framework (EF6)

Feature	EF Core	EF Framework (EF6)
Platform	Cross-platform (Windows, Linux, Mac)	Windows-only
Performance	Lightweight and fast	Slower and heavier
Modern Features	LINQ, async/await, compiled queries	Limited modern features
Flexibility	Highly customizable	Less flexible
Maturity	Newer, still evolving	More mature, stable for old apps

3. New features in EF Core 8.0

- JSON column mapping: You can store and query JSON data directly in a column, which is useful when data doesn't fit into normal tables easily.
- Compiled models: The models are pre-compiled, which makes the app start faster and improves performance.
- Interceptors: These allow you to monitor or change what EF is doing behind the scenes — good for logging, security, etc.
- Better bulk operations: Makes it easier and faster to insert, update, or delete lots of data at once.

4. Create a .NET Console App:

Additional information

Console App **C#** Linux macOS Windows Console

Framework [?](#)
[.NET 8.0 (Long Term Support)]

☐ Enable container support [?](#)

Container OS [?](#)
Linux

Container build type [?](#)
Dockerfile

☐ Do not use top-level statements [?](#)

☐ Enable native AOT publish [?](#)

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Configure your new project

Console App **C#** Linux macOS Windows Console

Project name
MyFirstConsoleApp_6363862

Location
C:\Users\soupt\source\repos

Solution name [?](#)
MyFirstConsoleApp_6363862

☐ Place solution and project in the same directory

Project will be created in "C:\Users\soupt\source\repos\MyFirstConsoleApp_6363862\MyFirstConsoleApp_6363862".

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5. Install EF Core Packages:

EF Microsoft.EntityFrameworkCore.SqlServer nuget.org

Versions: 0

Project	Version	Installed	Package Level
MyFirstConsoleApp_6363862			

Installed: not installed Uninstall

Version: Latest stable 9.0.6 Install

[Package source mapping is off. Configure](#)

EF Microsoft.EntityFrameworkCore.Design nuget.org

Versions: 0

Project	Version	Installed	Package Level
MyFirstConsoleApp_6363862			

Installed: not installed Uninstall

Version: Latest stable 9.0.6 Install

[Package source mapping is off. Configure](#)