Lab 1: Understanding ORM with a Retail Inventory System

ORM is a programming technique used to connect and manage data between object-oriented languages (like C#) and relational databases (like SQL Server). It acts as a bridge that maps C# classes and objects to database tables and rows.

C# Concept	Relational DB Concept
Class	Table
Object	Row (record)
Property	Column
Collection (List)	Foreign key relation

Code

```
public class Product
{
   public int Id { get; set; }          // → Maps to "Id" column
   public string Name { get; set; }     // → Maps to "Name" column
   public decimal Price { get; set; }   // → Maps to "Price" column
}
```

In the database, a table called **Products** will be created with columns **Id**, **Name**, and **Price**.

Benefits of ORM:

1.Productivity:

- Developers write less SQL code manually.
- Easy to perform CRUD (Create, Read, Update, Delete) operations using LINQ.

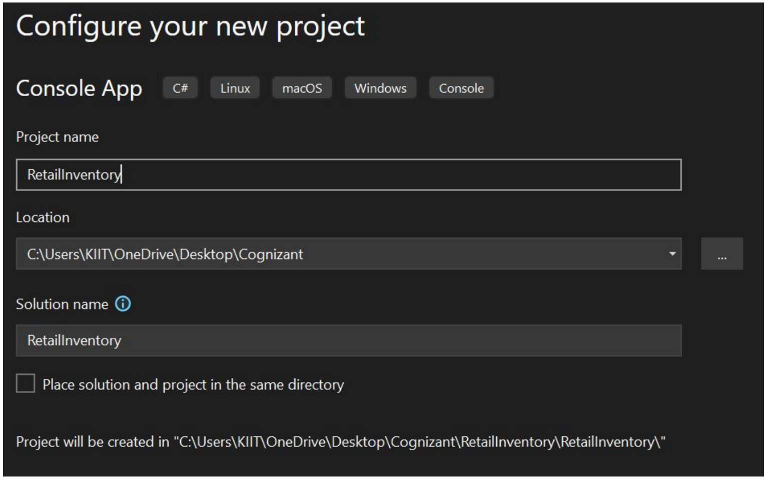
2.Maintainability:

- Database logic is encapsulated in C# classes.
- Changes to models automatically sync with the database using migrations.

3.Abstraction from SQL:

- Developers interact with C# objects, not SQL queries.
- Reduces errors and improves code readability.

Creating Console App in Visual Studio



Configure your new project

Console App

Project name

RetailInventory

Location

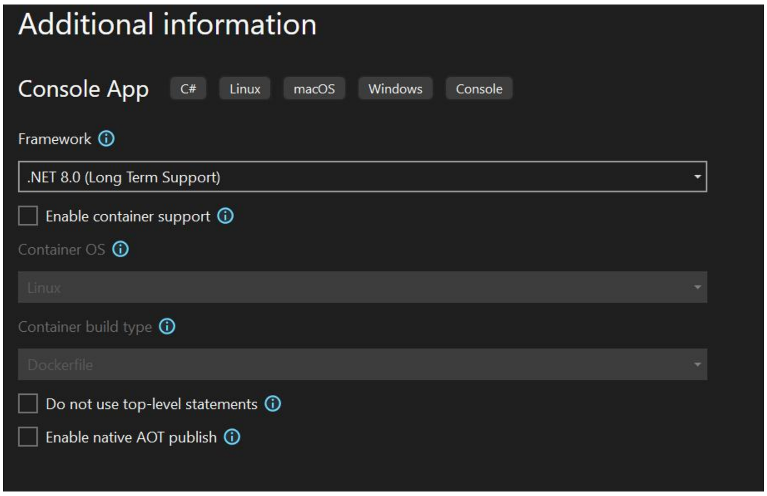
C:\Users\KIIT\OneDrive\Desktop\Cognizant

Solution name

RetailInventory

□ Place solution and project in the same directory

Project will be created in "C:\Users\KIIT\OneDrive\Desktop\Cognizant\RetailInventory\RetailInventory\"



Additional information

Console App

Framework

.NET 8.0 (Long Term Support)

□ Enable container support

Container OS

Linux

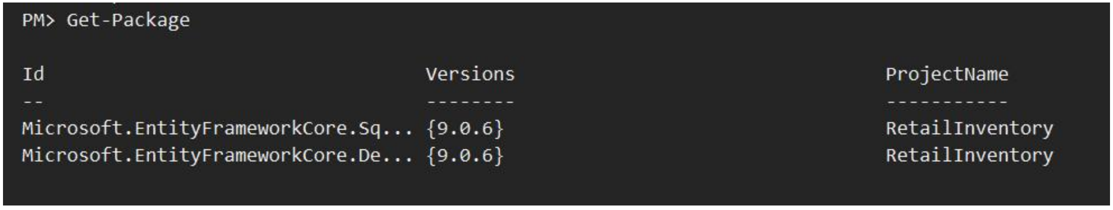
Container build type

Dockerfile

□ Do not use top-level statements

□ Enable native AOT publish

Installing EF Core Packages:



```
PM> Get-Package

Id                                Versions                             ProjectName
--                                --------                             -----------
Microsoft.EntityFrameworkCore.Sq... {9.0.6}                            RetailInventory
Microsoft.EntityFrameworkCore.De... {9.0.6}                            RetailInventory
```