## **Lab 1: Understanding ORM with a Retail Inventory System**

### **🔹 What is ORM?**

* **ORM (Object-Relational Mapping)** is a technique that maps **C# classes** to **database tables**, allowing developers to work with data using C# objects instead of raw SQL.
* For example:  
  + Product class maps to a Products table.
  + Each object instance maps to a row.

#### **🔸 Benefits:**

* **Productivity**: No need to write SQL manually.
* **Maintainability**: Easier to refactor.
* **Abstraction**: EF handles database logic, lets you focus on business logic.

### **🔹 EF Core vs EF Framework**

| **Feature** | **EF Core** | **EF6** |
| --- | --- | --- |
| Platform | Cross-platform (.NET Core) | Windows-only (.NET Framework) |
| Performance | Faster, optimized | Slower for modern apps |
| Features | Supports LINQ, async, compiled queries | More stable, but legacy |
| Use Case | Modern apps | Legacy Windows apps |

### **🔹 EF Core 8.0 New Features**

* **JSON Column Mapping**: Store structured data directly in SQL columns.
* **Compiled Models**: Boosts app startup and query performance.
* **Interceptors**: Add custom logic during DB operations.
* **Bulk operations**: Improved support for large inserts/updates.