## **1. What is ORM?**

**ORM (Object-Relational Mapping)** is a programming technique used to convert data between incompatible systems — specifically, between **object-oriented programming languages** like C# and **relational databases** like SQL Server.

In the context of C#:

* ORM maps **C# classes** to **database tables**.
* Each **property** in a class maps to a **column** in the table.
* Each **object instance** represents a **row** in the table.

### **Benefits of ORM:**

* **Productivity**: Developers can work with data using C# objects instead of writing raw SQL.
* **Maintainability**: Easier to manage and update as the project grows.
* **Abstraction**: Handles underlying SQL logic, so developers can focus more on business logic.

## **2. EF Core vs EF Framework**

| **Feature** | **EF Core** | **Entity Framework (EF6)** |
| --- | --- | --- |
| **Platform** | Cross-platform (.NET Core/.NET 5+) | Windows-only (.NET Framework) |
| **Lightweight** | Yes | No |
| **Modern Features** | Yes (LINQ, async queries, etc.) | Limited |
| **Performance** | High (supports compiled models) | Moderate |
| **Development Focus** | Actively maintained and updated | Legacy framework |
| **Flexibility** | Highly flexible and extensible | Less flexible |

EF Core is the modern version of Entity Framework and is recommended for new projects due to its better performance, cross-platform capabilities, and support for new features.

## **3. EF Core 8.0 Features**

Entity Framework Core 8.0 introduces several powerful features aimed at improving performance and developer productivity:

* **JSON Column Mapping**: Enables mapping of C# objects to JSON columns in the database, allowing complex data to be stored and queried as JSON.
* **Compiled Models**: Boosts performance by pre-compiling the database model during build time, reducing runtime startup cost.
* **Interceptors**: Lets developers hook into EF operations (e.g., query execution, save changes) to add logging, security, or custom logic.
* **Improved Bulk Operations**: Offers better support for performing operations (like inserts/updates/deletes) on large sets of data efficiently



