EF hands on

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1.**What is ORM? Object-Relational Mapping (ORM) in short:**

ORM is a programming technique that creates a "bridge" between object-oriented programming languages (like C#) and relational databases.

**The core idea is to map:**

**C# Classes** to **Database Tables**

**C# Properties** to **Database Columns**

**C# Objects (instances of classes)** to **Database Rows**

**How it works (briefly):**

**Abstraction:** You work with C# objects and their properties as if they are directly the data you want to store or retrieve.

**Mapping:** ORMs use conventions, attributes (like [Table], [Column], [Key]), or fluent API to define how your C# classes correspond to database schema elements.

**Automatic SQL Generation:** When you perform operations (like saving, querying, updating, deleting) on your C# objects, the ORM automatically translates these actions into the appropriate SQL queries (INSERT, SELECT, UPDATE, DELETE) for the underlying database.

**Data Materialization:** When data is retrieved from the database, the ORM converts the raw relational data back into fully-formed C# objects.

**Benefits:**

**Productivity:** Less manual SQL writing.

**Maintainability:** Cleaner, more object-oriented code.

**Database Agnosticism:** Easier to switch database types (to some extent).

**Reduced Errors:** Fewer SQL syntax errors and security vulnerabilities (e.g., SQL injection).