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what is the relation between ERD and UML?

used in many different diagrams for various purposes. ER diagrams do not focus on the software, but rather the modelling of databases, which are usually part of a software system. UML diagrams are broader, and have many uses, and ERDs only have one purpose.

| | UML | ERD |
|---|---|---|
| Full form | Unified Modeling Language | Entity Relationship Diagram |
| Definition | An easy to read system of symbols, shapes, and notations used in software system modeling and planning | A diagram that shows real-world items that exist in a database, and uses symbols and shapes to show relationships, attributes, and other important details |
| Key attributes | Class diagrams<br>Object diagrams<br>Sequence diagrams<br>Activity diagrams<br>Communication diagrams | Entities<br>Attributes<br>Cardinality<br>Ordinality<br>Number of relationship instances |
| Uses | Plan and model software systems<br>Show how entities operate within a system, with all possible interactions | Plan databases<br>Ensure all entities function properly<br>Defines attributes of entities |

EERD>>inheritance>>solid?

**EERD (Enhanced Entity-Relationship Diagram)**: Focuses on advanced database modeling, including concepts like specialization (breaking down entities into subtypes, like inheritance), unions, and aggregation.

**Inheritance**: Directly links to EERD's specialization, representing how new classes in Object-Oriented Programming (OOP) can inherit properties from existing ones.

**SOLID Principles**: These are five key OOP design principles (Single Responsibility, Open/Closed, Liskov Substitution, Interface Segregation, Dependency Inversion) aimed at creating robust, flexible, and maintainable software.

3-on which base PK?

- **Uniquely identify** each row.
- Are **never NULL**.
- Are **stable** (their values don't change).
- Are **minimal** (use the fewest columns necessary).
- Are **simple and efficient** (e.g., using integer data types).

4- Why would you create a primary key?

A primary key is the column or columns that contain values that uniquely identify each row in a table. A database table must have a primary key for Optim to insert, update, restore, or delete data from a database table. Optim uses primary keys that are defined to the database.

5- derived attribute?

1-**ERD/EERD (Design Phase):**

- In the Entity-Relationship Diagram, a derived attribute like "age" is **identified** (indicated by a dashed ellipse) as being calculated from another attribute (like "date-of-birth").
- At this stage, you **don't write the actual calculation logic**;

2-**Implementation Phase (SQL / Programming Languages):**

- **This is where the equations are written.**