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The mapping approach:

The relation model alternative used in this whole diagram is a combination of:

1. Class Table Inheritance (Table-per-Hierarchy) for ISA Relationships:

The ISA hierarchy between Ingredients and its subclasses (Pantry, FridgeLasting, FridgeUnlasting) and between Recipe and its subclasses (Breakfast, Lunch, Dinner, Other) is handled using Class Table Inheritance (Table-per-Hierarchy).

In this approach, each subclass (Pantry, FridgeLasting, etc.) has its own table with a foreign key that references the parent table (Ingredients or Recipe).

2. Normalized Many-to-Many and One-to-Many Relationships:

For relationships like Recipe ↔ Ingredients and User ↔ Recipe (through actions like Adds, Rates, Favourites), normalized join tables (e.g., Recipe_Ingredients, User_Recipes) are used.

This is a classic many-to-many relationship mapping strategy, where a join table connects two entities (like Recipe and Ingredients) by storing their foreign keys.