Recipeté Database Schema Documentation

1. Overview

The Recipeté database supports:

- User accounts & preferences
- Recipes (including imported recipes from TheMealDB)
- Ingredients & recipe ingredients
- Tags and recipe categorization
- Meal plans & scheduled meals
- Grocery lists & items
- Optional caching of external recipe data

The schema is normalized and relational, designed for scalability, extensibility, and integration with external services.

2. Entity–Relationship Model (Conceptual Overview)

Core Entities

- Users
- User Preferences (1–1 with Users)
- Recipes
- Ingredients
- Recipe Ingredients (junction)
- Recipe Steps
- **Tags** and **Recipe Tags** (junction)
- Meal Plans
- **Meal Plan Items** (scheduled meals)
- Grocery Lists
- Grocery List Items
- External Recipe Cache (raw JSON for imports)

Relationships

- A User → can have → many Recipes
- A Recipe → has → many Ingredients
- A Recipe → has → many Steps
- A Recipe → has → many Tags
- A User → has → one Preferences set
- A User → can have → many Meal Plans
- A Meal Plan → has → many Meal Plan Items
- A Meal Plan → optionally generates → Grocery Lists
- A Grocery List → contains → many Grocery List Items

3. Detailed Table Documentation

3.1 USERS

Stores all registered users.

Field	Type	Description
user_id	INT PK	Unique identifier
email	VARCHAR(255) UNIQUE	User email
password_hash	VARCHAR(255)	Hashed password
full_name	VARCHAR(255)	Optional name
created_at	DATETIME	Record creation time
updated_at	DATETIME	Updated time

3.2 USER_PREFERENCES

One row per user; stores settings used by the meal planner.

Field	Type	Description
user_id	INT PK/FK → users	Identifies user
dietary_preference	ENUM	Vegetarian, Vegan, etc.
max_prep_time_min	INT	Max cooking time
weekly_budget_cents	INT	Weekly budget
default_days_in_plan	INT	Default meal plan length
defaults_executive_mode	ENUM	NORMAL, LOW_SPOONS, etc.

3.3 INGREDIENTS

Ingredient catalog with optional Kroger mapping.

Field	Type	Description
ingredient_id	INT PK	
name	VARCHAR(255) UNIQUE	e.g., “Chicken Breast”
default_unit	VARCHAR(50)	e.g., g, tbsp
kroger_product_id	VARCHAR(100)	Optional
kroger_location_id	VARCHAR(50)	Optional
created_at	DATETIME	

3.4 RECIPES

Stores both user-created and imported recipes.

Field	Type	Description
recipe_id	INT PK	
user_id	INT FK	Null if imported
title	VARCHAR(255)	
description	TEXT	
total_time_min	INT	
servings	INT	
difficulty	ENUM	
is_public	BOOL	
source_type	ENUM('USER','THEMEALDB','OTHER')	Tracks where recipe came from
source_external_id	VARCHAR(100)	e.g. TheMealDB idMeal
source_url	VARCHAR(500)	Optional
thumbnail_url	VARCHAR(500)	For UI preview
youtube_url	VARCHAR(500)	If recipe has a video
created_at	DATETIME	
updated_at	DATETIME	

3.5 RECIPE_STEPS

Ordered list of instructions.

Field	Type	Description
step_id	INT PK	
recipe_id	INT FK	
step_order	INT	Rank/position
instruction	TEXT	

3.6 RECIPE_INGREDIENTS

Junction table connecting recipes ↔ ingredients.

Field	Type	Description
recipe_ingredient_id	INT PK	
recipe_id	INT FK	
ingredient_id	INT FK	
quantity	DECIMAL(10,2)	
unit	VARCHAR(50)	NULL uses default unit
note	VARCHAR(255)	“chopped”, “minced”, etc.

3.7 TAGS & RECIPE_TAGS

Tags categorize recipes by:

- Dietary preference
- Meal type
- Time cost
- Budget level
- Occasion
- etc.

Field	Type	Description
tag_id	INT PK	
name	VARCHAR(100) UNIQUE	
category	ENUM	

recipe_tags
Junction between recipes and tags.

3.8 MEAL_PLANS

Meal plans defined by the user.

Field	Type	Description
meal_plan_id	INT PK	
user_id	INT FK	
name	VARCHAR(255)	e.g. “Weeknight Dinners”

start_date	DATE	
end_date	DATE	
created_at	DATE	

3.9 MEAL_PLAN_ITEMS

Specific meals placed on specific days.

Field	Type	Description
meal_plan_item_id	INT PK	
meal_plan_id	INT FK	
plan_date	DATE	
meal_type	ENUM	Breakfast/Lunch/Dinner/Snack
recipe_id	INT FK	
notes	VARCHAR(255)	

3.10 GROCERY_LISTS

Lists generated from meal plans.

Field	Type	Description
grocery_list_id	INT PK	
user_id	INT FK	
meal_plan_id	INT FK NULL	Optional
name	VARCHAR(255)	
created_at	DATETIME	

3.11 GROCERY_LIST_ITEMS

Aggregated items to purchase.

Field	Type	Description
grocery_list_item_id	INT PK	
grocery_list_id	INT FK	
ingredient_id	INT FK	

quantity	DECIMAL(10,2)	
unit	VARCHAR(50)	
is_purchased	BOOL	
kroger_product_id	VARCHAR(100)	Optional

3.12 EXTERNAL_RECIPE_CACHE

Stores TheMealDB JSON responses to avoid re-fetching.

Field	Type	Description
cache_id	INT PK	
source_type	ENUM('THEMEALDB')	
source_external_id	VARCHAR(100)	
raw_json	JSON	
fetched_at	DATETIME	

4. Foreign Key Dependencies (Quick Reference)

- user_preferences.user_id → users.user_id
- recipes.user_id → users.user_id
- recipe_steps.recipe_id → recipes.recipe_id
- recipe_ingredients.recipe_id → recipes.recipe_id
- recipe_ingredients.ingredient_id → ingredients.ingredient_id
- recipe_tags.recipe_id → recipes.recipe_id
- recipe_tags.tag_id → tags.tag_id
- meal_plans.user_id → users.user_id
- meal_plan_items.meal_plan_id → meal_plans.meal_plan_id
- meal_plan_items.recipe_id → recipes.recipe_id
- grocery_lists.user_id → users.user_id
- grocery_lists.meal_plan_id → meal_plans.meal_plan_id
- grocery_list_items.grocery_list_id → grocery_lists.grocery_list_id
- grocery_list_items.ingredient_id → ingredients.ingredient_id