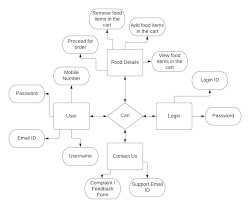
**Entity-Relationship Diagram (ERD) for Food Waste Analysis**

[](https://www.irjmets.com/uploadedfiles/paper/issue_2_february_2023/33963/final/fin_irjmets1677759171.pdf)

ERD for food waste analysis

**Explanation:**

* **Household:** Represents individual households.

**Attributes:** household\_id, location, income\_level, number\_of\_members, household\_size

* **FoodItem:** Represents different types of food.

**Attributes:** food\_item\_id, name, category (e.g., fruits, vegetables, grains)

* **Purchase:** Represents a purchase of a food item.

**Attributes:** purchase\_id, household\_id, food\_item\_id, quantity, purchase\_date

* **Consumption:** Represents the consumption of a food item.

**Attributes:** consumption\_id, household\_id, food\_item\_id, quantity, consumption\_date

* **Waste:** Represents the disposal of a food item.

**Attributes:** waste\_id, household\_id, food\_item\_id, quantity, waste\_date, reason\_for\_waste (e.g., expired, moldy, uneaten)

* **Recipe:** Represents a recipe that includes multiple food items.

**Attributes:** recipe\_id, name, instructions

* **RecipeIngredient:** Represents a food item used in a recipe.

**Attributes:** recipe\_ingredient\_id, recipe\_id, food\_item\_id, quantity

* **MealPlan:** Represents a planned meal for a household.

**Attributes:** meal\_plan\_id, household\_id, meal\_date, meal\_type (e.g., breakfast, lunch, dinner)

* **MealPlanItem:** Represents a food item included in a meal plan.

**Attributes:** meal\_plan\_item\_id, meal\_plan\_id, food\_item\_id, quantity

**Relationships:**

* **One-to-many:**

A household can have many purchases, consumptions, and waste events.

A food item can be purchased, consumed, and wasted multiple times.

A recipe can have many ingredients.

A meal plan can have many items.

* **Many-to-many:**

A food item can be included in many recipes.

A recipe can include many food items.