Northeastern University
CS5200 – DBMS
Spring 2025
Professor Derbinsky
Erdun E
Mar 07, 2025

Logging Coffee Database Description

This document is a description of the CS5200 Database Management System 2025 Spring final project milestone. It describes the structure and purpose of the Coffee Tasting Database, including the entities involved, their relationships, constraints, and the extracted information for reporting. The database is designed to store information about coffee beans, roasters, products, user tasting logs, and ratings.

1 What Entities Are Involved

1.1 Users

Users log their coffee tastings, providing ratings and tasting notes. Each user has a unique ID, email, username, password, and account creation time.

1.2 Products

Coffee products offered by different roasters. Each product has a unique ID, associated with a roaster, name, roast date, roast level, and price per 100g.

1.3 Roasters

Coffee roasters that produce and distribute coffee products. Each roaster has a unique ID, and associated with a location, name, website, and abandoned status.

1.4 Beans

Coffee beans has a unique ID associated with a farm, specific varietal and processing method.

1.5 Farms

Farms where coffee beans are grown. Each farm has a unique ID, name, associated with a location and an elevation.

1.6 Locations

Geographic locations (city, region, country) where farms and roasters are situated.

1.7 Ratings

A predefined set of rating values from 1 to 5 and its description that users can assign to coffee tastings.

1.8 TastingLogs

Records of user tastings, including a unique ID, belong to which user, product ID, tasting date, rating, brewing method, grind size, water temperature, bloom count and user notes.

1.9 TastingNotes

Flavor key words that roaster assign to each products and users can also assign to coffee tastings.

1.10 Products$_{B}eans$

A linking table associates coffee products with the beans they contain and also record the percentage and role of beans for each product.

1.11 Products$_{T}astingNotes$

A linking table that connects coffee products with general tasting notes.

1.12 TastingLogs$_{T}astingNotes$

A linking table connects user tasting logs with the specific tasting notes assigned.

2 How The Entities Relate/Constrain Each Other

- A User can have multiple TastingLogs, but each log belongs to only one user.
- Each coffee product is associated with one roaster.
- Each coffee product consists of one or more beans, defined in the Products_Beans table, which also specifies whether a bean is primary or part of a blend.
- Each bean is sourced from a single farm, meaning a farm can supply multiple beans but each bean comes from only one farm.
- Each farm belongs to a single location (country, region).
- Each roaster belongs to a single location (country, city).
- Each tasting log records a tasting event for one specific product.
- Each tasting log includes an optional rating selected from the Ratings table.
- A tasting log can have multiple tasting notes assigned by the user.

- Each product may have official tasting notes assigned.

3 What Information Needs To Be Extracted/Presented

3.1 Top rated coffee varietals by processing method

Identifies the highest rated coffee bean varietals for each processing method (e.g., Washed, Natural).

3.2 Rating distribution across roast levels

Analyzes how different roast levels (Light, Medium, Medium-Dark, Dark) impact coffee ratings.

3.3 Best coffee producing countries

Determines which country produces the highest-rated coffee beans.

3.4 Price to rating correlation

Investigate whether more expensive coffee products tend to receive higher ratings.

3.5 Highest rated coffee roasters

Identifies roasters whose products receive the highest average ratings.