

# Entity Relationship Diagram Description

## Entities

### Users

Attribute	Domain	Description
id	positive integers	surrogate key
username	any utf8 characters	login name
password	any utf8 characters	encrypted password
first_name	any utf8 characters	given name
last_name	any utf8 characters	surname

### Workout Types

Attribute	Domain	Description
id	positive integers	surrogate key
mets_code	positive integers	metabolic equivalent code
mets_value	1.0 to 99.9	metabolic equivalent value
category	any utf8 characters	activity category
activity	any utf8 characters	activity
intensity	any utf8 characters	activity intensity
description	any utf8 characters	activity description

### Nutrients

Attribute	Domain	Description
id	positive integers	surrogate key
name	any utf8 characters	nutrient name
rdv_amount	positive numbers	recommended daily intake
rdv_unit	'g','mg','mcg'	unit of measure

## Foots/Beverages

Attribute	Domain	Description
id	positive integers	surrogate key
type	'solid','liquid'	food or beverage?
name	any utf8 characters	name of food
calories_per_serving	positive integers	kiloCalories per serving
serving_size_friendly	any utf8 characters	serving size in non-metric units
serving_size_grams	positive integers	serving size mass (grams)
serving_size_cc	positive integers	serving size volume (cc/mL)

## Relationships

### Micronutrient Content

Attribute	Domain	Description
food_id	positive integers	food id
nutrient_id	positive integers	nutrient id
percent_dv	positive integers	how much of the nutrient (percent daily value)

### Macronutrient Content

Attribute	Domain	Description
food_id	positive integers	food id
nutrient_id	positive integers	nutrient id
amount	positive numbers	how much of the nutrient (mass)

### Weight Log

Attribute	Domain	Description
date	unix timestamp	unix timestamp
user_id	positive integers	user id
weight_kg	positive numbers	weight in kilograms

### Workout Log

Attribute	Domain	Description
date	unix timestamp	unix timestamp
user_id	positive integers	user id
workout_type_id	positive integers	workout
duration_seconds	positive integers	workout duration in seconds

## Food Log

Attribute	Domain	Description
date	unix timestamp	unix timestamp
user_id	positive integers	user id
food_id	positive integers	food id
servings	positive numbers	how many servings of each food

## Assumptions

- User account passwords will actually be encrypted hashes, rather than plaintext passwords.
- Macronutrients and Micronutrients can both be stored in the same nutrients table, but are stored in different tables for convenience. Recommended daily value percentages can be calculated by dividing the mass of any nutrient in a food by that nutrient's RDV amount.
- Users can specify their preferred unit of any food, eg. "half cup", "one egg", "sleeve of cookies", but they will also have to specify the serving size in mass/volume units that can be converted to metric.
- The number of servings that a user has eaten can optionally be calculated by dividing the mass or volume of the eaten food by the mass or volume of the standard serving size.