

Justin McLain, Z1910087

I started out with the entity of the USER this user has a surrogate key in the form of an ID, this is necessary because multiple users can have the same name so to assign an ID gives that user a database specific to them. A natural key was not used because a surrogate key would be more efficient as its numbers and not names so finding the user would be easier. Also surrogate keys are guaranteed to be unique, which is good when needing to find the specific user. This user also has attributes of a password and username in order to login to the application that has all their data in the first place.

This user then has a relationship with the app for inputs the user can input many to many inputs. These inputs include weight gained, lost, or maintained, Also food and drink and lastly a physical activity input.

The entity for weight gained lost or maintained can be entered with a precision of two as to help see more significant results because one person may or may not gain an extensive amount of weight and more precision helps. This input is also one to many, because the user will be inputting a single weight in at a single point in time. If the user wishes to input weight again, they simply can select to input a new weight in.

The entity for food in drinks has a cardinality of many to many. The user has the option to input multiple foods at once because it is unlikely that a person will only eat one type of food in a meal so it allows it to be more open ended. Food and drinks also has a attribute to allow for serving size so data can be stored rather and shown to the user in a different form rather than just storing what food they ate. This also helps with calorie tracking and showing a graph.

Lastly is the physical activity entity, this has a relationship of inputs of many to many as the user again will more than likely enter multiple different exercises. The physical activity entity has an attribute of duration and intensity. This is useful to compare to workouts prior that were entered.

All these entities are attached to a relationship that stores the data in a database that includes diet, exercise, and weight which can all be viewed by the user. The entities relationship to the database is many to many as there will be a lot of data going into said database for later use as well as to use the features of the database which include attributes such as, a food database, a line graph of the users weight over time, a calorie tracker for inputted food and drinks, a macro and micronutrient tracker so the user can see their completion for the day towards the recommended amount, a pie graph of the micro and macro nutrients as well which can be broken up into for the day, for the week, or for the month. And lastly a graph of calories consumed for each day of the week.