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Description:
This database tracks various aspects of my day to day life and looks at different physical attributes to gauge how I am doing. The food I eat is logged based on name,time of day eaten and date, whether I considered it a healthy decision, my mood, and the current weight at time of eating. The sleep that I get is logged based on what time I slept, how long I slept, the date I slept, my mood, and whether I felt rested or not. Each day is tracked based date and on my alertness and mood based on numbers ranging from 1 to 10 with 10 being extremely alert or happy. Excercise is logged based on the body part, the time spent exercising, my mood, and the exercise date. The strong entities are the food, day, sleep, and exercise variables. My food_tally is a weak entity that is dependent on the other factors.The primary keys are time of day and date for food, sleep is date I slept, day is based on date, and exercise is based on exercise date.

Three main entities:

food(<food_id>,<date>,healthy,name)
exercise(<exercise_id>,date,mood,body_part)
sleep(<sleep_id>,date,mood,rest,how_long)

Weak Entity:

food_tally(<tally_id>protein,calories,mood,{date,food_id})

We will implement the following functionality using Java and SQL with necessary GUI interfaces:

1.Insert/delete/update/read a food report (all attributes except the food id). The member id should be generated by the system automatically using MySQL autoincrement.
2.Insert/delete/update/read an exercise report(all attributes except the exercise id). The paper id should be generated by the system automatically using MySQL autoincrement.
3.Insert/delete/update/read a sleep report (all attributes except the sleep id). The report id should be generated by the system automatically using MySQL autoincrement.

3 trivial queries:

1. List food where protein > 50
SELECT name FROM food WHERE protein > 50;

2. List date and bodypart where mood >7.

SELECT datetime, body_part FROM exercise WHERE mood >7;
3. Count sleep when > 6 hours.
SELECT COUNT(*) FROM sleep WHERE how_long > 6;

5 non-trivial queries:

1.List foods eaten based on which mood level.
SELECT date(food.datetime),food.name, food.healthy, food.mood, sleep.how_long FROM food JOIN sleep ON date(food.datetime) = date(sleep.datetime) AND food.mood = sleep.mood;

2. List alertness and sleep based on mood and count the amount of hours slept based on mood.
SELECT day.alertness, sleep.how_long from day join sleep ON sleep.mood = day.mood GROUP BY sleep.mood;

3. List the moods on days where no exercise was done.
SELECT day.mood, date(day.datetime) FROM day WHERE NOT IN (SELECT date(datetime) FROM exercise);

4. List alertness and mood based on the sum of protein from the foods eaten on that day.
SELECT day.alertness,day.mood, SUM(food.protein) FROM food JOIN day on date(day.datetime) = date(food.datetime) GROUP BY date(food.datetime);

5. List rest based on if that specific day had calories > 1400 in total.
SELECT food.calories, sleep.rest FROM food join sleep on date(food.datetime) = date(sleep.datetime) WHERE SUM(food.calories) > 1400 GROUP BY date(food.datetime);