John Holtzworth, Matthew Abney, Jessica Haeckler

Relational Schema and Refinement – CSC 545

Relational Schemas:

recipe(ID, name, instructions, category)

meal(ID, mealName)

mealPlan(ID, breakfast, lunch, dinner, date)

user(ID, username, password, firstName)

fridge(ID)

food(ID, name, group, calories, sugar, protein, sodium, fat, cholesterol, carbs)

recipeMeal(recipeID, mealID)

mealPlanMeal(mealPlanID, mealID)

mealPlanUser(mealPlanID, userID)

userFridge(userID, fridgeID)

fridgeFood(fridgeID, foodID, quantity)

recipeFood(recipeID, foodID, quantity)

Functional Dependencies:

(N/A if there are no non-trivial functional dependencies)

recipe: ID -> name, instructions, category

meal: ID -> mealName

mealPlan: ID -> breakfast, lunch, dinner, date

user: ID -> username, password, firstName

fridge: N/A

food: ID -> name, group, calories, sugar, protein, sodium, fat, cholesterol, carbs

recipeMeal: N/A

mealPlanMeal: N/A

mealPlanUser: N/A

userFridge: N/A

fridgeFood: fridgeID, foodID -> quantity

recipeFood: recipeID, foodID -> quantity

Refinement:

Our relational schemas are already in 3NF and therefore do not require any further refinements.

Justification:

As shown in the functional dependencies above, every attribute in each of our tables depend on only one key.