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COM S 363

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Homework 1 part 2

Question a

No, the owner can't insert the Mango and Sticky Rice because iid is also a primary key and therefore cannot be null and must be unique.

Question b

Design 1

No, because if you make an "ingredient", the "amount" cannot be stored if there is no "fid". In other words, an "ingredient" can only be created if there is an existing "food".

Design 2

No, because you need the "iid" to store "amount" due to the dependency where $\{fid, iid\} \rightarrow \{amount\}$. While "iid" isn't a primary key in "recipe", technically a "recipe" could be made without an "ingredient", breaking the dependency.

Design 3

No, because of a similar issue to Design 1, where a "food" can be made but the "amount" cannot be stored if there is no "iid".

Design 4

Yes, because you need the "fid" to make the "food", an "iid" to make the ingredient, and "fid" and "iid" to make the "recipe" since "amount" requires both a "fid" and an "iid".