PRESENTATION-1   14/09/2022

① User is allowed to input atmost _8 ingredients_.

② We want frequently _occuring ingredients to have higher chance of selection_ than the _rarely occuring ingredients across the recipes._
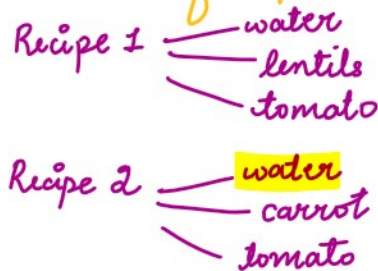
1) Recipe - Ingredient Mapping (one to many mapping)

Recipe 1 — water
         — lentils
         — tomato

Recipe 2 — water
         — carrot
         — tomato
         — water

⬇

2) Same ingredient is present more than once in the same recipe.
   (Removal of duplicates)

Recipe 1 — water
         — lentils
         — tomato

Recipe 2 — water
         — carrot
         — tomato

⬇

3) Find **count** of each ingredient across all the recipes.

water — 200
lentils — 40
tomato — 300
carrot — 100

⬇

4) Find the probability of selection of each ingredient.

$$P(ingredient) = \frac{Count\ of\ ingredient\ across\ recipes}{Count\ of\ recipes}$$

Say, count of recipes = 640

P(water) = 200/640 = 0.312 ⟶ frequently used ingredient ⟶ higher chances of selection in recipe

P(lentils) = 40/640 = 0.062

P(tomato) = 300/640 = 0.468 ⟶ rarely used ingredient ⟶ lower chances of selection in recipe

P(carrot) = 100/640 = 0.156

PROBLEMS FACED:

Problem : Say the user enters the following ingredients:

water $\longrightarrow$ P(water)   = 0.312

tomato $\longrightarrow$ P(tomato)   = 0.468

lentils $\longrightarrow$ P(lentils)   = 0.062

Lentils might get rejected from the generated recipe since it has lower probability of selection.