



# RECIPE FINDER

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# MENU

Domain & Goals

Dataset

Techniques




Demonstration

Limitations



Lesson Learned

# Domain & Goals

**Clients are ...**

-  **Hobby Cooks**
-  **Housewives / Househusbands**
-  **...**

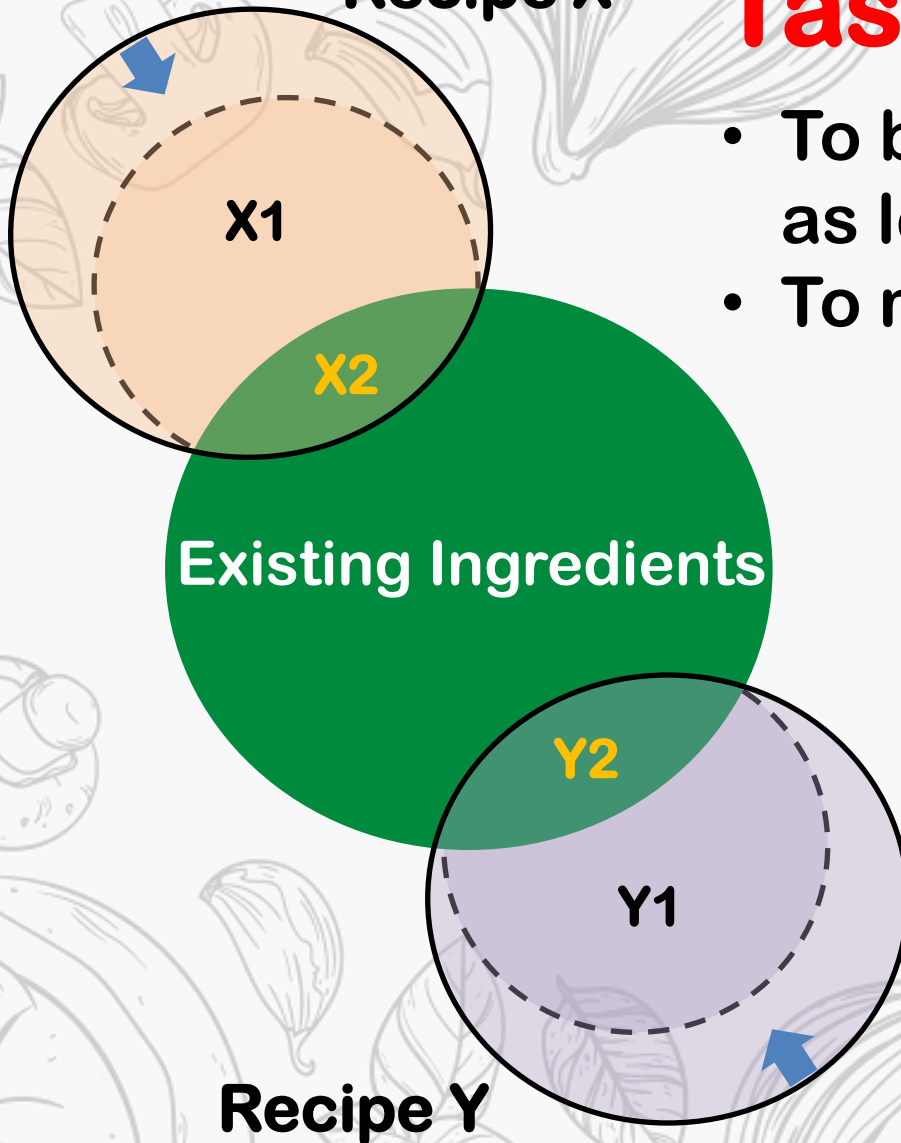
**Help them cook dishes...**

-  **with min. needs for extra ingredients**
-  **with max. usage of existing ingredients**

**Recipe X**

# Task 1

- To buy **extra ingredients** as less as possible
- To minimize X1 and Y1

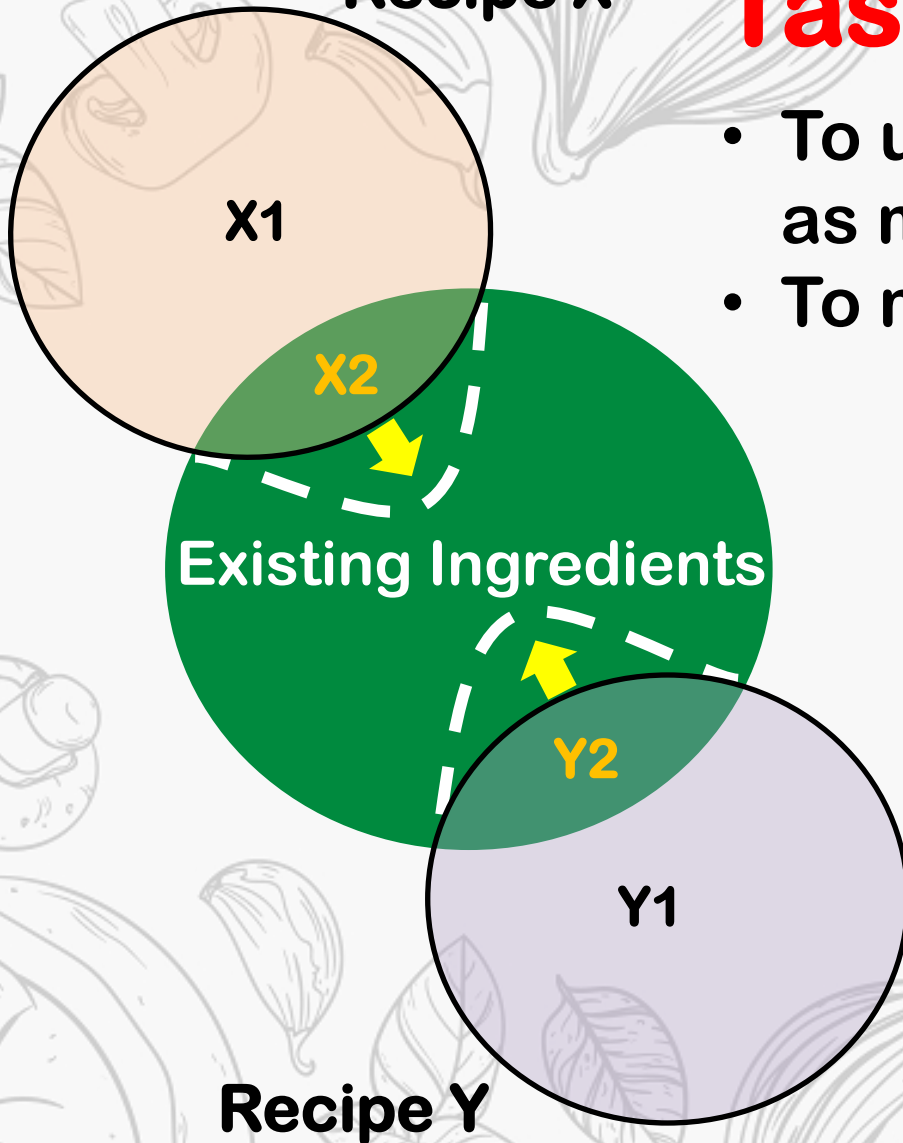




Recipe X

## Task 2

- To use **existing ingredients** as much as possible
- To maximize X2 and Y2



# Datasets

## Foodista



**204 recipes**



**2,036 ingredients**



**7,296 categories**

# Datasets

Foodista



Example

```
<.../recipe/2222B2RC> <.../#type> <.../schema/Recipe>.  
<.../recipe/2222B2RC> <.../terms/title> "Mango Lassi/smoothie".  
<.../recipe/2222B2RC> <.../depiction> ".../images/552e7a4b.jpg".  
<.../recipe/2222B2RC> <.../description> "Lassi Is A Dessert...".  
<.../recipe/2222B2RC> <.../ingredient> <.../food/7NS2DSKS>.
```

# Datasets

## Foodista



### Example

<.../food/223N2653>	<.../#type>	<.../schema/Food>.
<.../food/223N2653>	<.../#label>	"Nigari Extra Firm Tofu".
<.../food/223N2653>	<.../depiction>	".../images/b50b2.jpg".
<.../food/223N2653>	<.../description>	"There Are Different ...".

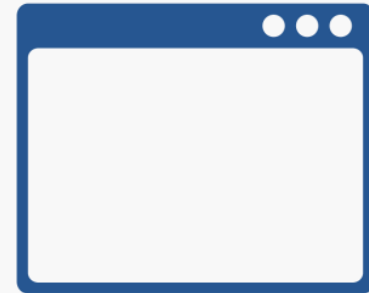


# Techniques

**SPARQL  
Server**



**Web  
Browser**



HTTP request  
←→  
HTTP response



# Task 1

(existing: “A”, “B”, and “C”; unwanted: “D”, “E”, and “F”)

```
SELECT DISTINCT ?title (COUNT (DISTINCT ?lable) as ?count)
(GROUP_CONCAT(DISTINCT ?lable; SEPARATOR=",") as ?lableALL)
WHERE {
```

```
    ?recipeID      :isTypeOf      :Recipe.
    ?recipeID      :hasIngredientID ?ingredientID.
    ?ingredientID  :hasLable       "A".
    ... (same for "B" and "C")
```

```
    FILTER NOT EXISTS {
```

```
        VALUES ?lableUNWANTED { "D" "E" "F" }
```

```
        ?recipeID      :hasIngredientID ?ingredientID.
        ?ingredientID  :hasLable       ?lableUNWANTED.
    }
```

```
    ?recipeID      :hasTitle      ?title.
    ?recipeID      :hasIngredientID ?ingredientID.
    ?ingredientID  :hasLable      ?lable.
```

```
}
GROUP BY ?recipeID ?title ORDER BY ?count
```

# Task 2

(existing: “A”, “B”, and “C”; unwanted: “D”, “E”, and “F”)

```
SELECT DISTINCT ?title (COUNT (DISTINCT ?lable) as ?count)
(GROUP_CONCAT(DISTINCT ?lable; SEPARATOR=",") as ?lableALL)
WHERE {
  VALUES ?lableEXISTING {"A" "B" "C"}.
  ?recipeID :hasTitle ?title.
  ?recipeID :hasIngredientID ?ingredientID1.
  ?ingredientID1 :hasLable ?lableEXISTING.

  ?recipeID :isTypeOf :Recipe.
  ?recipeID :hasIngredientID ?ingredientID2.
  ?ingredientID2 :hasLable ?lable.

  FILTER NOT EXISTS {
    VALUES ?lableUNWANTED { "D" "E" "F" }
    ?recipeID :hasIngredientID ?ingredientID.
    ?ingredientID :hasLable ?lableUNWANTED.
  }
}
GROUP BY ?recipeID ?title ORDER BY ?count
```



# Let's get cooking!



# Known Limitations

- Required amount of ingredients
- Procedures for preparation & cooking
- Limited queries –
  - Open World Assumption
- Synonyms –
  - "Potato" vs. "Kartoffel"



 Q & A 

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