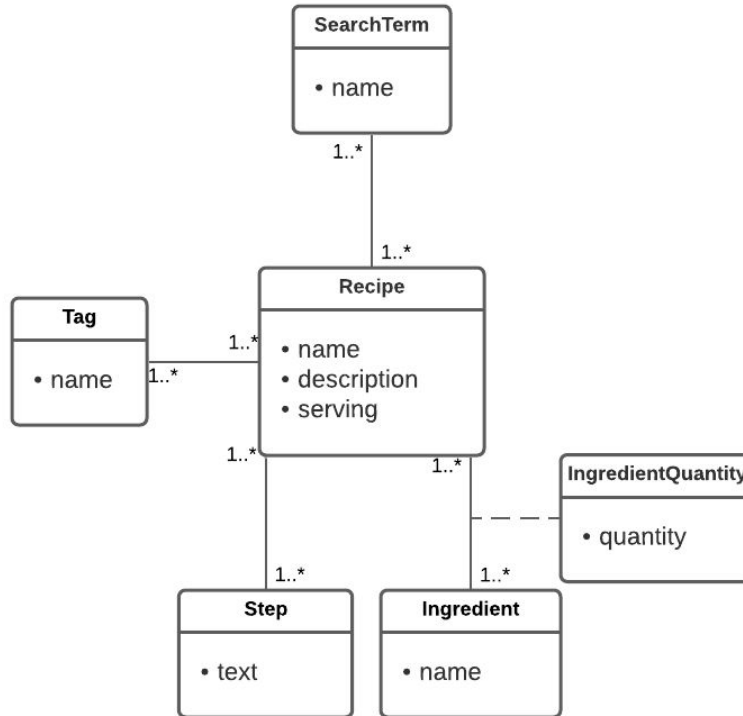# Food.com Recipes

Information Processing and Retrieval
Milestone 1 - Data Preparation

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Data Model

Information Retrieval Tool

Documents

```
{
  "name":"Grilled Garlic Cheese Grits",
  "description":"We love grits, this is another
  "ingredients":["[\"4   cups    water\",\"1
  "serving_size":155,
  "servings":8,
  "steps":["['I a sauce pan, bring water to a b
  "tags":["['time-to-make', 'course', 'main-ing
  "search_terms":["{'diabetic', 'low-calorie',
  "id":"029a2127-9869-4dc1-b416-e4bb76fc623f",
  "identifier":96313,
  "_version_":1719306244848615424},
{
```

- A recipe is a document composed by several fields

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Schema

- Created 4 new field types:

  `listField,`

  `ingredientsField,`

  `bodyField, titleField`

- New fields for all the attributes of a recipe

```
"name": "ingredientsField",
"class": "solr.TextField",
"analyzer": {
    "tokenizer": {
        "class": "solr.ClassicTokenizerFactory"
    },
    "filters": [
        { "class": "solr.StopFilterFactory", "words": "stop.txt", "ignoreCase": "true" },
        { "class": "solr.ASCIIFoldingFilterFactory", "preserveOriginal": true },
        { "class": "solr.LowerCaseFilterFactory" },
        { "class": "solr.EnglishMinimalStemFilterFactory" }
    ]
}
```

```
"name": "ingredients",
"type": "ingredientsField",
"indexed": "true",
"stored": "true",
"required": "true",
"multiValued": "true"
```

Retrieval and Evaluation

1. **Which desserts are appropriate for diabetic people?**

2. **What recipes can be made for a Christmas dinner?**

3. How to make a pancake without a pan or a griddle?

4. What recipe should be used to make a lasagna dish for an 8-people dinner?

Retrieval (1)

Which desserts are appropriate for diabetic people?

Request-Handler (qt)
`/select`

— common —

q
`diabetic dessert`

q.op
`OR`

fq
`tags:diabetic`
`tags:dessert`

sort

start, rows
`0` `10`

fl
`identifier name description ingredients serving_size ser`

df

wt

`http://localhost:8983/solr/recipes/select?defType=edismax&fl=identifier%20name%20description%20ingredients%20serving_size%20servings%20steps%20tags&fq=tags%3Adessert&fq=tags%3Adiabet`

```
{
  "responseHeader":{
    "status":0,
    "QTime":16,
    "params":{
      "q":"diabetic dessert",
      "defType":"edismax",
      "indent":"true",
      "qf":"name^5 search_terms^3 tags^3 ingredients^3 description steps",
      "fl":"identifier name description ingredients serving_size servings steps tags",
      "q.op":"OR",
      "fq":["tags:diabetic",
        "tags:dessert"],
      "wt":"json",
      "_":"1639658970650"}},
  "response":{"numFound":265,"start":0,"numFoundExact":true,"docs":[
    {
      "name":"Quick & Easy Diabetic Tiramisu",
      "description":"Trying to lighten up my food life style...and still enjoy it!  This came from the American Diabetes Association. Now you CAN have your cake and eat it too! Calories-135
      "ingredients":["[\"1/2  cup   warm filtered water\",\"1   tablespoon    instant coffee granules\",\"2 (3 1/2   ounce) packages   sugar-free instant vanilla pudding mix\",\"2   cups
      "serving_size":93,
      "servings":12,
      "steps":["['In small bowl, combine the water and coffee granules; stir to dissolve the coffee. Set aside 1 tbsp of the mixture.', 'In a large bowl, beat pudding mix and milk until thi
      "tags":["['time-to-make', 'course', 'main-ingredient', 'preparation', 'occasion', 'desserts', 'eggs-dairy', 'easy', 'beginner-cook', 'diabetic', 'dietary', 'inexpensive', 'taste-mood'
      "identifier":115213},
```

Qf: name^5 search_terms^3 tags^3 ingredients^3 description steps
Tags: diabetic, dessert

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Retrieval (2)

What recipes can be made for a Christmas dinner?

Qf: name^5 search_terms^3 tags^3 ingredients^3 description steps
Tags: christmas
Search Terms: dinner

Evaluation (1)

Metric	Value
Average Precision	0.805873
Precision at 10 (P@10)	0.8

Table 1: *Results from Retrieval Task (1) - Default*

Metric	Value
Average Precision	1.0
Precision at 10 (P@10)	1.0

Table 2: *Results from Retrieval Task (1) - Filtered*
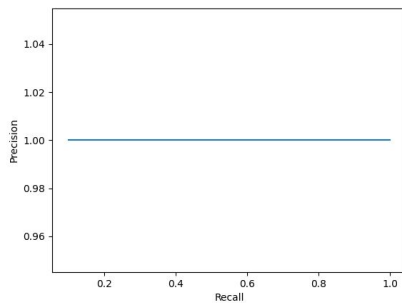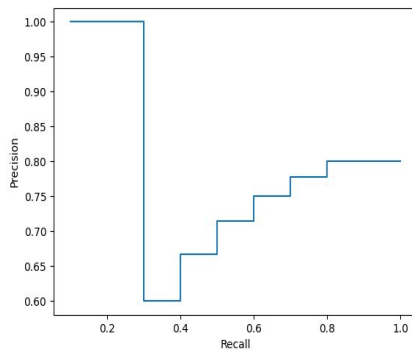
Evaluation (2)

Metric	Value
Average Precision	0.569643
Precision at 10 (P@10)	0.6

Table 3: *Results from Retrieval Task (2) - Default*

Metric	Value
Average Precision	1.0
Precision at 10 (P@10)	1.0

Table 4: *Results from Retrieval Task (2) - Filtered*