



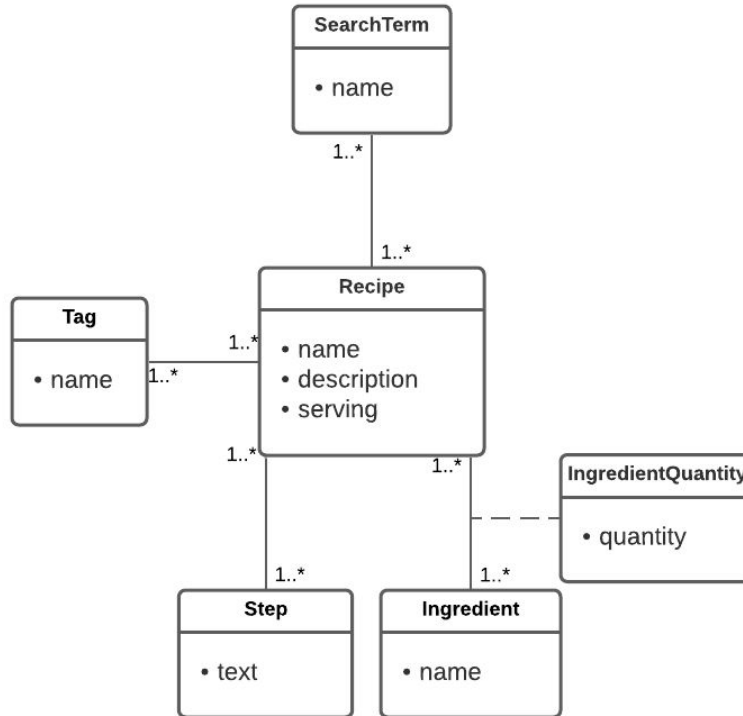
Food.com Recipes

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



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 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

Retrieval (2)

What recipes can be made for a Christmas dinner?

Request-Handler (qt)

/select

— common

q

christmas dinner

q.op

OR

fq

tags:christmas

search_terms:dinner

sort

start, rows

0 10

fl

identifier name description ingredients servi

df

wt

json

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

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 6,
    "params": {
      "q": "christmas dinner",
      "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:christmas", "search_terms:dinner"],
      "wt": "json",
      " _": "1639665102685"
    }
  },
  "response": {
    "numFound": 1091,
    "start": 0,
    "numFoundExact": true,
    "docs": [
      {
        "name": "Christmas Salad",
        "description": "Snowflakes and crimson bulbs atop Christmas trees...figuratively speaking. I accidentally invented this savory salad which can a.",
        "ingredients": "[\\\"8 cups fresh spinach, cleaned \\\", \\\"1/2 cup dried cranberries (craisins)\\\", \\\"1/4 cup sliced almonds\\\", \\\"1/4 cup",
        "serving_size": 106,
        "servings": 4,
        "steps": [\"Microwave bacon for about five minutes (cover with paper towel) or until almost crisp.\", \"Reserve bacon grease for hot bacon dressing",
        "tags": [\"bacon\", \"15-minutes-or-less\", \"time-to-make\", \"course\", \"main-ingredient\", \"preparation\", \"occasion\", \"salads\", \"pork\", \"vegetables\",
        "identifier": 103065
      }
    ]
  }
}
```

Qf: name^5 search_terms^3 tags^3 ingredients^3 description steps

Tags: christmas

Search Terms: dinner

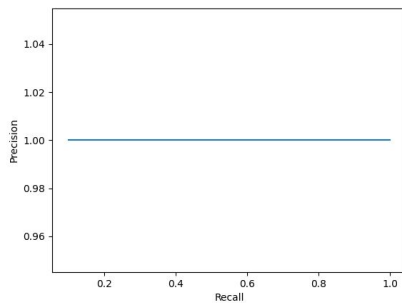
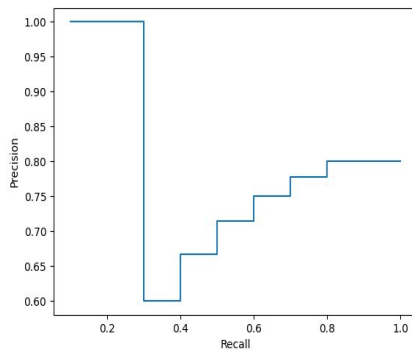
Evaluation (1)

	0	1
0	Metric	Value
1	Average Precision	0.805873
2	Precision at 10 (P@10)	0.8

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

	0	1
0	Metric	Value
1	Average Precision	1.0
2	Precision at 10 (P@10)	1.0

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



Evaluation (2)

	0	1
0	Metric	Value
1	Average Precision	0.569643
2	Precision at 10 (P@10)	0.6

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

	0	1
0	Metric	Value
1	Average Precision	1.0
2	Precision at 10 (P@10)	1.0

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

