{-}ackolade

MongoDB Physical Model

Schema for:

Model name: Cookbook
Author:
Version:
File name: Cookbook.json
File path: /Users/gbronca/Downloads/Cookbook.json
Printed On: Mon Apr 22 2019 13:07:06 GMT+0100 (BST)
Created with: Hackolade - Visual data modeling for NoSQL and multimodel databases

1. MODEL

1.1 Model Cookbook

1.1.1 Cookbook Entity Relationship Diagram
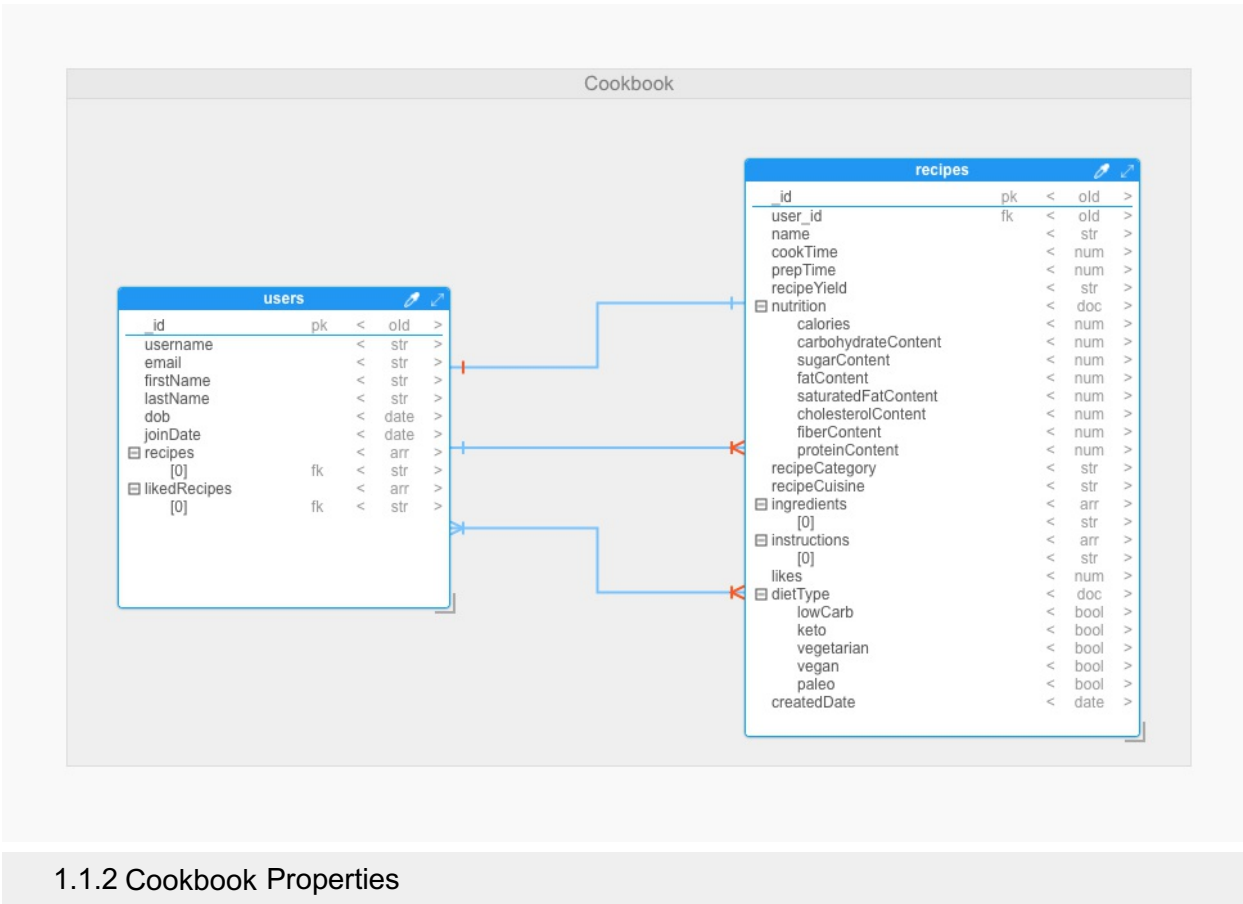
1.1.2 Cookbook Properties

PROPERTY	VALUE
Model name	Cookbook
Technical name	
Description	
Author	
Version	
DB vendor	MongoDB
DB version	v4.0
Comments	

1.1.3 Cookbook DB Definitions

2. DATABASES

2.1 Database Cookbook
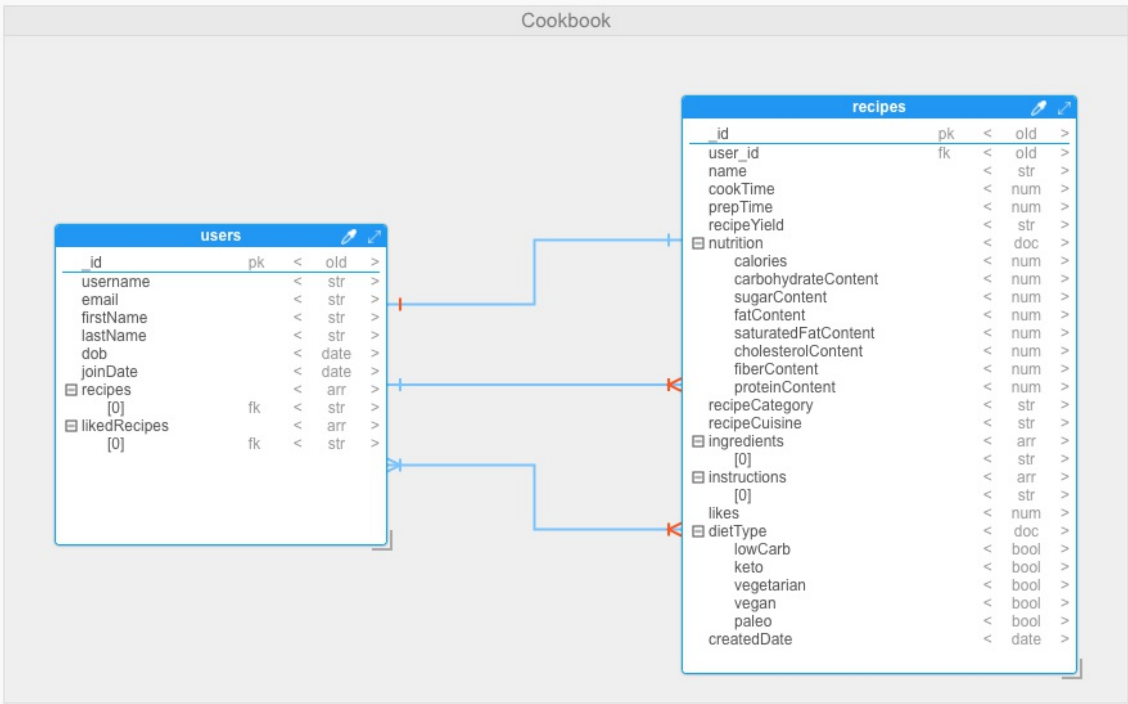
2.1.1 Cookbook Properties

PROPERTY	VALUE
Database name	Cookbook
Technical name	
Enable sharding	
Description	
Comments	

2.1.2 Cookbook Collections

2.1.2.1 Collection recipes

2.1.2.1.1 recipes Properties

PROPERTY	VALUE
Collection name	recipes
Technical name	
Id	
Description	
Database	Cookbook
Capped	false
Size	
Max	
Storage engine	WiredTiger
Config String	
Validation level	Moderate
Validation action	Warn
Additional properties	false
Comments	

2.1.2.1.2 recipes Fields

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
_id	objectId	true			
user_id	objectId	false			
name	string	true		Recipe's name	
cookTime	numeric	false		The time it takes to cook the dish	
prepTime	numeric	false		The length of time it takes to prepare the items	
recipeYield	string	false		The quantity produced by the recipe (for example, number of people served, number of servings, etc)	
nutrition	document	false		Nutrition information about the recipe.	
calories	numeric	false		The number of calories	
carbohydrateContent	numeric	false		The number of grams of carbohydrates	
sugarContent	numeric	false		The number of grams of sugar	
fatContent	numeric	false			
saturatedFatContent	numeric	false		The number of grams of saturated fat	
cholesterolContent	numeric	false		The number of milligrams of cholesterol	
fiberContent	numeric	false		The number of grams of fiber	
proteinContent	numeric	false		The number of grams of protein	
recipeCategory	string	false		The category of the recipe, e.g. starter, main, etc	
recipeCuisine	string	false		The cuisine of the recipe, e.g. French, Italian, Brazilian, etc.	
ingredients	array	false		Ingredients used to prepare the recipe	
[0]	string	false			
instructions	array	false		Ordered list of steps in making the recipe.	
[0]	string	false			
likes	numeric	false		Number of likes the recipe has received from other users.	
dietType	document	false		Type of recipe, e.g. low-carb, vegetarian, keto, etc.	
lowCarb	boolean	false		is it low-carb?	
keto	boolean	false			
vegetarian	boolean	false			
vegan	boolean	false			
paleo	boolean	false			
createdDate	date	true			

2.1.2.1.2.1 Field _id

2.1.2.1.2.1.1 _id Tree Diagram

{_id} _id	
type	objectId

2.1.2.1.2.1.2 _id properties

PROPERTY	VALUE
Name	_id
Technical name	
Id	
Type	objectId
Description	
Dependencies	
Required	true
Primary key	true
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.1.2.2 Field user_id

2.1.2.1.2.2.1 user_id Tree Diagram

{_id} user_id	
type	*objectId*

2.1.2.1.2.2.2 user_id properties

PROPERTY	VALUE
Name	user_id
Technical name	
Id	
Type	objectId
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	users
Foreign field	_id
Relationship type	Foreign Key
Default	
Sample	
Comments	

2.1.2.1.2.3 Field name

2.1.2.1.2.3.1 name Tree Diagram

{ABC} name	
type	*string*

2.1.2.1.2.3.2 name properties

PROPERTY	VALUE
Name	name
Technical name	
Id	
Type	string
Description	Recipe's name
Dependencies	
Required	true
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.1.2.4 Field cookTime

2.1.2.1.2.4.1 cookTime Tree Diagram

{123} cookTime	
type	*numeric*

2.1.2.1.2.4.2 cookTime properties

PROPERTY	VALUE
Name	cookTime
Technical name	
Id	
Type	numeric
Description	The time it takes to cook the dish
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.5 Field prepTime

2.1.2.1.2.5.1 prepTime Tree Diagram

{123} prepTime	
type	*numeric*

2.1.2.1.2.5.2 prepTime properties

PROPERTY	VALUE
Name	prepTime
Technical name	
Id	
Type	numeric
Description	The length of time it takes to prepare the items
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.6 Field recipeYield

2.1.2.1.2.6.1 recipeYield Tree Diagram

{ABC} recipeYield
type   *string*

2.1.2.1.2.6.2 recipeYield properties

PROPERTY	VALUE
Name	recipeYield
Technical name	
Id	
Type	string
Description	The quantity produced by the recipe (for example, number of people served, number of servings, etc)
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.1.2.7 Field nutrition

2.1.2.1.2.7.1 nutrition Tree Diagram

```
                {123} calories
              ┌─── type    numeric


                {123} carbohydrateContent
              ┌─── type         numeric


                {123} sugarContent
              ┌─── type      numeric


                {123} fatContent
              ┌─── type    numeric

 {...} nutrition
 type   document ─┤
                {123} saturatedFatContent
              ┌─── type         numeric


                {123} cholesterolContent
              ┌─── type       numeric


                {123} fiberContent
              ┌─── type     numeric


                {123} proteinContent
              └─── type       numeric
```
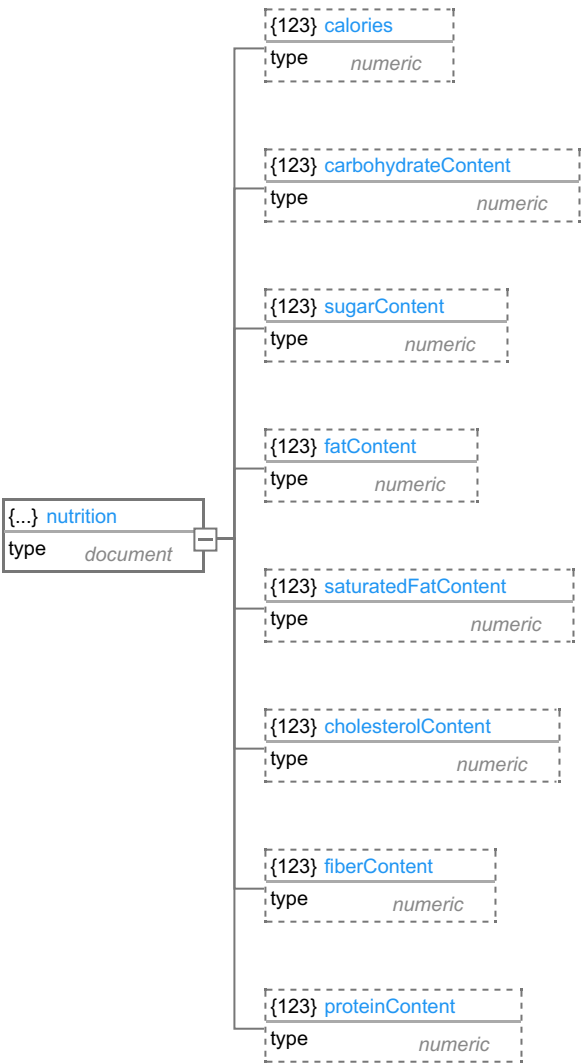
2.1.2.1.2.7.2 nutrition Hierarchy

Parent field: recipes
Child field(s):

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
calories	numeric	false		The number of calories	
carbohydrateContent	numeric	false		The number of grams of carbohydrates	
sugarContent	numeric	false		The number of grams of sugar	
fatContent	numeric	false			
saturatedFatContent	numeric	false		The number of grams of saturated fat	
cholesterolContent	numeric	false		The number of milligrams of cholesterol	
fiberContent	numeric	false		The number of grams of fiber	
proteinContent	numeric	false		The number of grams of protein	

2.1.2.1.2.7.3 nutrition properties

PROPERTY	VALUE
Name	nutrition
Technical name	
Id	
Type	document
Description	Nutrition information about the recipe.
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
DBRef	
Min Properties	
Max Properties	
Additional properties	false
Comments	

2.1.2.1.2.8 Field calories

2.1.2.1.2.8.1 calories Tree Diagram

{123} calories	
type	*numeric*

2.1.2.1.2.8.2 calories properties

PROPERTY	VALUE
Name	calories
Technical name	
Id	
Type	numeric
Description	The number of calories
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.9 Field carbohydrateContent

2.1.2.1.2.9.1 carbohydrateContent Tree Diagram

{123} carbohydrateContent	
type	numeric

2.1.2.1.2.9.2 carbohydrateContent properties

PROPERTY	VALUE
Name	carbohydrateContent
Technical name	
Id	
Type	numeric
Description	The number of grams of carbohydrates
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.10 Field sugarContent

2.1.2.1.2.10.1 sugarContent Tree Diagram

{123} sugarContent	
type	numeric

2.1.2.1.2.10.2 sugarContent properties

PROPERTY	VALUE
Name	sugarContent
Technical name	
Id	
Type	numeric
Description	The number of grams of sugar
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.11 Field fatContent

2.1.2.1.2.11.1 fatContent Tree Diagram

{123} fatContent	
type	numeric

2.1.2.1.2.11.2 fatContent properties

PROPERTY	VALUE
Name	fatContent
Technical name	
Id	
Type	numeric
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.12 Field saturatedFatContent

2.1.2.1.2.12.1 saturatedFatContent Tree Diagram

{123} saturatedFatContent	
type	*numeric*

2.1.2.1.2.12.2 saturatedFatContent properties

PROPERTY	VALUE
Name	saturatedFatContent
Technical name	
Id	
Type	numeric
Description	The number of grams of saturated fat
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.13 Field cholesterolContent

2.1.2.1.2.13.1 cholesterolContent Tree Diagram

{123} cholesterolContent	
type	numeric

2.1.2.1.2.13.2 cholesterolContent properties

PROPERTY	VALUE
Name	cholesterolContent
Technical name	
Id	
Type	numeric
Description	The number of milligrams of cholesterol
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.14 Field fiberContent

2.1.2.1.2.14.1 fiberContent Tree Diagram

{123} fiberContent	
type	*numeric*

2.1.2.1.2.14.2 fiberContent properties

PROPERTY	VALUE
Name	fiberContent
Technical name	
Id	
Type	numeric
Description	The number of grams of fiber
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.15 Field proteinContent

2.1.2.1.2.15.1 proteinContent Tree Diagram

{123} proteinContent	
type	numeric

2.1.2.1.2.15.2 proteinContent properties

PROPERTY	VALUE
Name	proteinContent
Technical name	
Id	
Type	numeric
Description	The number of grams of protein
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.16 Field recipeCategory

2.1.2.1.2.16.1 recipeCategory Tree Diagram

{ABC} recipeCategory	
type	*string*

2.1.2.1.2.16.2 recipeCategory properties

PROPERTY	VALUE
Name	recipeCategory
Technical name	
Id	
Type	string
Description	The category of the recipe, e.g. starter, main, etc
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.1.2.17 Field recipeCuisine

2.1.2.1.2.17.1 recipeCuisine Tree Diagram

{ABC} recipeCuisine	
type	*string*

2.1.2.1.2.17.2 recipeCuisine properties

PROPERTY	VALUE
Name	recipeCuisine
Technical name	
Id	
Type	string
Description	The cuisine of the recipe, e.g. French, Italian, Brazilian, etc.
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.1.2.18 Field ingredients

2.1.2.1.2.18.1 ingredients Tree Diagram

```
[...] ingredients              {ABC} [0]*
type              array        type        string
```
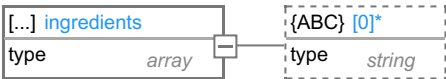
2.1.2.1.2.18.2 ingredients Hierarchy

Parent field: recipes
Child field(s):

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
[0]	string	false			

2.1.2.1.2.18.3 ingredients properties

PROPERTY	VALUE
Name	ingredients
Technical name	
Id	
Type	array
Description	Ingredients used to prepare the recipe
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Min items	
Max items	
Unique items	false
Additional items	true
Comments	

2.1.2.1.2.19 Field [0]

2.1.2.1.2.19.1 [0] Tree Diagram

```
{ABC} [0]
type        string
```
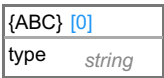
2.1.2.1.2.19.2 [0] properties

PROPERTY	VALUE
Id	
Type	string
Description	
Dependencies	
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.1.2.20 Field instructions

2.1.2.1.2.20.1 instructions Tree Diagram
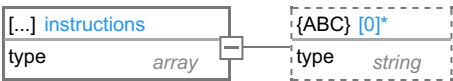
2.1.2.1.2.20.2 instructions Hierarchy

Parent field: recipes
Child field(s):

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
[0]	string	false			

2.1.2.1.2.20.3 instructions properties

PROPERTY	VALUE
Name	instructions
Technical name	
Id	
Type	array
Description	Ordered list of steps in making the recipe.
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Min items	
Max items	
Unique items	false
Additional items	true
Comments	

2.1.2.1.2.21 Field [0]

2.1.2.1.2.21.1 [0] Tree Diagram

```
{ABC} [0]
type      string
```

2.1.2.1.2.21.2 [0] properties

PROPERTY	VALUE
Id	
Type	string
Description	
Dependencies	
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.1.2.22 Field likes

2.1.2.1.2.22.1 likes Tree Diagram

```
{123} likes
type      numeric
```

2.1.2.1.2.22.2 likes properties

PROPERTY	VALUE
Name	likes
Technical name	
Id	
Type	numeric
Description	Number of likes the recipe has received from other users.
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Subtype	
Unit	
Min value	
Excl min	false
Max value	
Excl max	false
Multiple of	
Divisible by	
Enum	
Sample	
Comments	

2.1.2.1.2.23 Field dietType

2.1.2.1.2.23.1 dietType Tree Diagram

```
                    {0/1} lowCarb
                    type        boolean


                    {0/1} keto
                    type        boolean


{...} dietType       {0/1} vegetarian
type    document     type        boolean


                    {0/1} vegan
                    type        boolean


                    {0/1} paleo
                    type        boolean
```
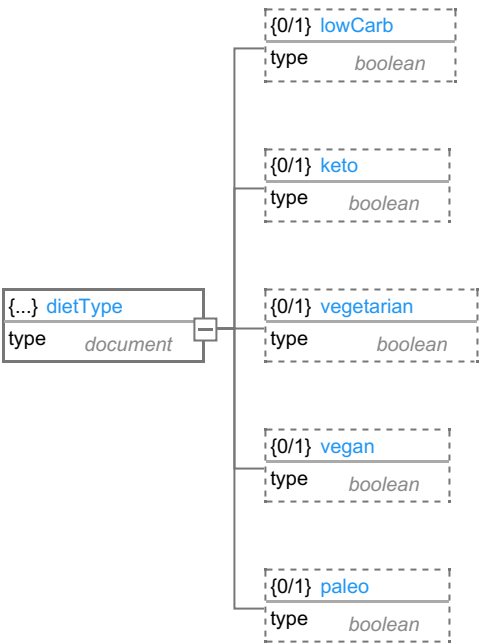
2.1.2.1.2.23.2 dietType Hierarchy

Parent field: recipes
Child field(s):

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
lowCarb	boolean	false		is it low-carb?	
keto	boolean	false			
vegetarian	boolean	false			
vegan	boolean	false			
paleo	boolean	false			

2.1.2.1.2.23.3 dietType properties

PROPERTY	VALUE
Name	dietType
Technical name	
Id	
Type	document
Description	Type of recipe, e.g. low-carb, vegetarian, keto, etc.
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
DBRef	
Min Properties	
Max Properties	
Additional properties	false
Comments	

2.1.2.1.2.24 Field lowCarb

2.1.2.1.2.24.1 lowCarb Tree Diagram

{0/1} lowCarb	
type	*boolean*

2.1.2.1.2.24.2 lowCarb properties

PROPERTY	VALUE
Name	lowCarb
Technical name	
Id	
Type	boolean
Description	is it low-carb?
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.1.2.25 Field keto

2.1.2.1.2.25.1 keto Tree Diagram

{0/1} keto	
type	*boolean*

2.1.2.1.2.25.2 keto properties

PROPERTY	VALUE
Name	keto
Technical name	
Id	
Type	boolean
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.1.2.26 Field vegetarian

2.1.2.1.2.26.1 vegetarian Tree Diagram

{0/1} vegetarian
| type | boolean |

2.1.2.1.2.26.2 vegetarian properties

PROPERTY	VALUE
Name	vegetarian
Technical name	
Id	
Type	boolean
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.1.2.27 Field vegan

2.1.2.1.2.27.1 vegan Tree Diagram

{0/1} vegan
| type | boolean |

2.1.2.1.2.27.2 vegan properties

PROPERTY	VALUE
Name	vegan
Technical name	
Id	
Type	boolean
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.1.2.28 Field paleo

2.1.2.1.2.28.1 paleo Tree Diagram

{0/1} paleo	
type	*boolean*

2.1.2.1.2.28.2 paleo properties

PROPERTY	VALUE
Name	paleo
Technical name	
Id	
Type	boolean
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.1.2.29 Field createdDate

2.1.2.1.2.29.1 createdDate Tree Diagram

{dt} createdDate	
type	*date*

2.1.2.1.2.29.2 createdDate properties

PROPERTY	VALUE
Name	createdDate
Technical name	
Id	
Type	date
Description	
Dependencies	
Required	true
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.1.3 recipes JSON Schema

```
{
```

```
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "capped": false,
  "validationLevel": "Moderate",
  "validationAction": "Warn",
  "additionalProperties": false,
  "properties": {
    "_id": {
      "type": "string",
      "primaryKey": true,
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "4dd8eb50-64e9-11e9-b130-d1f08b9eeab7"
      ],
      "pattern": "^[a-fA-F0-9]{24}$"
    },
    "user_id": {
      "type": "string",
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "cc7f34f0-64f3-11e9-b130-d1f08b9eeab7"
      ],
      "pattern": "^[a-fA-F0-9]{24}$"
    },
    "name": {
      "type": "string",
      "description": "Recipe's name",
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "b8e12b00-64ea-11e9-b130-d1f08b9eeab7"
      ]
    },
    "cookTime": {
      "type": "number",
      "description": "The time it takes to cook the dish",
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "ff25c120-64ea-11e9-b130-d1f08b9eeab7"
      ]
    },
    "prepTime": {
      "type": "number",
      "description": "The length of time it takes to prepare the items",
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "0abdbdd0-64eb-11e9-b130-d1f08b9eeab7"
      ]
    },
    "recipeYield": {
      "type": "string",
      "description": "The quantity produced by the recipe (for example, number of people served, number of
 servings, etc)",
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "24118190-64eb-11e9-b130-d1f08b9eeab7"
      ]
    },
    "nutrition": {
      "type": "object",
```

```
         "description": "Nutrition information about the recipe.",
         "additionalProperties": false,
         "properties": {
            "calories": {
               "type": "number",
               "description": "The number of calories",
               "path": [
                  "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
                  "cd094620-64eb-11e9-b130-d1f08b9eeab7",
                  "db81cd80-64eb-11e9-b130-d1f08b9eeab7"
               ]
            },
            "carbohydrateContent": {
               "type": "number",
               "description": "The number of grams of carbohydrates",
               "path": [
                  "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
                  "cd094620-64eb-11e9-b130-d1f08b9eeab7",
                  "f3d75b20-64eb-11e9-b130-d1f08b9eeab7"
               ]
            },
            "sugarContent": {
               "type": "number",
               "description": "The number of grams of sugar",
               "path": [
                  "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
                  "cd094620-64eb-11e9-b130-d1f08b9eeab7",
                  "76349dd0-64ec-11e9-b130-d1f08b9eeab7"
               ]
            },
            "fatContent": {
               "type": "number",
               "path": [
                  "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
                  "cd094620-64eb-11e9-b130-d1f08b9eeab7",
                  "3802ae30-64ec-11e9-b130-d1f08b9eeab7"
               ]
            },
            "saturatedFatContent": {
               "type": "number",
               "description": "The number of grams of saturated fat",
               "path": [
                  "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
                  "cd094620-64eb-11e9-b130-d1f08b9eeab7",
                  "6101bab0-64f1-11e9-b130-d1f08b9eeab7"
               ]
            },
            "cholesterolContent": {
               "type": "number",
               "description": "The number of milligrams of cholesterol",
               "path": [
                  "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
                  "cd094620-64eb-11e9-b130-d1f08b9eeab7",
                  "1fd12350-64ec-11e9-b130-d1f08b9eeab7"
               ]
            },
            "fiberContent": {
               "type": "number",
               "description": "The number of grams of fiber",
```

```
          "path": [
            "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
            "cd094620-64eb-11e9-b130-d1f08b9eeab7",
            "3c5b0bd0-64ec-11e9-b130-d1f08b9eeab7"
          ]
        },
        "proteinContent": {
          "type": "number",
          "description": "The number of grams of protein",
          "path": [
            "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
            "cd094620-64eb-11e9-b130-d1f08b9eeab7",
            "3e368290-64ec-11e9-b130-d1f08b9eeab7"
          ]
        }
      },
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "cd094620-64eb-11e9-b130-d1f08b9eeab7"
      ]
    },
    "recipeCategory": {
      "type": "string",
      "description": "The category of the recipe, e.g. starter, main, etc",
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "202a7170-64ed-11e9-b130-d1f08b9eeab7"
      ]
    },
    "recipeCuisine": {
      "type": "string",
      "description": "The cuisine of the recipe, e.g. French, Italian, Brazilian, etc.",
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "46442a90-64ed-11e9-b130-d1f08b9eeab7"
      ]
    },
    "ingredients": {
      "type": "array",
      "description": "Ingredients used to prepare the recipe",
      "uniqueItems": false,
      "additionalItems": true,
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "79975b60-64ed-11e9-b130-d1f08b9eeab7"
      ],
      "items": {
        "type": "string",
        "path": [
          "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
          "79975b60-64ed-11e9-b130-d1f08b9eeab7",
          "79ad5460-64ed-11e9-b130-d1f08b9eeab7"
        ]
      }
    },
    "instructions": {
      "type": "array",
      "description": "Ordered list of steps in making the recipe.",
      "uniqueItems": false,
```

```
      "additionalItems": true,
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "9180e0c0-64ed-11e9-b130-d1f08b9eeab7"
      ],
      "items": {
        "type": "string",
        "path": [
          "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
          "9180e0c0-64ed-11e9-b130-d1f08b9eeab7",
          "c5ea8aa0-64ed-11e9-b130-d1f08b9eeab7"
        ]
      }
    },
    "likes": {
      "type": "number",
      "description": "Number of likes the recipe has received from other users.",
      "path": [
        "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
        "03720970-64ee-11e9-b130-d1f08b9eeab7"
      ]
    },
    "dietType": {
      "type": "object",
      "description": "Type of recipe, e.g. low-carb, vegetarian, keto, etc.",
      "additionalProperties": false,
      "properties": {
        "lowCarb": {
          "type": "boolean",
          "description": "is it low-carb?",
          "path": [
            "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
            "1a27d450-64ef-11e9-b130-d1f08b9eeab7",
            "3ebc25f0-64ef-11e9-b130-d1f08b9eeab7"
          ]
        },
        "keto": {
          "type": "boolean",
          "path": [
            "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
            "1a27d450-64ef-11e9-b130-d1f08b9eeab7",
            "ade65480-64f1-11e9-b130-d1f08b9eeab7"
          ]
        },
        "vegetarian": {
          "type": "boolean",
          "path": [
            "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
            "1a27d450-64ef-11e9-b130-d1f08b9eeab7",
            "4db045f0-64ef-11e9-b130-d1f08b9eeab7"
          ]
        },
        "vegan": {
          "type": "boolean",
          "path": [
            "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
            "1a27d450-64ef-11e9-b130-d1f08b9eeab7",
            "b8631d30-64f1-11e9-b130-d1f08b9eeab7"
          ]
```

```
          },
          "paleo": {
            "type": "boolean",
            "path": [
              "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
              "1a27d450-64ef-11e9-b130-d1f08b9eeab7",
              "b85014f0-64f2-11e9-b130-d1f08b9eeab7"
            ]
          }
        },
        "path": [
          "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
          "1a27d450-64ef-11e9-b130-d1f08b9eeab7"
        ]
      },
      "createdDate": {
        "type": "string",
        "format": "date-time",
        "path": [
          "39fc3ba0-64e9-11e9-b130-d1f08b9eeab7",
          "7b7c91f0-64f4-11e9-b130-d1f08b9eeab7"
        ]
      }
    },
    "required": [
      "_id",
      "name",
      "createdDate"
    ]
}
```

2.1.2.1.4 recipes JSON data

```
{
    "_id": ObjectId("507f1f77bcf86cd799439011"),
    "user_id": ObjectId("507f1f77bcf86cd799439011"),
    "name": "Lorem",
    "cookTime": 73,
    "prepTime": 84,
    "recipeYield": "Lorem",
    "nutrition": {
        "calories": -10,
        "carbohydrateContent": -68,
        "sugarContent": 67,
        "fatContent": -83,
        "saturatedFatContent": -71,
        "cholesterolContent": -39,
        "fiberContent": -38,
        "proteinContent": -83
    },
    "recipeCategory": "Lorem",
    "recipeCuisine": "Lorem",
    "ingredients": [
        "Lorem"
    ],
    "instructions": [
        "Lorem"
    ],
    "likes": 28,
    "dietType": {
        "lowCarb": true,
        "keto": true,
        "vegetarian": true,
        "vegan": true,
        "paleo": true
    },
    "createdDate": ISODate("2016-04-08T15:06:21.595Z")
}
```

2.1.2.2 Collection users

2.1.2.2.1 users Properties

PROPERTY	VALUE
Collection name	users
Technical name	
Id	
Description	
Database	Cookbook
Capped	false
Size	
Max	
Storage engine	WiredTiger
Config String	
Validation level	Off
Validation action	Warn
Additional properties	false
Comments	

2.1.2.2.2 users Fields

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
_id	objectId	true			
username	string	true			
email	string	true			
firstName	string	false			
lastName	string	false			
dob	date	false		User's date of birth	
joinDate	date	true		Date the user was registered to the site	
recipes	array	false		Recipes the user has published.	
[0]	string	false			
likedRecipes	array	false		Recipes liked by the user.	
[0]	string	false			

2.1.2.2.2.1 Field _id

2.1.2.2.2.1.1 _id Tree Diagram

{_id} _id	
type	*objectId*

2.1.2.2.2.1.2 _id properties

PROPERTY	VALUE
Name	_id
Technical name	
Id	
Type	objectId
Description	
Dependencies	
Required	true
Primary key	true
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.2.2.2 Field username

2.1.2.2.2.2.1 username Tree Diagram

{ABC} username	
type	*string*

2.1.2.2.2.2.2 username properties

PROPERTY	VALUE
Name	username
Technical name	
Id	
Type	string
Description	
Dependencies	
Required	true
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.2.2.3 Field email

2.1.2.2.2.3.1 email Tree Diagram

{ABC} email	
type	*string*

2.1.2.2.2.3.2 email properties

PROPERTY	VALUE
Name	email
Technical name	
Id	
Type	string
Description	
Dependencies	
Required	true
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.2.2.4 Field firstName

2.1.2.2.2.4.1 firstName Tree Diagram

{ABC} firstName	
type	*string*

2.1.2.2.2.4.2 firstName properties

PROPERTY	VALUE
Name	firstName
Technical name	
Id	
Type	string
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.2.2.5 Field lastName

2.1.2.2.2.5.1 lastName Tree Diagram

{ABC} lastName	
type	*string*

2.1.2.2.2.5.2 lastName properties

PROPERTY	VALUE
Name	lastName
Technical name	
Id	
Type	string
Description	
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.2.2.6 Field dob

2.1.2.2.2.6.1 dob Tree Diagram

```
{dt} dob
type        date
```

2.1.2.2.2.6.2 dob properties

PROPERTY	VALUE
Name	dob
Technical name	
Id	
Type	date
Description	User's date of birth
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.2.2.7 Field joinDate

2.1.2.2.2.7.1 joinDate Tree Diagram

```
{dt} joinDate
type        date
```

2.1.2.2.2.7.2 joinDate properties

PROPERTY	VALUE
Name	joinDate
Technical name	
Id	
Type	date
Description	Date the user was registered to the site
Dependencies	
Required	true
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Default	
Sample	
Comments	

2.1.2.2.2.8 Field recipes

2.1.2.2.2.8.1 recipes Tree Diagram

```
[...] recipes          {ABC} [0]*
type        array       type        string
```
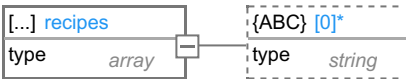
2.1.2.2.2.8.2 recipes Hierarchy

Parent field: users
Child field(s):

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
[0]	string	false	fk		

2.1.2.2.2.8.3 recipes properties

PROPERTY	VALUE
Name	recipes
Technical name	
Id	
Type	array
Description	Recipes the user has published.
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Min items	
Max items	
Unique items	false
Additional items	true
Comments	

2.1.2.2.2.9 Field [0]

2.1.2.2.2.9.1 [0] Tree Diagram

```
{ABC} [0]
type        string
```

2.1.2.2.2.9.2 [0] properties

PROPERTY	VALUE
Id	
Type	string
Description	
Dependencies	
Primary key	false
Foreign collection	recipes
Foreign field	_id
Relationship type	Foreign Key
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.2.2.10 Field likedRecipes

2.1.2.2.2.10.1 likedRecipes Tree Diagram
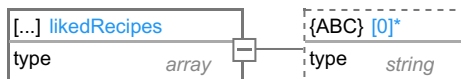
2.1.2.2.2.10.2 likedRecipes Hierarchy

Parent field: users
Child field(s):

FIELD	TYPE	REQ	KEY	DESCRIPTION	COMMENTS
[0]	string	false	fk		

2.1.2.2.2.10.3 likedRecipes properties

PROPERTY	VALUE
Name	likedRecipes
Technical name	
Id	
Type	array
Description	Recipes liked by the user.
Dependencies	
Required	false
Primary key	false
Foreign collection	
Foreign field	
Relationship type	
Min items	
Max items	
Unique items	false
Additional items	true
Comments	

2.1.2.2.2.11 Field [0]

2.1.2.2.2.11.1 [0] Tree Diagram

```
{ABC} [0]
type      string
```

2.1.2.2.2.11.2 [0] properties

PROPERTY	VALUE
Id	
Type	string
Description	
Dependencies	
Primary key	false
Foreign collection	recipes
Foreign field	_id
Relationship type	Foreign Key
Default	
Min length	
Max length	
Pattern	
Format	
Enum	
Sample	
Comments	

2.1.2.2.3 users JSON Schema

```
{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "type": "object",
    "capped": false,
    "validationLevel": "Off",
    "validationAction": "Warn",
    "additionalProperties": false,
    "properties": {
        "_id": {
            "type": "string",
            "primaryKey": true,
            "path": [
                "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
                "185ba300-64f3-11e9-b130-d1f08b9eeab7"
            ],
            "pattern": "^[a-fA-F0-9]{24}$"
        },
        "username": {
            "type": "string",
            "path": [
                "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
                "2ace1450-64f3-11e9-b130-d1f08b9eeab7"
            ]
        },
        "email": {
            "type": "string",
```

```
      "path": [
        "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
        "3e78de90-64f3-11e9-b130-d1f08b9eeab7"
      ]
    },
    "firstName": {
      "type": "string",
      "path": [
        "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
        "4673b750-64f3-11e9-b130-d1f08b9eeab7"
      ]
    },
    "lastName": {
      "type": "string",
      "path": [
        "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
        "516dc650-64f3-11e9-b130-d1f08b9eeab7"
      ]
    },
    "dob": {
      "type": "string",
      "description": "User's date of birth",
      "format": "date-time",
      "path": [
        "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
        "9e905e10-64f4-11e9-b130-d1f08b9eeab7"
      ]
    },
    "joinDate": {
      "type": "string",
      "description": "Date the user was registered to the site",
      "format": "date-time",
      "path": [
        "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
        "68d6aa00-64f3-11e9-b130-d1f08b9eeab7"
      ]
    },
    "recipes": {
      "type": "array",
      "description": "Recipes the user has published.",
      "uniqueItems": false,
      "additionalItems": true,
      "path": [
        "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
        "9e5cc060-64f3-11e9-b130-d1f08b9eeab7"
      ],
      "items": {
        "type": "string",
        "path": [
          "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
          "9e5cc060-64f3-11e9-b130-d1f08b9eeab7",
          "9e76ff20-64f3-11e9-b130-d1f08b9eeab7"
        ]
      }
    },
    "likedRecipes": {
      "type": "array",
      "description": "Recipes liked by the user.",
      "uniqueItems": false,
```

```
      "additionalItems": true,
      "path": [
        "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
        "1391f080-64f4-11e9-b130-d1f08b9eeab7"
      ],
      "items": {
        "type": "string",
        "path": [
          "dfa0c770-64f2-11e9-b130-d1f08b9eeab7",
          "1391f080-64f4-11e9-b130-d1f08b9eeab7",
          "13ae0400-64f4-11e9-b130-d1f08b9eeab7"
        ]
      }
    }
  },
  "required": [
    "_id",
    "username",
    "email",
    "joinDate"
  ]
}
```

2.1.2.2.4 users JSON data

```
{
  "_id": ObjectId("507f1f77bcf86cd799439011"),
  "username": "Lorem",
  "email": "Lorem",
  "firstName": "Lorem",
  "lastName": "Lorem",
  "dob": ISODate("2016-04-08T15:06:21.595Z"),
  "joinDate": ISODate("2016-04-08T15:06:21.595Z"),
  "recipes": [
    "Lorem"
  ],
  "likedRecipes": [
    "Lorem"
  ]
}
```

3. RELATIONSHIPS

3.1 Relationship fk recipes._id to users.likedRecipes.[0]

3.1.1 fk recipes._id to users.likedRecipes.[0] Diagram

PARENT TABLE	PARENT FIELD
recipes	_id

CHILD TABLE	CHILD FIELD
users	likedRecipes.[0]
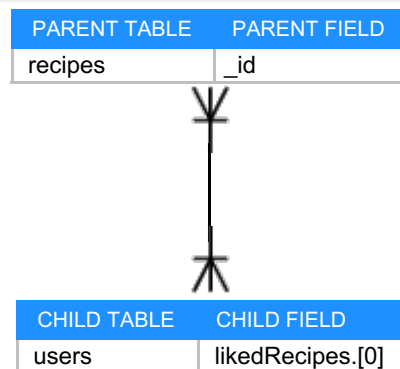
3.1.2 fk recipes._id to users.likedRecipes.[0] Properties

PROPERTY	VALUE
Name	fk recipes._id to users.likedRecipes.[0]
Description	
Parent Collection	recipes
Parent field	_id
Parent Cardinality	1..n
Child Collection	users
Child field	
Child Cardinality	1..n
Comments	

3.2 Relationship fk recipes._id to users.recipes.[0]

### 3.2.1 fk recipes._id to users.recipes.[0] Diagram

PARENT TABLE	PARENT FIELD
recipes	_id

CHILD TABLE	CHILD FIELD
users	recipes.[0]
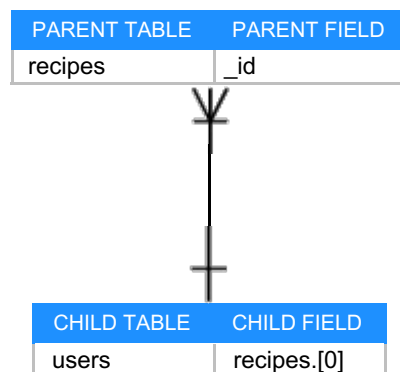
3.2.2 fk recipes._id to users.recipes.[0] Properties

PROPERTY	VALUE
Name	fk recipes._id to users.recipes.[0]
Description	
Parent Collection	recipes
Parent field	_id
Parent Cardinality	1..n
Child Collection	users
Child field	
Child Cardinality	1
Comments	

3.3 Relationship fk users._id to recipes.user_id

3.3.1 fk users._id to recipes.user_id Diagram

PARENT TABLE	PARENT FIELD
users	_id

CHILD TABLE	CHILD FIELD
recipes	user_id
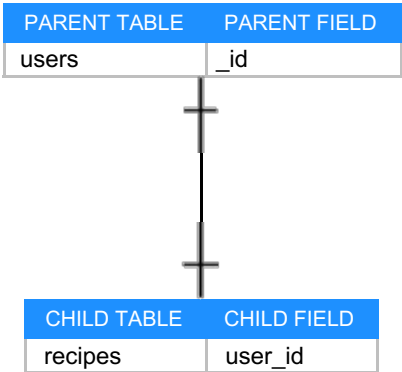
3.3.2 fk users._id to recipes.user_id Properties

PROPERTY	VALUE
Name	fk users._id to recipes.user_id
Description	
Parent Collection	users
Parent field	_id
Parent Cardinality	1
Child Collection	recipes
Child field	user_id
Child Cardinality	1
Comments	