

Create a service using spring-hibernate or any web based framework of your choice in any language.

The application should support the below schema

compositions

id: PK

name: Varchar

ingredients

id: PK

name: Varchar

molecules:

id: PK

name: Varchar

rx_required: Boolean

composition_ingredients

id: PK

composition_id: FK to compositions.id

ingredient_id: FK to ingredients.id

unit: Varchar

strength: Floating

molecule_ingredients

id: PK

molecule_id: FK to molecules.id

ingredient_id: FK to ingredients.id

Examples and definitions

- Composition is a mixture of ingredients with some STRENGTH and UNIT. for a composition to happen N number of ingredients can combine. And N can be 1/100/10000..
- Molecule is mixture of ingredients in a composition
- Rx required is a property of molecule

Examples

1. Composition: paracetamol (500 MG)
Molecule: paracetamol
Ingredients: paracetamol

Rx_required: true
Strength: 500
Unit: MG

2. Composition: paracetamol (500 MG) + diclofenac (10 MG)
Molecule: paracetamol + diclofenac
Ingredients: paracetamol, diclofenac
Rx_required: false
Strength: 500, 10
Unit: MG
3. Composition: paracetamol (200 MG) + diclofenac (5 MGG)
Molecule: paracetamol + diclofenac
Ingredients: paracetamol, diclofenac
Rx_required: false
Strength: 200, 5
Unit: MG, MGG
4. Composition: paracetamol (200 MG) + diclofenac (5 MGG) + amoxicillin (10 MG)
Molecule: paracetamol + diclofenac + amoxicillin
Ingredients: paracetamol, diclofenac, amoxicillin
Rx_required: true
Strength: 200, 5, 10
Unit: MG, MGG

Salient point of the application

- Should support bulk insertion

```
[  
  {  
    ingredients: [  
      {  
        name: "paracetamol",  
        strength: 200.0,  
        unit: "MG"  
      },  
      {  
        name: "diclofenac",  
        strength: 2.5,  
        unit: "MGG"  
      }  
    ],  
    rx_required: true  
  },  
  {
```

```

ingredients: [
  {
    name: "paracetamol",
    strength: 650.0,
    unit: "MG"
  }
],
rx_required: false
},
{
  ingredients: [
    {
      name: "paracetamol",
      strength: 200.0,
      unit: "MG"
    },
    {
      name: "diclofenac",
      strength: 2.5,
      unit: "MGG"
    },
    {
      name: "aspirin",
      strength: 2.0,
      unit: "v/v"
    }
  ],
  rx_required: true
}
]

```

- Ensure no duplicates gets added in any of the table
- Create APIs to fetch data based on the following queries
 - When provided, a composition id/name provides its ingredients with their corresponding strengths and units also return the molecule and its corresponding rx_required.
 - Give all compositions where ingredient is X with strength S and unit U
 - Give all compositions where ingredient is X with strength S and unit U and rx_required is Y
- Add relevant unit test cases and comments.
- Push the code to github and share the public url after completion