

Wine in various meal

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Objectives

Provide knowledge about wine and ingredient compatibility

Help wine lovers to match their wine with food

Allow beginners to make their meals like a pro

Features

- **List wine names**
- **List wine types**
- **List wine name of the input type**
- **Find type of the input wine name**
- **List ingredients**
- **List ingredients type**
- **Find type of the input ingredient**
- **Find ingredients of the input type**
- **Check compatibility of wine (by name or type) and ingredient (by name or type)**
- **Find ingredient (name or type) that compatible with wine (by name or type)**
- **Find wine (name or type) that compatible with ingredient (by name or type)**

Predicates

- **wine(x) x is name**
- **wineType(x) x is name**
- **isWineType(x, y) x is wine y is wine type**
- **ingredient(x) x is name**
- **minorType(x) x is name such as black pepper, red pepper**
- **majorType(x) x is name such as herb and spice**
- **hasMinorType(x) x is ingredient**
- **has MajorType(x) x is minor type**
- **compatible(x, y) x is minor type y is wine type**

FACTS

- List of wine names and types
- List of isType of wine names and wine types
- List of ingredient name, minor and major types
- List of compatible ingredient minor type and wine type
- List of hasMinorType of ingredient and minorType
- List of hasMajorType of minorType and majorType

Facts Source



Source:<https://cdn.shopify.com/s/files/1/0203/1210/products/F2-Print-background.jpg?v=1577900119>

Rule Wine in type

```
wine_in_type (NAME, TYPE) :-  
    facts:wine (NAME) ,  
    facts:wineType (Type) ,  
    facts:isWineType (NAME, TYPE) .
```

wine(x) ^ wineType(y) ^ isWineType(y) => wine_in_type(x,y)

Ingredient in minor type

```
ingredient_in_minor_type(NAME, TYPE) :-  
    facts:ingredient(NAME),  
    facts:minorType(TYPE),  
    facts:hasMinorType(NAME, TYPE).
```

$\text{ingredient}(x) \wedge \text{minorType}(y) \wedge \text{hasMinorType}(x, y)$

$\Rightarrow \text{ingredient_in_minor_type}(x, y)$

Ingredient in major type

```
ingredient_in_major_type (NAME, MAJOR_TYPE) :-  
  facts:ingredient (NAME),  
  facts:minorType (MINOR_TYPE),  
  facts:hasMinorType (NAME, MINOR_TYPE),  
  facts:majorType (MAJOR_TYPE),  
  facts:hasMajorType (MINOR_TYPE, MAJOR_TYPE).
```

$\text{ingredient}(x) \wedge \text{minorType}(z) \wedge \text{hasMinorType}(x, z) \wedge \text{majorType}(y) \wedge \text{hasMajorType}(z, y) \Rightarrow \text{ingredient_in_minor_type}(x, y)$

Ingredient compatible with wine

```
ingredient_compatible_with_wine (INGREDIENT_NAME, WINE_NAME) :-  
  facts:ingredient(INGREDIENT_NAME),  
  facts:wine(WINE_NAME),  
  facts:wineType(WINE_TYPE),  
  facts:isWineType(WINE_NAME, WINE_TYPE),  
  facts:minorType(INGREDIENT_TYPE),  
  ingredient_in_minor_type(INGREDIENT_NAME, INGREDIENT_TYPE),  
  facts:compatible(INGREDIENT_TYPE, WINE_TYPE).
```

$$\begin{aligned} &\text{ingredient}(x) \wedge \text{wine}(y) \wedge \text{wineType}(z) \wedge \text{isWineType}(y, z) \wedge \\ &\text{minorType}(a) \wedge \text{ingredient_in_minor_type}(x, a) \wedge \text{compatible}(a, z) \\ &\Rightarrow \text{ingredient_compatible_with_wine}(x, y) \end{aligned}$$

Ingredient compatible with wine type

```
ingredient_compatible_with_wine_type(INGREDIENT_NAME, WINE_TYPE) :-  
    facts:ingredient(INGREDIENT_NAME),  
    facts:wineType(WINE_TYPE),  
    ingredient_in_minor_type(INGREDIENT_NAME, INGREDIENT_TYPE),  
    facts:compatible(INGREDIENT_TYPE, WINE_TYPE).
```

$$\begin{aligned} &\text{ingredient}(x) \wedge \text{wineType}(y) \wedge \text{minorType}(z) \wedge \\ &\text{ingredient_in_minor_type}(x, z) \wedge \text{compatible}(z, y) \Rightarrow \\ &\text{ingredient_compatible_with_wine}(x, y) \end{aligned}$$

Project Repository

<https://github.com/KornSiwat/wines-in-meals>

