

# User Manual

## Goals

The implemented CBR engine is fine tuned for the Cocktail Challenge of the Computer Cooking Contest and is therefore only meant to be used with that challenge. The idea is to provide a set of desired ingredients and a set of undesired ingredients and the system should output a good tasting cocktail that fulfills these constraints.

## Startup/Shutdown of the System

The system requires Python 3.5 or higher to be installed on the system. The system is started by running the command

```
python ./main.py
```

from the `$CBR_ROOT/Source` folder, given that the archive was extracted into `$CBR_ROOT`.

The system is shut down by entering the key word `exit` when prompted for the ingredients. The system can also be forcefully terminated at any point since cases are saved to file on the fly, whenever a new case gets added to the case base. Upon first start of the engine the official case base `Data/ccc_cocktails.xml` provided by the Cocktail Challenge is loaded from there on the system works from its own case base file `Data/case_base.xml`. All this works completely transparent and is of no concern for the regular usage of the system, but `Data/case_base.xml` can be inspected and modified manually. The system should be shutdown before manual alteration of `Data/case_base.xml`, since changes will be overwritten otherwise.

## Functionalities

The system allows the user to specify a query that contains a set of desired ingredients and a set of undesired ingredients. All the available ingredient choices can be found in `Data/categories.xml`. If the user is not satisfied with a cocktail adapted by the system he can edit it interactively. General the usage of the system is self explanatory at all stages (including the manual adaptation of the cocktail).

## Example of Usage

Let us pretend we are interested in a cocktail that resembles a Piña Colada, but without the whipping cream. User input is highlighted in bold.

Load our case base.

Please enter all desired ingredients as a space separated list.

Substitute spaces in the ingredient's name by dashes. Enter "exit" to terminate the application.

**pineapple-juice malibu-rum white-rum**

Please enter all undesired ingredients as a space separated list.

**light-whipping-cream**

Searching for a cocktail with constraints

desired ingredients: {'malibu rum', 'pineapple juice', 'white rum'}

undesired ingredients: {'light whipping cream'}

Most similar cocktail found:

Piña Colada (cocktail)

125g malibu rum

150g light whipping cream

20cl pineapple juice

20cl white rum

0 ice cube

These undesired ingredients are contained: {'light whipping cream'}

Adapting cocktail so that it contains all desired ingredients and no undesired ones.

We replace the contained undesired ingredient light whipping cream by the random ingredient syrup of the same category special

Current cocktail:

Piña Colada (cocktail) with syrup instead of light whipping cream

125g malibu rum

150g syrup

20cl pineapple juice

20cl white rum

0 ice cube

Until here everything is fully automatic. Like expected a Piña Colada is returned with a random replacement for the whipping cream. Let us pretend that we are unhappy with the random choice and want to slightly modify the solution. Also we want to decrease the quantity of the sweet component to avoid headaches.

Is this a good cocktail? (y/n)

**n**

Manual improvement of the cocktail by an expert.

You can edit the cocktail with the following commands, but make sure that it satisfies the constraints

desired ingredients: {'malibu rum', 'pineapple juice', 'white rum'}

undesired ingredients: {'light whipping cream'}

Commands:

add ingredient quantity unit: Adds an ingredient to the cocktail.

replace ingredient new-ingredient quantity unit: Replaces an ingredient in the cocktail.  
remove ingredient: Removes an ingredient from the cocktail.  
save: Saves the edited cocktail to the case base

We merely have to follow the instructions printed out by the system to replace the syrup by vanilla sugar. Let us pretend that we mistype first. In that case the system reminds us in a user-friendly way that we did so.

**replace syroop vanilla-sugar 50 g**

The cocktail does not contain the ingredient syroop

**replace syrup vanilla-sugar 50 g**

replacing ingredient..

**save**

Current cocktail:

Piña Colada (cocktail) with syrup instead of light whipping cream  
with vanilla sugar instead of syrup

125g malibu rum

50g vanilla sugar

20cl pineapple juice

20cl white rum

0 ice cube

Finally we change the title of the new cocktail to something more human readable.

Would you like to rename the cocktail? (y/n)

**y**

Please enter the new title of the cocktail

Sweet Excellent Liquor (SEL)

Saving new cocktail to case base.

What happens if we query for the same ingredients again?

Please enter all desired ingredients as a space separated list.

Substitute spaces in the ingredient's name by dashes. Enter "exit" to terminate the application.

**pineapple-juice malibu-rum white-rum**

Please enter all undesired ingredients as a space separated list.

**light-whipping-cream**

Searching for a cocktail with constraints

desired ingredients: {'malibu rum', 'pineapple juice', 'white rum'}

undesired ingredients: {'light whipping cream'}

Most similar cocktail found:

Sweet Excellent Liquor (SEL)

125g malibu rum  
50g vanilla sugar  
20cl pineapple juice  
20cl white rum  
0 ice cube

Found cocktail already contains all desired ingredients and no undesired ones, so it can be directly used.

Please enter all desired ingredients as a space separated list. Substitute spaces in the ingredient's name by dashes. Enter "exit" to terminate the application.

**exit**

As you can see the new cocktail Sweet Excellent Liquor (SEL) is returned right away as we would have expected. Enjoy!