

Commonality Analysis for Cocktail Making

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1. Introduction

The basic functionality of cocktail making has remained constant for a long time. We offer here an analysis of the common and variable parts of the process in order to reduce costs, improve reliability and efficiency. Hopefully the common tasks in the process can be automated in the future.

2. Overview

Cocktail is mainly made up of three components: Base, Modifier and Garnish. We will discuss each of these components in this document. This commonality analysis will address the following related issues:

- What are cocktail types?
- What are the valid bases for cocktails?
- What are the valid modifiers for cocktails?

3. Definitions

Cocktail	<p>A cocktail is a mixed drink typically made with a distilled liquor (such as arrack, brandy, cachaça, gin, rum, tequila, vodka, or whiskey) as its base ingredient then mixed with other ingredients or garnishments.</p> <p>In each drink, every ingredient falls into at least one category. The core is the primary flavor; balance enhances the core with sweetness, acidity, or both; and seasoning adds another dimension and complements or contrasts with the core.</p>
Ice	<p>Ice is water frozen into a solid state, typically forming at or below temperatures of 0 degrees Celsius. It is generally added to cocktails to make them colder.</p>

Base	<p>The major alcoholic drink used in the preparation of a cocktail is called the Base, which is usually a spirit. If a cocktail has two or more alcoholic drinks, the quantity of the base generally will be more than the other.</p> <p>If two alcoholic drinks are used in the same quantity, let us assume wine and spirit, then the one with higher alcoholic strength, that is, the spirit and other is considered as the base.</p>
Modifier	<p>These are complementary ingredients of cocktails added to modify or enhance the flavors. Fresh fruit juices, soda, eggs, cream, water, etc. are used as modifiers.</p> <p>Modifiers are very essential for all kinds of mixed drinks. Without the addition of modifiers, one cannot call a mixed drink but a straight drink. The modifiers made each drink different from the others having the same base.</p>
Herbs	<p>Herbs are a widely distributed and widespread group of plants, excluding vegetables and other plants consumed for macronutrients, with savory or aromatic properties that are used for flavoring and garnishing food for medicinal purposes or fragrances.</p>
Garnish	<p>Garnishes are decorative ornaments that add character or style to a mixed drink, most notably to cocktails. In general, all sweet cocktails are garnished with cherries and the dry cocktails are garnished with olive or lemon slices. It should be remembered that some drinks do not have any standard garnish and it is advisable to serve without any garnish, instead of trying out different garnishes and spoiling the real flavor and value of the drink.</p>

4. Commonalities

The following statements are basic assumptions about the domain of cocktail making.

Ice

Ice is one of the most important ingredients in any good cocktail, and too many people skimp on this important element. You should always add as much ice as you can fit into the glass. With more ice, the drink stays colder and actually dilutes less, meaning that the drink stays cold, strong, and fizzy.

Fruits

Fruits should be fresh because even though there are some good prepared ingredients that can be bought, nothing compares to the freshness of a just-squeezed citrus fruit or freshly muddled raspberry.

Alcohol

Generally all cocktails have alcoholic drinks like brandy, gin, rum, tequila, vodka, or whiskey as the base ingredients.

Shaking

When shaking a cocktail, what you're doing is trying to wake the ingredients up, not rock them to sleep. So shake as hard as you can! We want the drink to be ice cold, diluted just enough and aerated from the shake, so work it!

Herbs and Garnishes

Crushing fruit and herbs should be done so that their flavors escape into the drink. You should never throw an entire uncrushed herb or piece of fruit into your drink. You don't want to grind them into a powder, but you want to break them down for easy mixing.

Fruits and rinds require a lot more pressure, especially pineapple and grapefruit. You can twist the rind a little to make it easy for muddling. If you want to make a garnish, make a small slice through the fruit so you can slide it on your rim.

5. Variabilities

Ice

Sometimes ice can be added in low quantity and other times too much. Also, ice can be added at the beginning or the end. Generally, ice should be the last thing that goes into the cocktail (except the garnish, of course) because if you put the ice in first, then start building the drink, it will instantly start diluting. Pour all of your ingredients in first, then add the ice.

Fruits

Fruits can be fresh as well as stale. Generally nothing compares to the freshness of a just-squeezed citrus fruit or freshly muddled raspberry. So, fruits used for cocktail making should be fresh in nature.

Alcohol

The taste of the cocktail will vary depending on the concentration of the alcoholic drinks used and the tradeoff between sweetness and acidity of the whole mixture. Lighter cocktails consist of low alcoholic content and higher fruit juice or other sweet mixtures concentration and conversely stronger cocktails consist of higher alcoholic content and lower fruit juice or other sweet mixtures.

Shaking

Shaking is done to integrate mixers into liquids. Stirring allows liquor and bitters to mix together without damaging ice or herbs. Shaking the drink with ice will water it down slightly. So slightly higher amounts of liquor needs to be used to balance the dilution out. Shaking will also add air, so you will need to strain it in order to taste all of its flavors. You only need to shake or stir a drink for ten or so seconds. Overshaking can heat a drink up, which will produce an unpleasant experience.

Herbs and Garnishes

Sometimes we throw an entire uncrushed herb or piece of fruit into the drink. Other times, we grind them into a powder for easy mixing. There should be a tradeoff between uncrushed and full grinding of the herbs for optimal cocktail making.

In general, all sweet cocktails are garnished with cherries and the dry cocktails are garnished with olive or lemon slices. It should be remembered that some drinks do not have any standard garnish and it is advisable to serve without any garnish, instead of trying out different garnishes and spoiling the real flavor and value of the drink.

6. Parameters of Variation

#	Name	Meaning	Domain	Decision Time	Default
P1	Ice cubes	With more ice cubes, the drink stays colder and actually dilutes less, meaning that the drink stays cold, strong, and fizzy.	{1, 2, 3, 4, 5}	specification	1
P2	Fruit slices	Fruit slices can be fresh as well as stale.	{Apple, Lemon, Orange}	specification	Lemon

P3	Shakers	Shakers are containers used to shake the cocktail mixture. Three types of cocktail shakers available.	{Boston, Cobbler, Parisian}	specification	Boston
P4	Alcohol	An alcoholic drink contains ethanol, a type of alcohol produced by fermentation of grains, fruits.	{Brandy, Rum, Vodka, Tequila, Whiskey}	specification	Vodka
P5	Herbs	Herbs are a group of plants consumed for macronutrients that are used for flavoring and garnishing food, for medicinal purposes and for fragrances.	{Mint, Rosemary, Cilantro, Thyme}	specification	Mint
P6	Garnish	Garnishes are decorative ornaments that add character or style to cocktails	{Twists,Fruits, Leaves, Flowers}	specification	Fruits

7. Issues

- 1) Can fruit juice be considered a cocktail?

Resolution: No, Cocktails should have at least one alcoholic drink as its base.

Method: This type of drink is called a mocktail which is basically similar to alcohol with the only difference being that there is no alcoholic content in it.

- 2) Can a fruit juice and alcohol together without herbs and garnish be considered a cocktail?

A1) No, Cocktails should have either herb or garnish as it is an essential component of a cocktail.

A2) Yes, the most essential component of a cocktail is alcohol which is the base, so its presence confirms that the mixture is a cocktail.

Resolution: Cocktails should have all the basic components otherwise it is not considered a cocktail. So, fruit juice and alcohol together without herbs and garnish cannot be considered as cocktails.

- 3) Can cocktails be consumed by anyone?

Resolution: No, cocktails can only be consumed by adults as it has alcoholic content.

- 4) Can the quantity of ice added affect the taste and experience of drinking a cocktail in a bad way?

A1) No, adding ice to cocktails enhances its drinking experience as it makes the drink feel more fresh and less bitter.

A2) Yes, it dilutes the cocktail mixture as a whole and hence we get a watered down version of the cocktail mixture which worsens the experience of alcohol and cocktail as a whole and it tastes bland.

Resolution: No, adding ice in moderate quantities does not affect the cocktail drinking experience in a bad way as it is necessary to reduce the sense of bitterness in cocktails from the alcohol which helps to make it taste more pleasant and refreshing.

8. TODO

All sections are completed.

9. History

Date	Duration	Def.s	Comm.s	Var.s	Par.s	Issues	Res.
19/04/2022	30 minutes	1	0	0	0	0	0
20/04/2022	30 minutes	2	0	0	0	0	0
21/04/2022	30 minutes	4	0	0	0	0	0
22/04/2022	30 minutes	4	4	0	0	0	0
23/04/2022	30 minutes	4	4	4	0	0	0
24/04/2022	30 minutes	4	4	4	4	0	0
25/04/2022	30 minutes	4	4	4	6	4	4

10. Effort

2021201047	Goutham C M	3.5 hr
2021201062	Mainak Dhara	3.5 hr
2021201086	Soumadipta Bose	3.5 hr
2021201081	Akilesh Panicker	3.5 hr