

Data Visualization Course Report

The Data Story of Cocktails Wheel



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The Data Story of Cocktail Wheel

Team and Topic



The reason we chose to dig into cocktails is that we share same interests in synesthesia, which demonstrates the relation among different senses like auditory, gustatory and/or visual(it was definitely not because we got an alcoholic among us). We would like to provide those who doesn't seem to know cocktails pretty much a well designed guidance to interact with. During the process of research we gained better understanding about Data Visualization, how to discover underlying patterns out of data and graphs like a pro, as well as how to organize our data story in reasonable ways.



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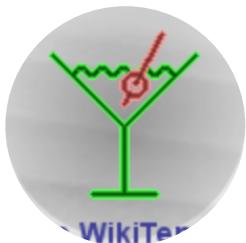
Interaction Design

We are a solid team with multi-backgrounds, from graphic design to software engineering. We are able to handle design and engineering correspondingly, which provides us a lot flexibilities in the process of data mining and analyzation, as well as the further development of the cocktail wheel app.

The Data Story of Cocktail Wheel

How Do We Get Data

We started from several publications about cocktails as our main data source. However, after we found it hard to transfer the format from printed labels into digital bytes, we decided to change our target to online sources such as websites and forums. Chances are we are able to find reliable data sources which are frequently maintained or put it in another way, not quite out of date yet (Since some of the forums and sites are really old-fashioned & outmoded). Fortunately enough we discovered these following sites.



<http://wiki.webtender.com/wiki/Home>



<http://www.yummly.com>

Webtender is a wiki system whose bartending resource is there for the benefit of all cocktail/ bartending enthusiasts, regardless of experience, or supposed expertise. This wiki contains verified facts, recipes, citations, with which the past "truths" of bartending can be dispelled or corroborated.

Yummly.com was launched in 2010 by foodies on a mission to invent the ultimate kitchen tool. Whether it's finding a recipe or going to the store, Yummly wants to make it easier for foodies to do what they love – cook, eat, and share.



The banner has a pink background. On the left, the import.io logo is displayed in white. On the right, the text "Extract web data the easy way" is written in white, with a small triangular graphic pointing towards the text.

We discover the import.io in the second week, it is a rapid online web tools for you to scrap data from web pages with just an url, moreover there is no need to write a single line of code when you are using it. It provides an online interface for users to editing and modified data source according to their needs, and most importantly, it is free.

The Data Story of Cocktail Wheel

How Do We Get Data

<http://wiki.webtender.com/wiki/Home>

- Stir in mixing glass with ice & strain
- 1 3/4 oz gin (5 cl, 7/16 gills)
- 3/4 oz dry vermouth (2 cl, 3/16 gills) — — ►
- Add olive (or lemon twist)
- Serve in a cocktail glass

- Name of Ingredients
- Amount of Ingredients
- Way of Making
- Type of Glass

From webtender we scrap datas related with ingredients and receipts of 72 different kinds of cocktails. The raw data on webtender is hypertext, based on which we converted into .csv using import.io. Eventually we got a .csv file with columns listed as follow.

Alcohol	Name	Category	Making	Base Wine	Base Wine Amount
Liquor	Liquor Amount	Juice	Juice Amont	Spice	Spice Amount
Soda	Soda Amount	Spice	Spice Amont	Others	Type of Glass

<http://www.yummly.com>



From Yummly we scrap datas related with flavours of six dimensions of 48 different kinds of cocktails. We were using the same approach to crawl data from pages on yummly.com, consequently we got another .csv file with column listed as follow

Name	Salty	Savory	Sour	Sweet	Bitter	Spicy

The Data Story of Cocktail Wheel

How Do We Get Data

Finished generating those two sets of data, we made an intersection since they share the same property of 'Name'. So we came out with a data set contains 48 cocktails with full records of ingredients and flavor in the first stage of data gaining.

Alcohol	Name	Category	Making	Base Wine	Base Wine Amount	Liquor	Liquor Amount	Juice
5	Tequila Sunset	Short	Blend	Tequila	30	-	-	Lemon
7	Chi-Chi	Long	Shake	Vodka	30	-	-	Pineapple
10	Sex on the Beach	Long	Build	Vodka	15	Melon_20/Raspberry_10	30	Pineapple
10	Horse's Neck	Long	Build	Brandy	45	-	-	-
11	El Diablo	Long	Build	Tequila	30	-	-	-
12	Bloody Mary	Long	Build	Vodka	45	-	-	Tomato
12	Moscow Mule	Long	Build	Vodka	45	-	-	Lime
12	Cuba Libre	Long	Build	Rum	45	-	-	Lime
12	Tequila Sunrise	Long	Build	Tequila	45	-	-	Orange
12	Harvard Cooler	Long	Shake	Brandy	45	-	-	Lemon
13	Salty Dog	Long	Build	Vodka	45	-	-	Grapefruit
13	John Collins	Long	Build	Whiskey	45	-	-	Lemon
14	Gin & Tonic	Long	Build	Gin	45	-	-	-
14	Vodka & Tonic	Long	Build	Vodka	45	-	-	-
14	Blue Hawaii	Long	Shake	Rum	30	Blue Curacao	15	Pineapple_30/Lemon_15
15	Screwdriver	Long	Build	Vodka	45	-	-	Orange
16	Tom Collins	Long	Shake	Gin	45	-	-	Lemon
17	Singapore Sling	Long	Shake	Gin	45	Sherry	20	Lemon
17	Havana Beach	Short	Shake	Rum	30	-	-	Pineapple
17	Imperial Fizz	Long	Shake	Whiskey	45	White Rum	15	Lemon
19	Long Island Ice Tea	Long	Build	Gin	15	Vodka_15/Rum_15/Tequila_15/White Curacao_10	55	Lemon
19	Zombie	Long	Shake	Rum	60	Apricot Brandy	10	Orange_15/Pineapple_15/Lemon_10
22	Cosmopolitan	Short	Shake	Vodka	30	White Curacao	10	Lime_10/Cranberry_10
25	Negroni	Long	Build	Gin	30	Campari_30/Sweet Vermouth_30	60	-
25	Mai-Tai	Long	Shake	Rum	50	Orange Curacao	5	Orange_10/Pineapple_10/Lemon_5
25	Mojito	Long	Build	Rum	45	-	-	-
25	Silk Stockings	Short	Shake	Tequila	30	Coco	15	-
25	Mockingbird	Short	Shake	Tequila	30	Green Mint	15	Lime
26	Margarita	Short	Shake	Tequila	30	White Curacao	15	Lime
26	New York	Short	Shake	Whiskey	45	-	-	Lime
26	Sidecar	Short	Shake	Brandy	30	White Curacao	15	Lemon
28	Gin Fizz	Long	Build	Gin	45	-	-	Lemon
28	Miami Beach	Short	Shake	Whiskey	35	Dry Vermouth	10	Grapefruit
28	Cherry Blossom	Short	Shake	Brandy	30	Sherry_30/Orange Curacao_2	32	Lemon
30	Vodka Gimlet	Short	Shake	Vodka	45	-	-	Lime
30	Brooklyn	Short	Shake	Whiskey	40	Dry Vermouth_20/Bitter_1/Black Cherry_1	-	-
32	Martini Sweet	Short	Stir	Gin	40	Sweet Vermouth	20	-
32	Black Russian	Long	Build	Vodka	40	Coffee	20	-
32	Brave Bull	Long	Build	Tequila	40	Coffee	20	-
32	Old Fashioned	Long	Build	Whiskey	45	Dry Vermouth	20	-
32	Manhattan	Short	Stir	Whiskey	45	Sweet Vermouth	15	-
32	Dirty Mother	Long	Build	Brandy	40	Coffee	20	-
32	Stinger	Short	Shake	Brandy	40	White Mint	20	-
32	French Connection	Long	Build	Brandy	45	Apricot	15	-
34	Martini	Short	Stir	Gin	45	Dry Vermouth	15	-
34	Godfather	Long	Build	Whiskey	45	Apricot	15	-
35	Tequila Martini	Short	Stir	Tequila	48	Dry Vermouth	12	-
40	Earthquake	Short	Shake	Gin	20	Pernod	20	-

The Data Story of Cocktail Wheel

How Do We Get Data

Juice Amount	Spice	Spice Amount	Soda	Soda Amount	Others	Type of Glass	Salty	Savory	Sour	Bitter	Sweet	Spicy
30	Sugar	5	-	-	Ice	Champagne Saucer	0	17	83	17	50	0
80	-	-	-	-	Coconut Milk	Armagnac Glass	0	17	67	0	50	0
80	-	-	-	-	-	Highball	0	0	83	0	50	0
-	-	-	Ginger	200	Lemon Piece	Old Fashioned	17	17	83	0	17	0
-	-	-	Ginger	250	Orange Piece	Highball	17	0	50	17	50	0
240	-	-	-	-	Lemon Piece/Celery	Highball	17	17	83	17	17	83
15	-	-	Ginger	220	Lime Piece	Highball	0	0	83	0	17	0
10	-	-	Cola	220	Lime Piece	Highball	0	0	0	17	50	0
90	Sugar	10	-	-	Orange Piece	Champagne Flute	0	17	83	0	50	0
20	Sugar	5	Soda	200	-	Highball	17	0	17	0	17	0
220	-	-	-	-	Snow Salt	Old Fashioned	17	0	83	17	33	0
15	Sugar	8	Soda	210	Lemon Piece/Cherry	Highball	17	0	17	0	17	0
-	-	-	Tonic	240	Lemon Piece	Highball	17	0	83	0	33	0
-	-	-	Tonic	200	-	Old Fashioned	0	17	83	0	33	0
45	-	-	-	-	Pineapple Piece/Cherry/Mint	Cognac Ballon	0	0	17	0	17	0
240	-	-	-	-	Orange Piece	Highball	0	17	83	0	50	0
20	Sugar	8	Soda	200	Lemon Piece	Highball	17	17	17	83	17	0
20	-	-	Soda	200	Lemon Piece/Cherry/Orange Piece	Highball	0	0	67	17	17	0
30	Sugar	5	-	-	-	Martini Glass	0	0	33	0	50	0
20	Sugar	8	Soda	180	-	Highball	0	17	33	17	17	0
30	Sugar	5	Cola	40	-	Highball	0	0	17	0	67	0
40	Sugar	5	-	-	Orange Piece	Highball	0	0	83	0	67	0
20	-	-	-	-	-	Martini Glass	0	0	33	17	50	0
-	-	-	-	-	Orange Piece	Old Fashioned	83	17	0	17	67	0
25	-	-	-	-	Pineapple Piece/Orange Piece/Cherry	Rock	0	0	50	17	33	0
-	Sugar	5	-	-	Lime/Mint	Highball	17	0	33	0	17	0
-	Sugar	5	-	-	Cream/Cherry	Martini Glass	17	17	17	17	50	0
15	-	-	-	-	-	Champagne Flute	0	17	67	17	17	0
15	-	-	-	-	Snow Salt	Martini Glass	0	0	50	0	83	0
15	Sugar	8	-	-	Orange Piece	Martini Glass	0	0	50	17	67	0
15	-	-	-	-	-	Martini Glass	0	0	67	17	83	0
20	Sugar	10	-	-	Lemon Piece	Highball	17	17	50	17	0	0
15	-	-	-	-	-	Martini Glass	33	17	67	17	33	0
2	Sugar	2	-	-	-	Martini Glass	17	17	17	17	83	0
15	Sugar	5	-	-	-	Cordial Glass	0	0	50	0	17	0
-	-	-	-	-	-	Shot Glass	17	0	83	17	33	0
-	-	-	-	-	Cherry	Martini Glass	50	17	67	17	33	0
-	-	-	-	-	-	Rock	0	0	0	17	50	0
-	-	-	-	-	-	Old Fashioned	0	0	0	0	50	0
-	Bitter	2	-	-	Orange Piece/Lemon Piece/Cherry	Old Fashioned	17	0	83	17	50	0
-	Bitter	1	-	-	Lemon Piece/Cherry	Martini Glass	17	0	0	17	17	0
-	-	-	-	-	-	Rock	17	17	17	17	83	0
-	-	-	-	-	-	Martini Glass	0	0	0	0	50	0
-	-	-	-	-	-	Old Fashioned	0	0	0	17	67	0
-	-	-	-	-	Olive	Martini Glass	17	17	17	17	0	0
-	-	-	-	-	-	Old Fashioned	0	0	0	17	50	0
-	-	-	-	-	Olive	Martini Glass	0	0	33	0	17	0
-	-	-	-	-	-	Martini Glass	17	17	83	17	17	0

The Data Story of Cocktail Wheel

How Do We Get Data



<https://color.adobe.com/zh/create/color-wheel>

Colors as an essential element of cocktails cannot be ignored. We collect a set of images based on the origin data set of 48 cocktails, and then we use Abode Color CC(a convenient color extraction tools available online) to extract colors out of it.



The Data Story of Cocktail Wheel

How Do We Get Data



Based on the previous extractions of colors among 48 cocktails, we further extract the most essential color of each cocktails for subsequent usage in the next step.

The Data Story of Cocktail Wheel

The Analysis and Play Arounds



Numbers



Tableau

RAW

The tools listed above are the three essential softwares as the data analyzation toolkit that we used in the intermediate step, which is, the analysis and play arouds of the data. The problem that we occured as data researchers was that our dataset was relatively simple and straight forward, which means that all of our relations of data came directly from websites that someone already summerized for us, yet we never came to run through surveys or researches that engage with people. For that we need to dig into what we have and uncover certain underlying patterns, which could regards to ingredients, flavors and appearances.

Liquer Wine Bubble mapping

Juice Bubble mapping

Spice Bubble mapping

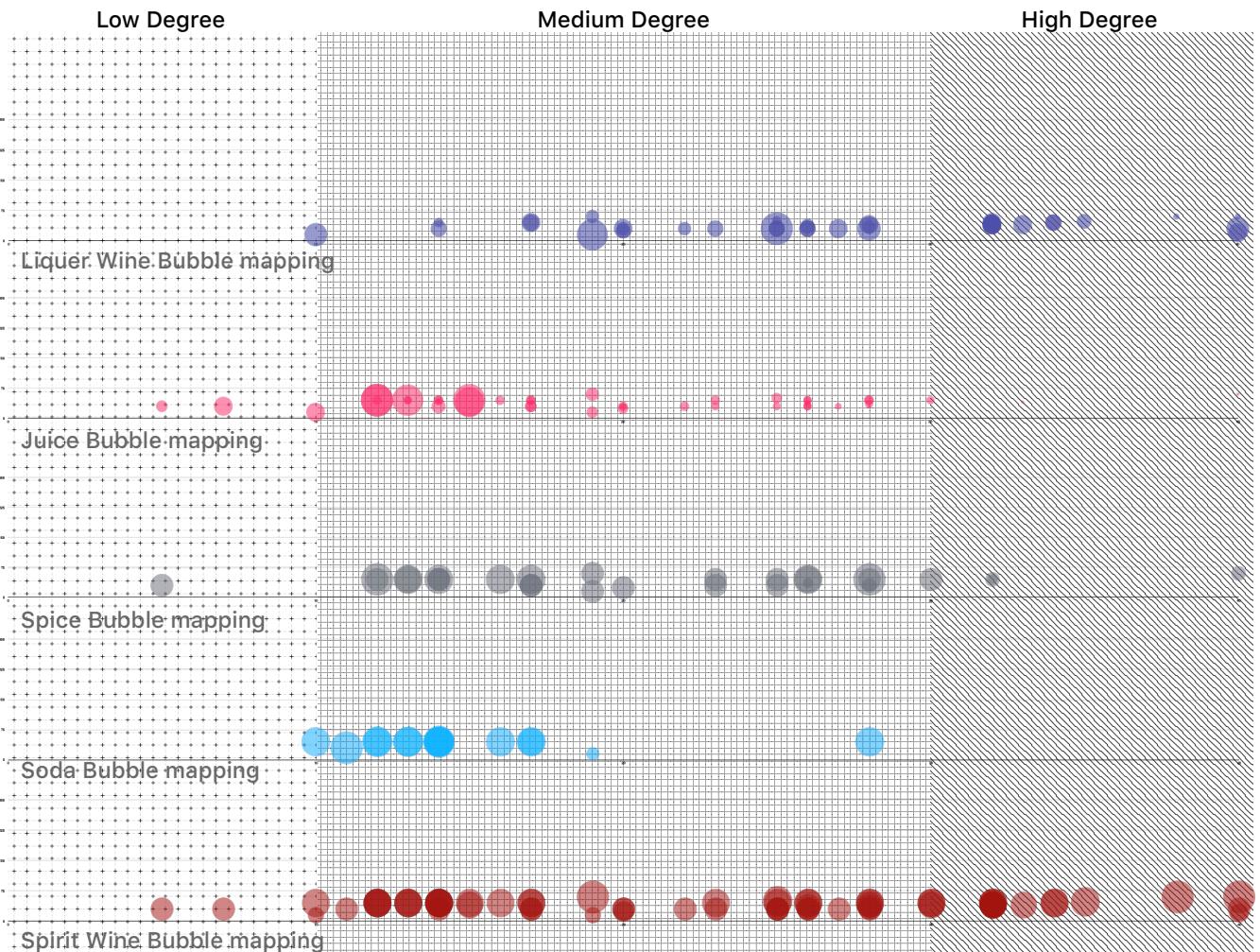
Soda Bubble mapping

Spirit Wine Bubble mapping

The Bubble Map of ingredients of each cocktails generated directly from data with Numbers

The Data Story of Cocktail Wheel

The Analysis and Play Arounds

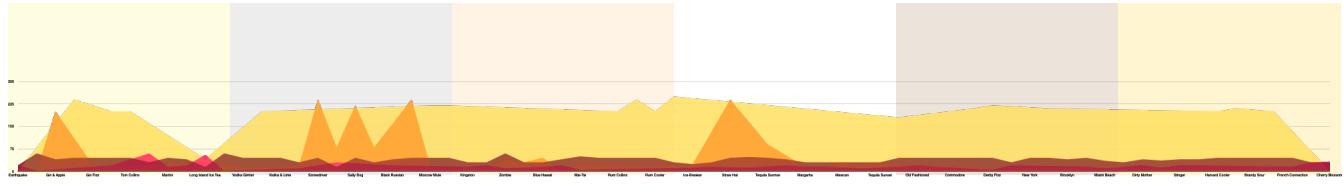
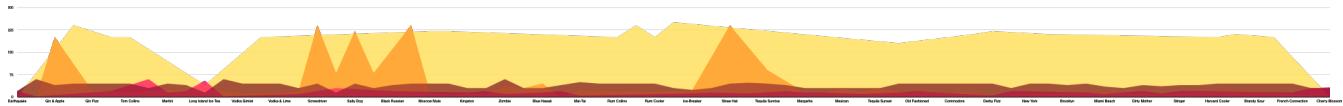


After generating the initial graph out of the raw data, we began to stack multiple layers of graphical content together, by doing which there already shows several retionals like, among cocktails with high degrees of alcohol, the amount of ingredients (except for spirit wine) had reduce significantly.



The Data Story of Cocktail Wheel

The Analysis and Play Arounds



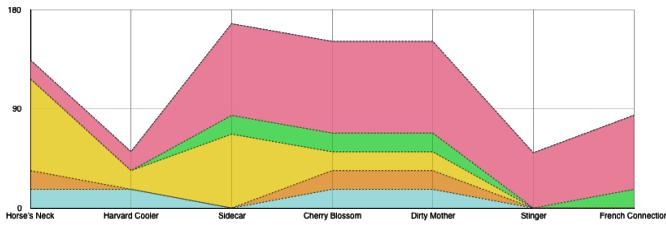
Here's another example of stacked graphics. We took into the perspective of categories of spirit wine. The first graph is the area map we generated directly from data with Numbers, then we stacked another layer that represents six sections of spirit wine, Gin, Vodka, Rum, Tequila, Whiskey and Brandy. The trends become obvious after we combined the layers altogether, for instance, the amount of juice that bartenders put into cocktails based in Vodka is way beyond other categories of spirit wine.



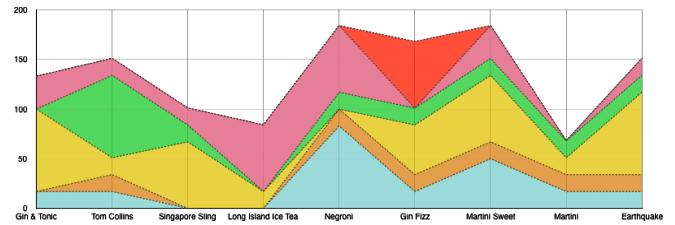
The above graphs was made with Numbers and the Sketch app. They show general patterns regards to ingredients of cocktails corresponding to our perspectives of looking the data, from spirit wines to the degree of alcohols, which we consider, however, is far away from satisfying. We then decided to extent our analysis which means merging the data of flavors with ingredients together.

The Data Story of Cocktail Wheel

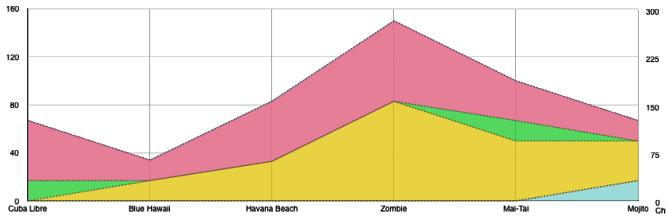
The Analysis and Play Arounds



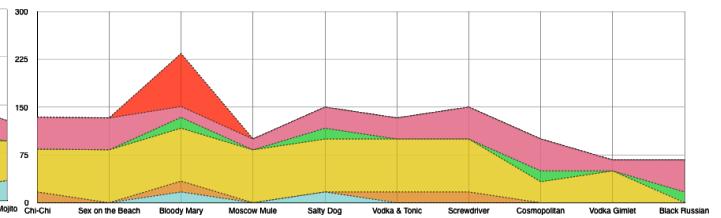
Brandy Family



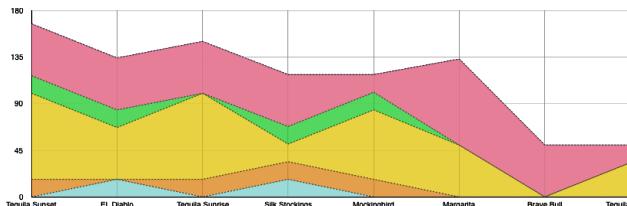
Gin Family



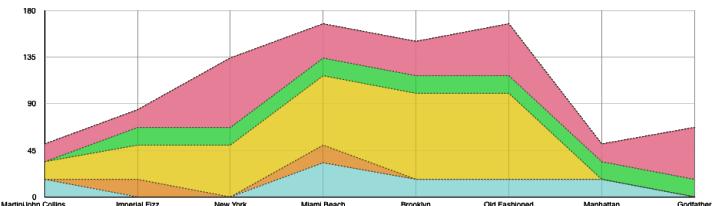
Rum Family



Vodka Family



Tequila Family



Whiskey Family

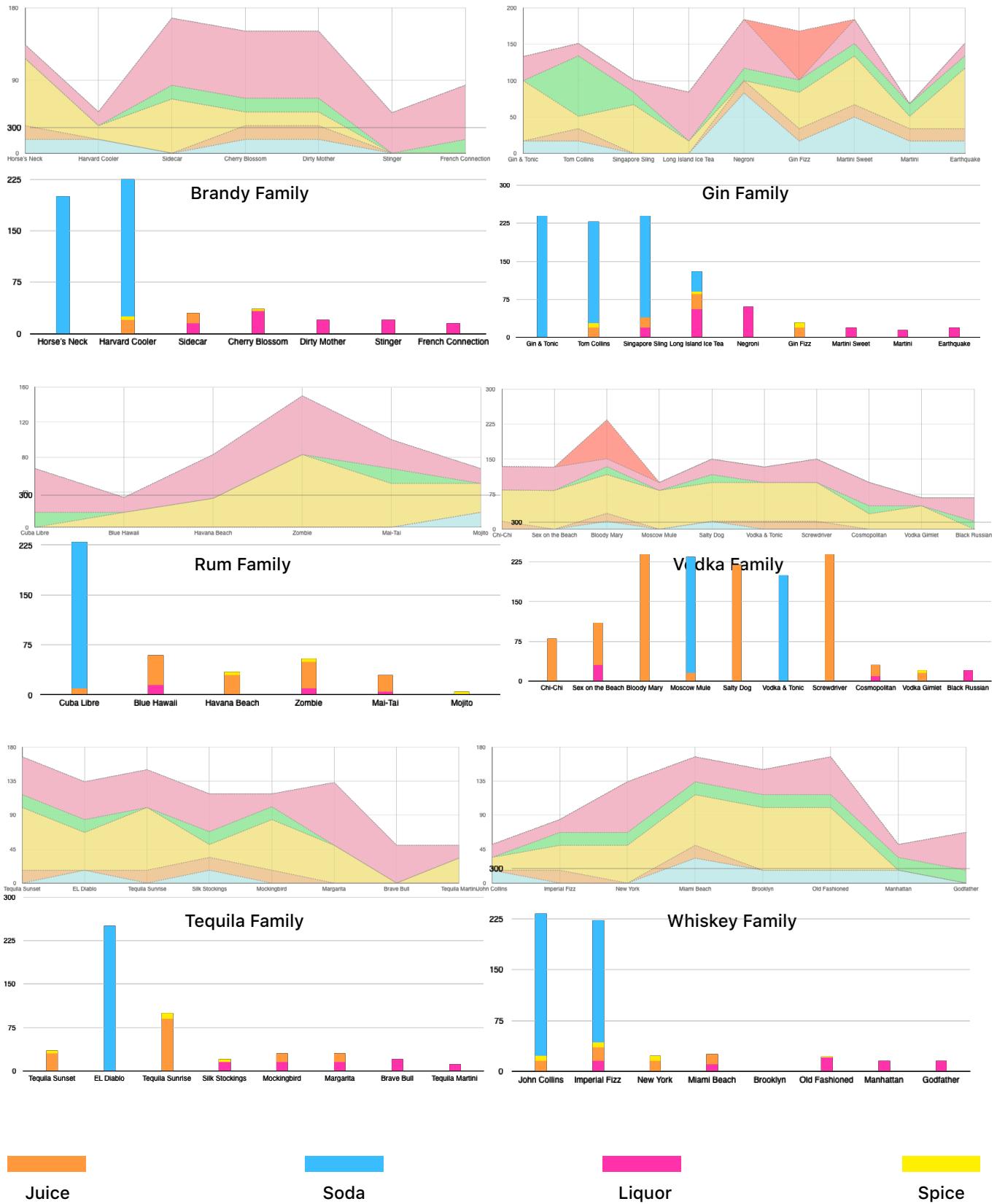


Still, we divided cocktails into six categories based on different sprite wines, yet this time we did something related with six dimensions of flavours. In the above stacked area map, the trends of each cocktail family is unique, the brandy family is sweet, the gin family shows a rich variety in different flavours, the rum family is either sweet or sour, the taste of cocktails in the vodka family is relatively the mildest (for the smallest amount of area in total), which on the contrary shows in an opposite way in the Tequila & Whiskey Family.

The Data Story of Cocktail Wheel

The Analysis and Play Arounds

It would be better to relate flavors with ingredients, there could be possible underlying relations although our volume of data wasn't large enough, yet it still worth trying.



The Data Story of Cocktail Wheel

The Analysis and Play Arounds

As indicated in the previous page, the stack column graph of ingredients was integrated with the stack area graph of flavours. Based on what we may draw several general conclusions such as the reason why the Brandy family taste sweet is due to reason that there has a lot liquor wine been put into, which as a phenomenon, also happens in the Rum family and the Vodka family, for there are much juice inside of them.

However, to be honestly here, we were a little bit frustrated and disappointed about what we had when we arrived to this stage, cause there was no such evidence that indicates the relation between ingredients and flavours clear enough as we expected in the first way. We then rethink the whole process and came out with the following conclusion.

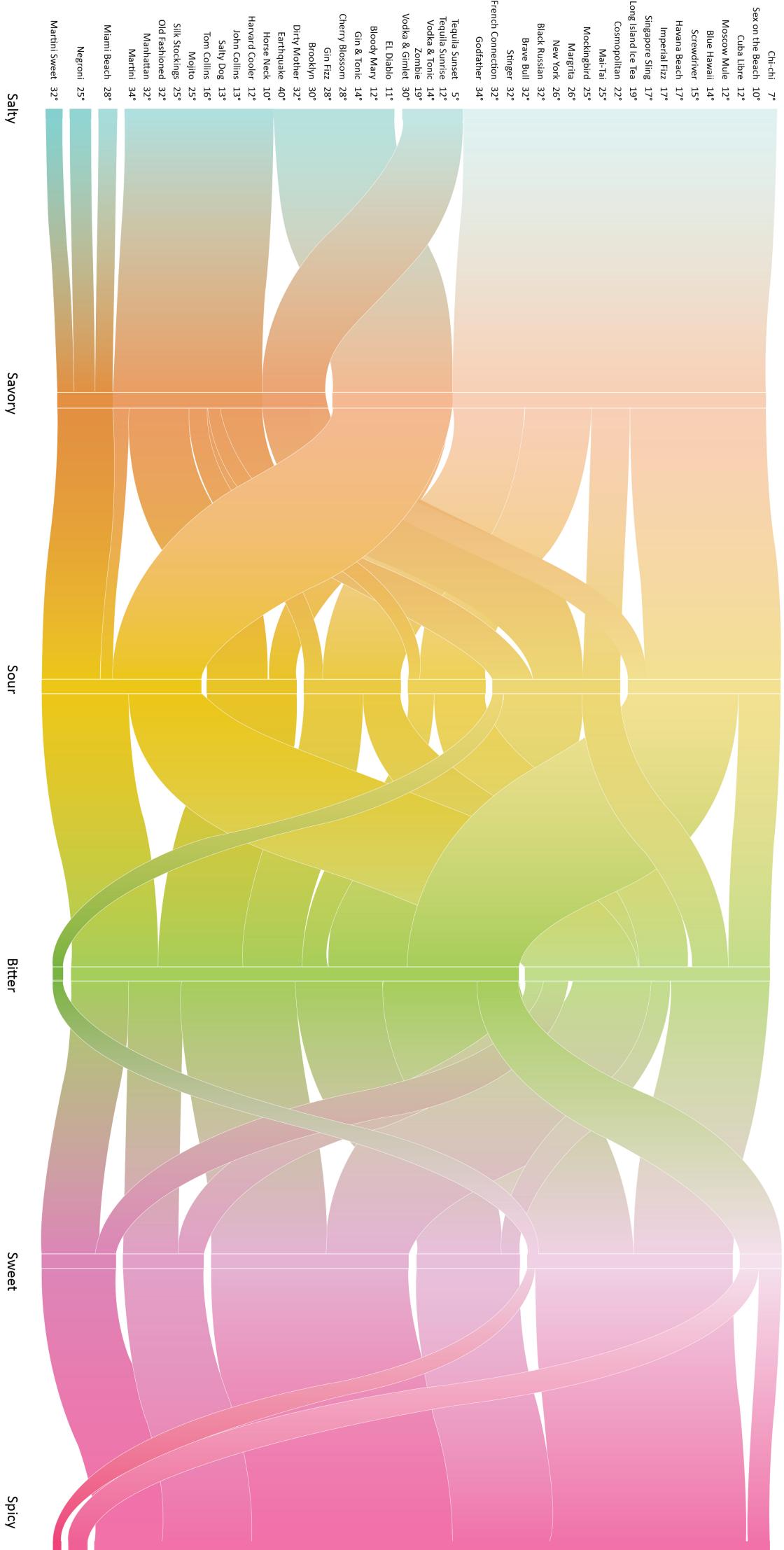
First of all, the data of ingredients and the data of flavours came from two different sites, so it is not odd to see there weren't so much similarities, not mention conflicts.

Secondly, the flavour and the taste itself is indeed a significantly complicated issue, if we came close to successfully mapping a reliable pattern or formula based on what we have, a dataset of 48 cocktails, that can be the most rediculous thing happend since Donald Trump had announced his presidential campaign.

Eventually, we deciced to dig into the flavour of cocktails itself for those who doesn't seem to know cocktails very well, as well as the prospective of color and appearance, and most importantly, a dynamic visual format that absracts the taste, a matter that you couldn't see or touch, into visible content.

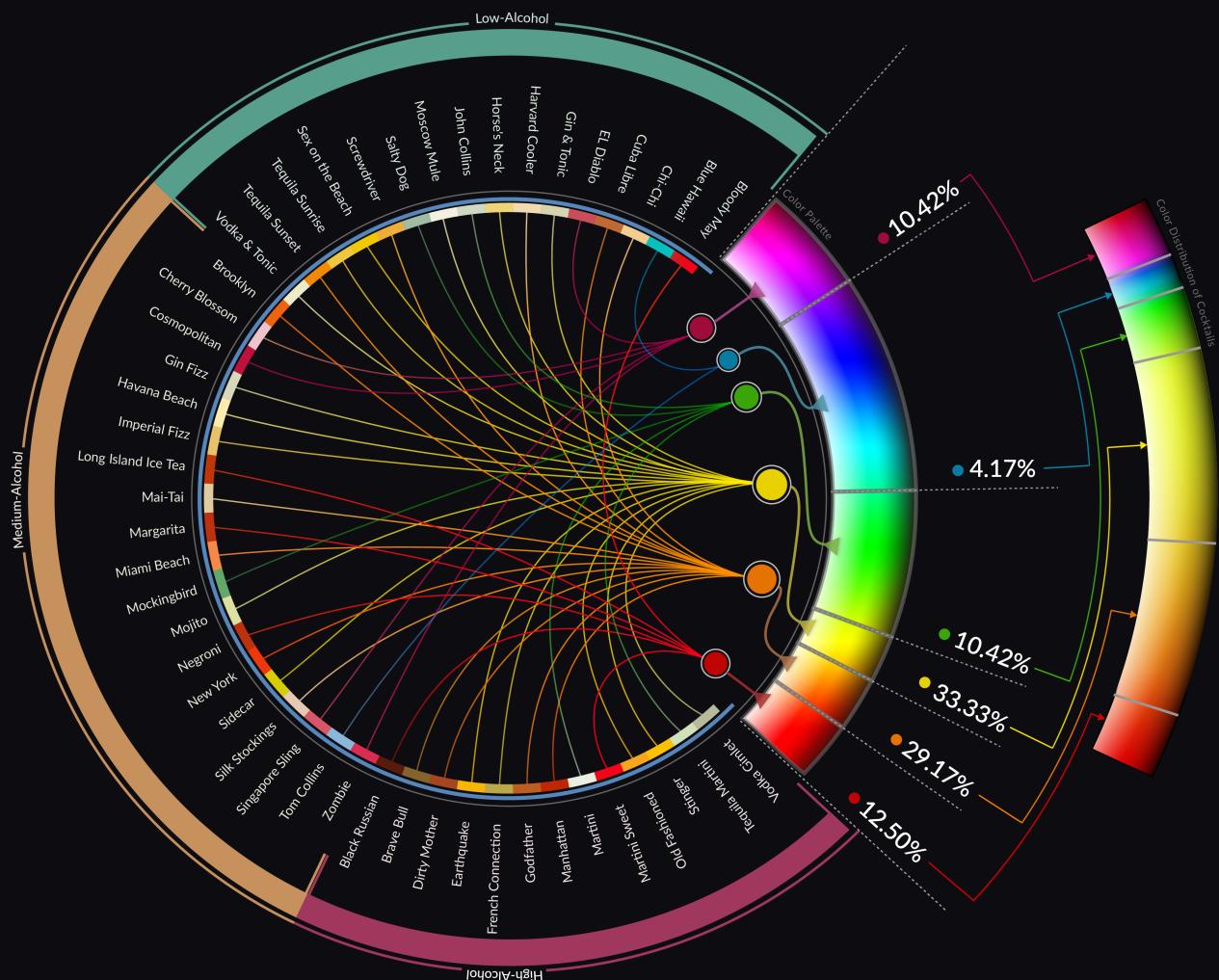
The Data Story of Cocktail Wheel

Constructing



The Data Story of Cocktail Wheel

Constructing



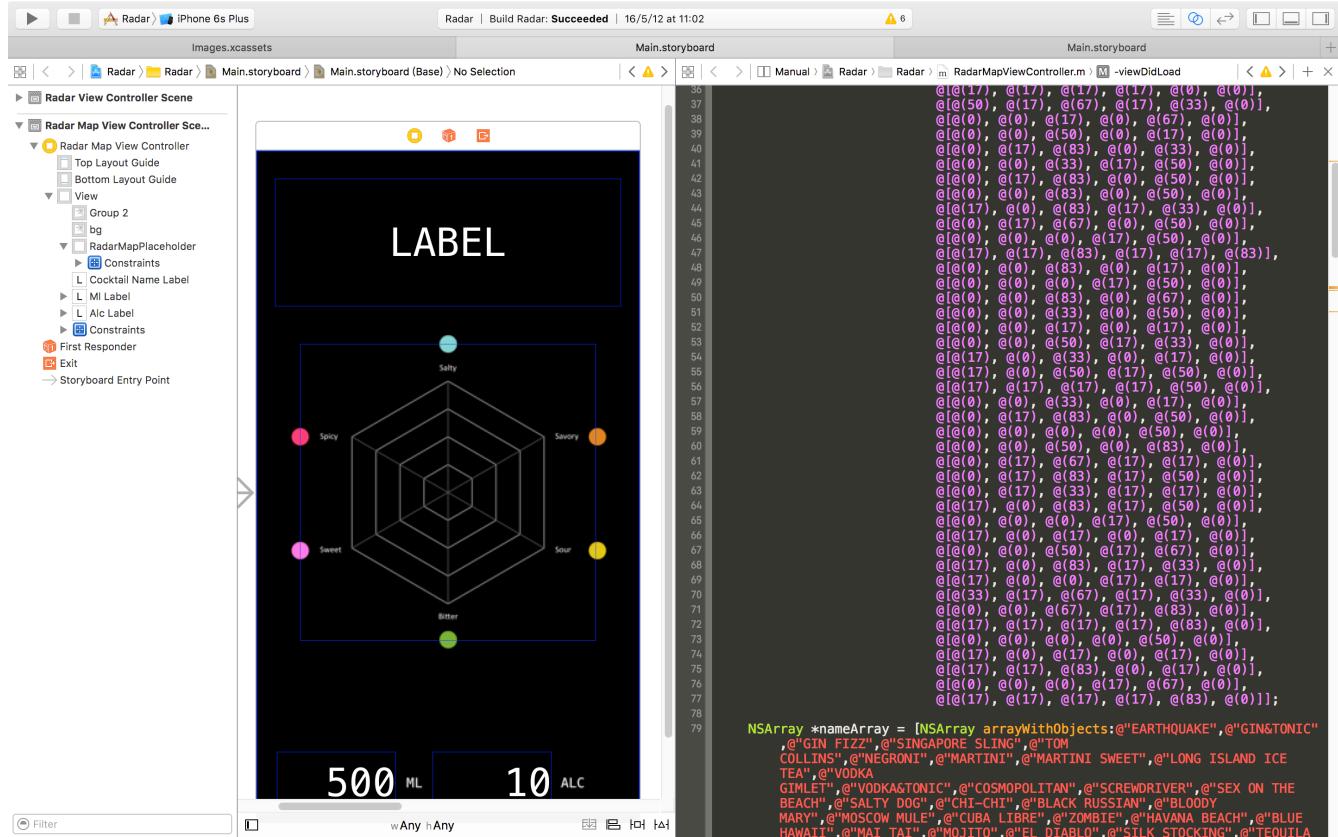
COLOR DISTRIBUTION OF COCKTAILS

In each interval of Alcohol, the cocktails are arranged by alphabetic order.

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The Data Story of Cocktail Wheel

Constructions



Firstly we use Python to convert our .csv format dataset into JSON, since it is well-structured and is way more easy to manipulate when programming.

The radar graph of 48 cocktails were drawn with code in Xcode using Objective-C. Each one of them indicates the combination and distribution of six different flavours of corresponding cocktail. Meanwhile the gradient color was also drawn with code based on the color we extracted using Adobe Color CC, so it represent the appearance and the taste at the same time when you are reading it.

Still, this is the intermediate step before we arrive to the final stage of visualization, which will be represents further designed visual structures and more specific visual languages.

The Data Story of Cocktail Wheel

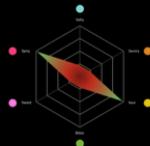
Constructions

BLACK RUSSIAN



60 ml 32 alc

BLOODY MARY



285 ml 12 alc

BLUE HAWAII



90 ml 25 alc

BRAVE BULL



60 ml 26 alc

CUBA LIBRE



275 ml 19 alc

DIRTY MOTHER



60 ml 32 alc

EARTHQUAKE



40 ml 40 alc

EL DIABLO



280 ml 25 alc

HARVARD COOLER



270 ml 12 alc

HAVANA BEACH



65 ml 14 alc

HORSE'S NECK



245 ml 10 alc

IMPERIAL FIZZ



65 ml 17 alc

MARGARITA



60 ml 25 alc

MARTINI SWEET



60 ml 32 alc

MARTINI



60 ml 34 alc

MIAMI BEACH



60 ml 28 alc

NEW YORK



210 ml 13 alc

OLD FASHIONED



270 ml 32 alc

SALTY DOG



265 ml 13 alc

SCREWDRIVER



285 ml 15 alc

The Data Story of Cocktail Wheel

Constructions

BROOKLYN



62 ml 30 alc

CHERRY BLOSSOM



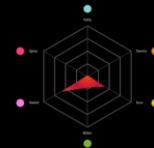
66 ml 28 alc

CHI-CHI



110 ml 7 alc

COSMOPOLITAN



60 ml 22 alc

FRENCH CONNECTION



60 ml 32 alc

GIN FIZZ



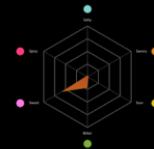
275 ml 28 alc

GIN&TONIC



285 ml 14 alc

GODFATHER



67 ml 34 alc

JOHN COLLINS



210 ml 13 alc

LONG ISLAND ICE TEA



145 ml 19 alc

MAI_TAI



80 ml 12 alc

MANHATTAN



60 ml 32 alc

MOCKINGBIRD



60 ml 25 alc

MOJITO



270 ml 11 alc

MOSCOW MULE



280 ml 12 alc

NEGRONI



90 ml 25 alc

SEX ON THE BEACH



125 ml 10 alc

SIDECAR



60 ml 26 alc

SILK STOCKING



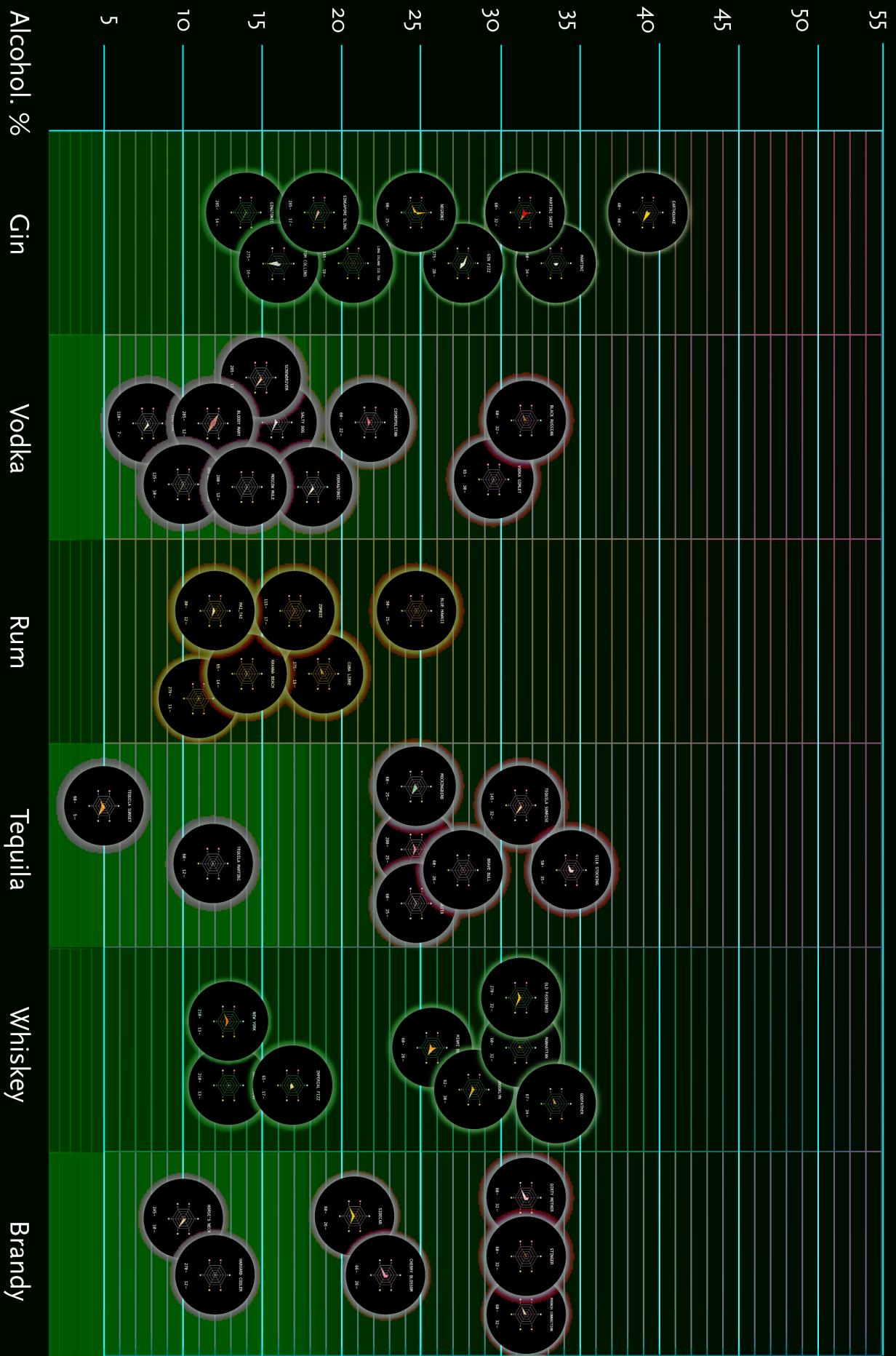
50 ml 35 alc

SINGAPORE SLING



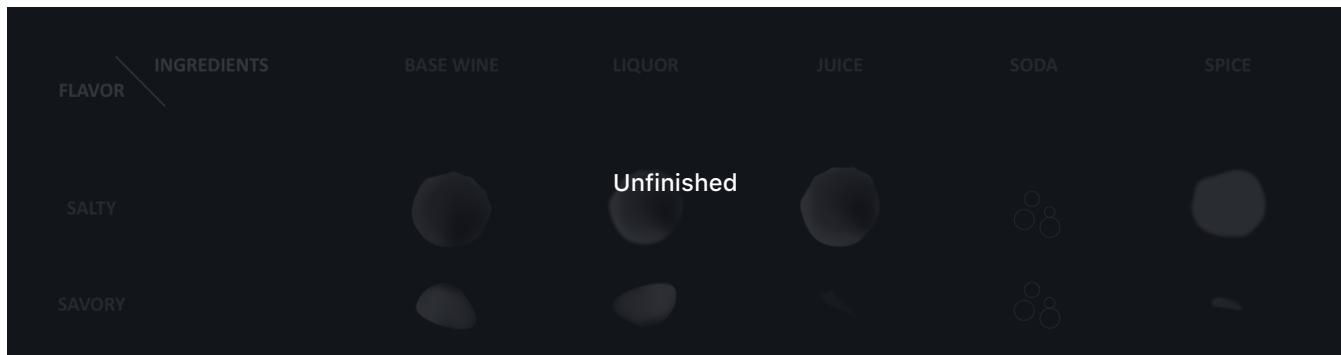
285 ml 17 alc

THE FLAVOR SPECTRUM

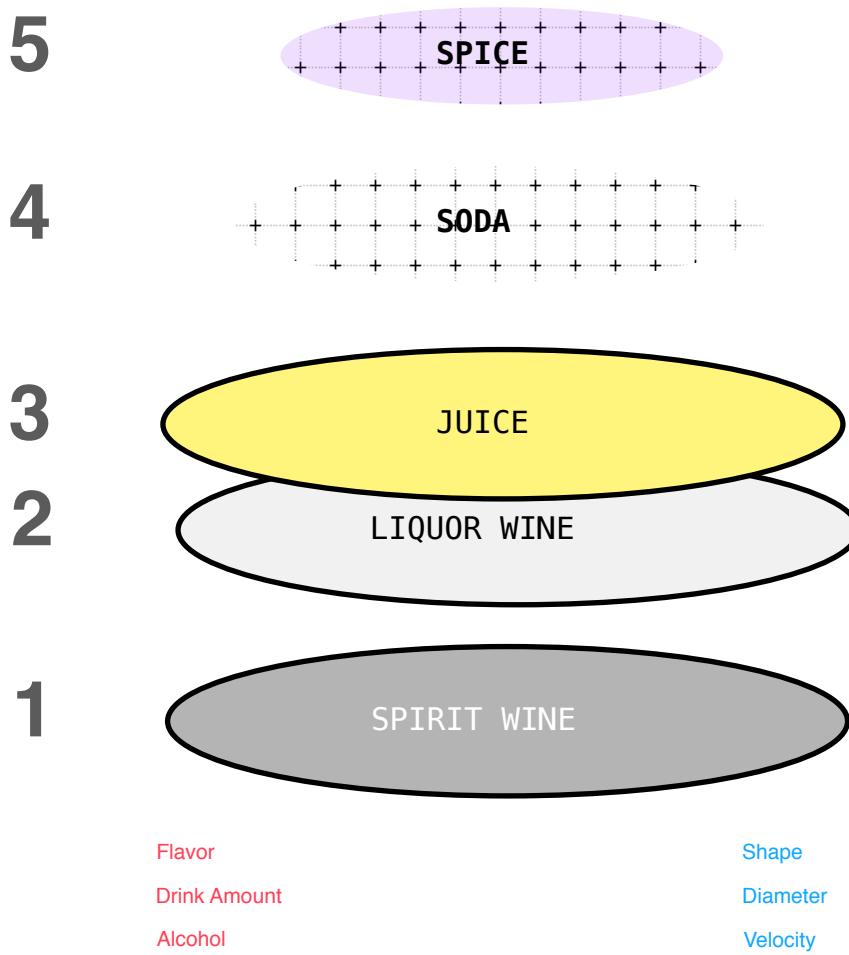


The Data Story of Cocktail Wheel

Developing Visualization



So how do we exactly combine ingredients and flavour altogether is the major issue in this stage. Our design can be separated into two sections, the layer of visuals stands for the ingredients, there are all five layers of graphs, from spirit wine to spice, and the other design aspect is the shape of graphics, each kind of shape represents a specific flavour. Since our dataset determines that each cocktails has a series of ingredients, which form the receipt of it. The dimensions of flavours, on the other hand, varies from one to another at the same time.



Before the coding process started, we made an estimation that if everything works fine as we designed, the software we made will generate a unique dynamic visual corelating each one of cocktail in our dataset.

They will show a diversity of Shapes, which determined by flavours.

Layers, which determined by ingredients.

Radius, which determined by the amount of drinks.

Velocity, which determined by the degree of alcohol.

Gradient Colors, which determined by the color extractions we made in the previous stage.

The Data Story of Cocktail Wheel

Developing Visualization

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

The Data Story of Cocktail Wheel

Developing Visualization

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