

Use Case Name: Beer Advisor

Point of Contact: Lucas Standaert (standl@rpi.edu), Marcelo de Castro (decasm3@rpi.edu), Anna Yaroslaski (yarosa2@rpi.edu), Sam Stouffer (stoufs2@rpi.edu)

Beer Advisor

Summary

Beer is said to be one of the oldest alcoholic drinks created by humans. In fact, we have been creating different types of beers for millennia and, hence, due to the wide variety of beers with different flavor profiles and styles, choosing a beer is not a simple matter. There are also many people who are picky about what they drink, as they may not like certain styles of beer. There can also be the concerns of alcohol content and brewery location, as people want to support their local beer scene. In this context, the Beer Advisor helps people in the difficult task which is finding the perfect beer. The application combines information from different databases in order to find the perfect beer match considering the user's requests.

Goal

The goal of this application is to provide users with beer recommendations by matching their preferences with attributes of commercially available beers.

Requirements

- The system must be able to differ beers between styles, alcohol content, and other key factors.
- It will return a listing of beers with all the information the system can provide on them.
- It will have an extensive catalog of beers obtained from trustworthy data sources.

Scope

The application will only recommend beers and will not include other alcohols such as spirits or wines.

The beer selection and beer attributes used for recommendation will be limited to those provided by the application's data sources: beer.db and opendatasoft.

The application will recommend beers based on location, alcohol content, style and season and will not include any additional attributes such as "mouthfeel" or IBU level.

The application does not guarantee recommendations for all combinations. For example, finding an IPA with a low alcohol content may not be feasible.

Stakeholders

- Customers/ Beer drinker.
- Beer distributors.
- Beer stores.
- Breweries.
- Bars.
- Beer Databases.

Actors

Primary: Customer/Beer drinker – This is the person that will benefit directly from the ontology. For them, the ontology will assist in finding beer that they desire in a more efficient manner.

Primary: Beer Store – Owners of beer stores could use the ontology as a way to get more information of beers in their area they may not know about, to further widen their selection.

Primary: Bars – Bars have a similar interaction to that of beer stores, using the ontology to expand their selection.

Secondary: OpenBeerDB

Secondary: beer.db

Secondary: opendatasoft

Secondary: brewery – While breweries won't be accessing the ontology for purchases, the beers they make will affect what beers are stored inside the ontology.

Secondary: beer distributors – This is similar to breweries, as the beers that are shipped by distributors will also affect the ontologies database.

Triggers

The trigger to this application is the user launching the Beer Advisor application and performing a search for a beer with a determined set of characteristics. Examples of triggers are listed below.

- A customer is unsure of what beers are available in their local area, or what local breweries there are.
- A customer wants to find a new style of beer to try.
- A customer wants to find a new brand of a style they already drink.
- A bar is looking for new brands to expand their current selection.
- A store is looking for new brands to expand their current selection.

Pre-conditions

It is assumed that the user specifies the type of beer and for that the user will need to provide the characteristics he is looking for, such as beer type, alcohol content, season and location.

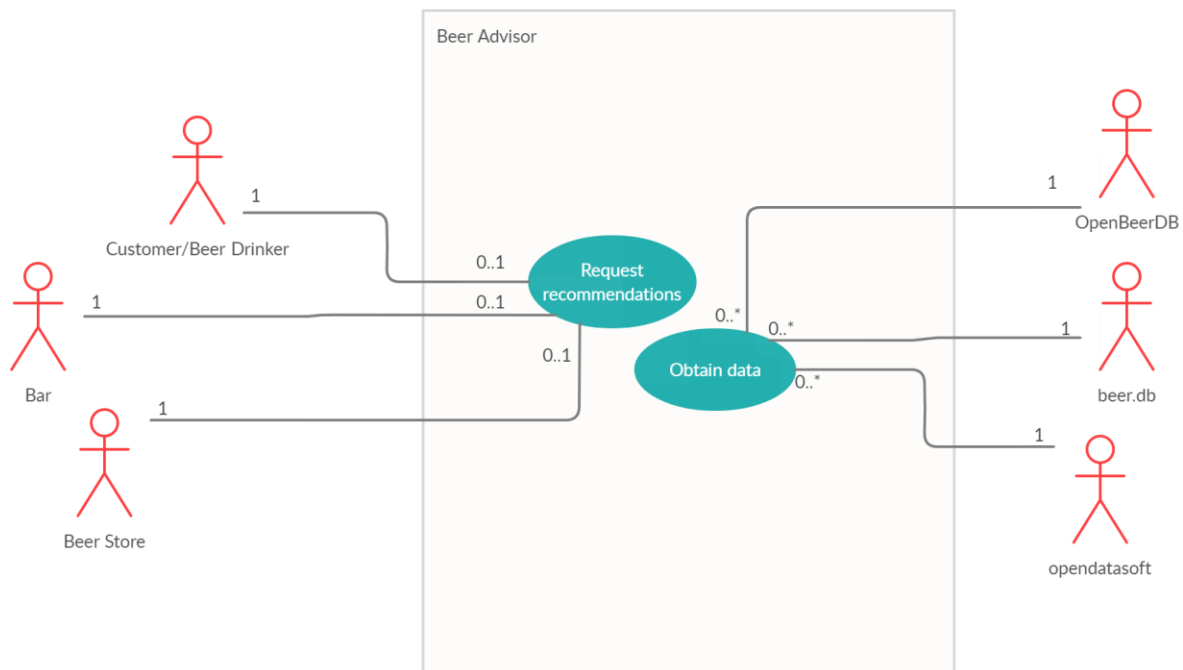
The application should be web-based and, therefore, accessible from any device.

It is also assumed that the application can perform access to beer and breweries databases.

Post-conditions

The ontology will contain a plethora of different beers differentiated by type, alcohol content, location, and more. Users will be able to query the ontology for what they desire but a primary actor will have no permanent effect on the system. Therefore, there is no need to save information after the user is satisfied with the recommendation provided by the tool.

Use Case Diagram



This diagram is meant to be an overview of how the system for beer advisor works. Inside of our subject, essence of beer advisor, are the two main operations the system will have. The first operation is the ability to request recommendations. Each user will submit one recommendation

based upon our guidelines, which will provide them with a list of beers. These recommendations will be completed by one of these actors, who are our primary actors.

The second action that can be completed is on the back end, obtaining data from our different databases. In this scenario, we will obtain 0 or many different beers from these databases, while for the purpose of this ontology we will only be accessing the data from each database once. This diagram shows a rough draft of what we believe our ontology will look like.

Usage Scenarios

Scenario 1

A man has just moved to Troy and is looking for a new beer. However he's a little picky on what he likes. He looks for beers locally, as he wants to support local microbrews, and mainly drinks american lagers and pilsners. He loads up Beer Advisor to help him look for a new beer to drink. He looks through the types and selects american lagers first. He then selects pilsners as his second choice. He then moves onto the location, and selects Troy, New York. After selecting both of his options he enters his search and is provided a list of different lagers and pilsners from troy breweries. Now he knows what options he has and can purchase the beer he wants.

Scenario 2

A bar in Pittsburgh is looking to expand it's selection of beers, and wants to know what local brands there are. However he wants a selection of winter beers, which are usually darker beers, and wants to cap the alcohol content at 7%. He opens Beer Advisor and begins the selection process. He first selects his region, Northeast, and then selects the season he is looking for. After this, he selects beers that have an alcohol content from 5% to 6% and 6% to 7%. After this, the Beer Advisor provides him the names and locations of the beers, as well as the names of the breweries so he can contact them for direct distribution.

Flow of Events

Basic Flow of Events

1. User loads up Beer Advisor.
2. User selects a region.
3. User inputs a city.
4. User inputs a season.
5. User inputs a type.
6. System takes these criteria and searches for appropriate items.
7. First the system eliminates any regions that don't match.
8. Then the system eliminates cities that don't match.
9. Next it eliminates seasons that don't match.

10. Finally it narrows down the search to the specific type of beer.
11. System returns items in a list with all information available.

Alternate flow

1. User loads up Beer Advisor
2. User selects a region
3. User inputs a type
4. User inputs an alcohol content
5. The specific combination is impossible, so the beer cannot be found
6. The system returns an empty list saying that no beers exists
7. The system then prompts the user for a new query
8. The user exits the system

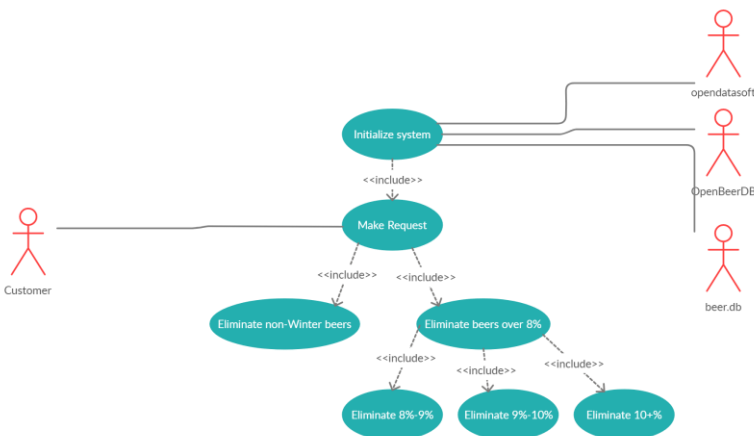
Preliminary Competency Questions

What is a winter beer that is under 8% alcohol content?

Answer: Winter beers are a darker beer with fuller flavor and malted styles. They are also more full bodied. Some classic examples include stouts, Russian imperial stouts, porters, and ales. Of these, ales, stouts, and porters will be under 8% on average. However, Russian imperial stouts average at around 9%, so the list will mainly include ales, stouts, and porters, and a few Russian imperial stouts.

In order to complete this first question the ontology should be able to obtain a list of beers, separate them by seasons, and then limit the alcohol content of said beer. The main focus is also upon the region, as many beers may not be available to the customer given where they are from.

Diagram



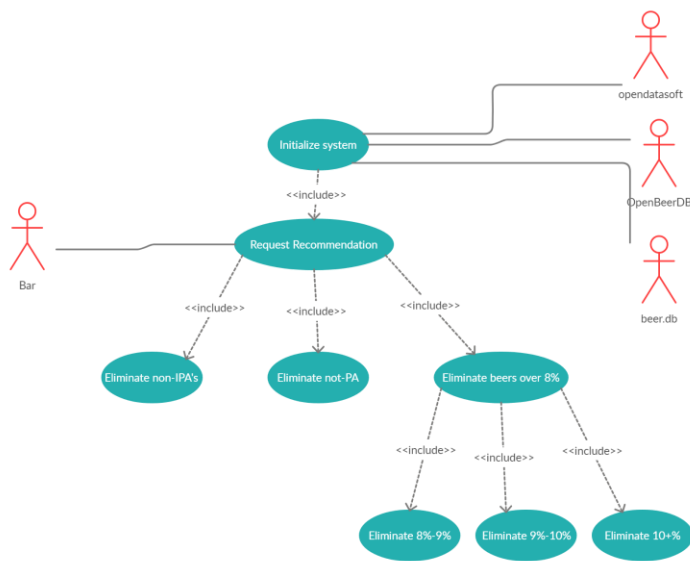
This diagram showcases how the system will process this request. Upon initializing the system, it will access its database to obtain any necessary or new information. After this, the user will make a request, in this scenario eliminating beers non-winter beers and beers over 8 percent. In order to store the alcohol content, beers will be put into bracketed groups. These brackets will go in one percent increments from 5 to 10 percent. Anything above 10 will be grouped together and anything below five will be grouped together.

What is a brewery in Pennsylvania that makes IPA's under 8%?

Answer: A personal favorite brewery of mine is Helltown Brewing, located in Mt Pleasant, PA. The company makes a whole line of IPA's that meet this category, including the Buffy, Salem, and Rapture IPA's.

For many people, supporting their local breweries is important. When you move to a new area you may not have any idea what breweries are local to you and what kinds of beer they make. This question is aimed at targeting that part of the ontology. By combining information from different databases, the ontology should be able to filter out the location and region first, then remove the incorrect types of beer, reporting back the list.

Diagram



This diagram illustrates how the system will interact with the user to find their result. Similar to the diagram above, the system first initializes and obtains the necessary data. From here, the user will input their request and the system will obtain the proper results. In this case the system will first eliminate any beer that is not an IPA, and then eliminate any beer that is not from Pennsylvania. It will then complete a similar process to eliminate any beers over 8%, providing the bar owner with the proper result.

Resources

Data	Type	Characteristics	Description	Owner	Source
OpenBeerDB	Open Database		Open database containing information on available beer		https://openbeerdb.com/
beer.db	Web Service	Open public domain beer database	Beer based database that is open to public domain	beer.db	https://openbeer.github.io/
Open beer database	Web API		A database containing beers by style, category, country, brewer, and address	opendatasoft	https://data.opendatasoft.com/explore/dataset/open-beer-database%40public-us/table/

All Diagrams created at creately.com.