On your webpage, you must provide a **detailed defense** of your choice of **visual encodings** and **control features**. For your visual layout, describe **why** it is an optimal choice for **expressing** your data **effectively** (~ 1 paragraph). Then, for each controlling element, detail how it enables your user to ask different questions (~1 paragraph). You should include specific examples of insights you discovered through the use of these tools.

The data presented in this tool describes U.S craft beers, their styles, their alcoholic by volume rate (ABV), international bitterness unit rate (IBU) and their brewery of origin. Given that each beer has information on itself and on the brewery that produces it, I explored layouts that would allow me to provide information, on the beer itself and on its origin, while preventing information overload and cluttering.

My first candidates included a bar chart and a pie chart binned by U.S regions and a U.S map with geolocated bubbles for each beer that matched a selection criteria. However, these options were soon replaced by a zoomable circle packing layout. I proceeded with this choice because it allowed me to present several layers of information in the same graph: something not afforded by more traditional layouts such as the bar and pie charts. Additionally, this layout did not force me to reduce my dataset to a few summarizing operations to fit a summarizing chart, as was again the case with the pie and bar chart. Furthermore, unlike the U.S Bubble map layout, the circle packing layout did not depend on geographical location to provide a space for each observation, which prevents cluttering and collision. Finally, the circle packing layout allowed me to organize beers by their region of origin, without the need for a map.

My data tool counts with 4 filters: Zooming, Style, ABV and IBU. It is important to note that my tool uses a combination of Style, ABV and IBU to present results for each region. Therefore, to obtain better results, users must select an option for said filters. Functionality for each filter is explained below.

* Zooming: users are first presented with a grouping of beers by each region, represented by a larger circle populated by smaller circles of the same color. Upon clicking on any grouping, In the user is presented with each bubble containing the beer’s name, its brewery of origin, its ABV and IBU.
* Style Filter: users can choose from a list of beer styles such as Pale Ale, Brown Ale, Pilsner, etc. With this filter, they can explore which beer style is most popular in each U.S region.
* Alcohol by Volume Rate Filter: users can filter all U.S beers by their Alcohol by Volume rate, represented by 4 categories: Not Detectable, Mild, Noticeable and Harsh. It is important to note that, despite choosing a particular ABV, bubble size and proportion will always be given by ABV. This choice was made due to the fact that ABV is a more objective measure than IBU.
* International Bitterness Units Rate Filter: users can filter all U.S beers by their International Bitterness Units Rate. It is important to note that IBU is less objective than ABV given than bitterness is relative for each person and their particular taste. So, since bitterness is most closely related to the amount of hops present in a beer, the user can choose “Not Hoppy”, “Moderately Hoppy”, “Very Hoppy” and “Extremely Hoppy” as levels of “bitterness.