For the first histogram that details the relationship between property type and rating, we decided to choose a color palette set against a white background that would make the colors pop. These colors are not only eye-catching but will also allow the user to understand each bar as distinct from each other. The channels in this graph are the different lengths or height of the bars, and the tasks are the comparison between the different property types.

For the second boxplot detailing property type and Airbnb price we chose the color palette for the same reason as the histogram, we wanted the colors to pop and show that each property type is distinct from each other. The primary task of a box plot is to show the distribution of the data, including the median, quartiles, and potential outliers. The median represents the center of the data, while the quartiles give insight into the spread of the data. Outliers, if present, are also indicated to highlight any extreme values. The channels include the length of the boxplot which depicts the IQR, the whiskers depicting the range, and the outliers as individual points.

For the interactive map which displays an overview of the Boston Airbnb data,the primary task is to visualize the density of Airbnb properties in different areas, which can be achieved through clustering. This involves grouping nearby properties into clusters based on their geographical proximity. The density of these clusters can then be represented visually, with denser clusters appearing larger or having a darker color to stand out. Another task is to distinguish between different property types, such as apartments, houses, or condos. Each property type can be assigned a distinct color to aid in differentiation. This helps users quickly identify the types of properties available in a given area. Channels are used to encode these tasks visually. For example, the size and color of the clusters can represent the density of Airbnb properties, with larger or more intensely colored clusters indicating higher density. Similarly, the color of individual points within the clusters can denote the property type, allowing users to easily discern between different types of properties. Interactivity adds another dimension to the map, allowing users to explore the data further. For instance, users could hover over clusters or individual points to view additional information, such as the number of properties in a cluster or specific details about a property.

For the interactive D3 barplot, the primary task here is to compare the number of accommodations across different property types. Each bar represents a specific property type, and its length corresponds to the number of accommodations available for that type. Channels are utilized to encode these tasks visually. For instance, the length of each bar represents the numerical value of accommodations, providing a clear quantitative comparison between property types. When a user clicks on a bar, it can be programmed to change color, such as turning red, to highlight the selected property type. This dynamic response helps draw attention to the selected data point and facilitates visual analysis.

For the boxplot depicting price vs cancellation policy, much of the design choices remain the same as in the first boxplot described above but no colors were chosen to fill each boxplot as the primary point of focus was the variability in price vs the varying cancellation policies.

For the interactive scatterplot showing the relationship between rating, price, and number of accommodates, The primary task is to explore the relationship between accommodation capacity and price, while also considering the quality of the Airbnb as indicated by its rating. Each point in the scatter plot represents an individual Airbnb listing, with its position indicating its capacity and price, and its color reflecting its rating. Channels are utilized to encode these tasks visually. The x-axis represents accommodation capacity, providing a quantitative measure of how many guests each Airbnb can accommodate. The y-axis represents price, with higher positions indicating higher prices. Color coding is used to represent the rating of each Airbnb, with a color scale acting as a legend to provide context for the ratings. When a user clicks on a point, they can receive additional information about that specific Airbnb, including its price, accommodation capacity, and rating score