COMP47970 Visual Exploration Tool Design Document

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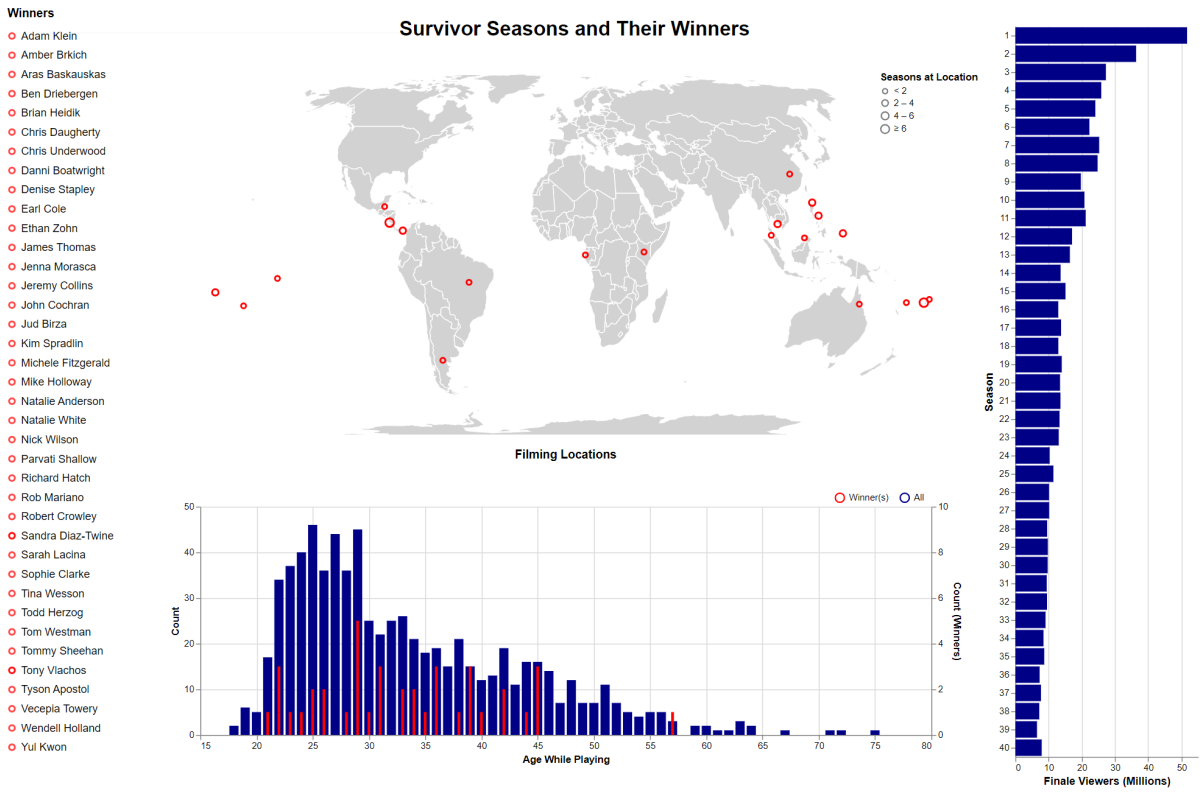
Title:
Survivor Seasons and Their Winners

Screenshot:



Dataset Overview

The Survivor TV Show dataset contains information about the first forty seasons of the American reality television series *Survivor*, where contestants (“castaways”) live in a remote location, compete in challenges, form alliances, and eventually vote each other out until only one winner remains. The data repository contains datasets for several aspects of the series, including castaways, challenges, viewers, and jury votes. This project made use of the summary and castaways sets, both of which have been modified. The summary set contains features such as season, winner, filming location, and viewership, and a latitude and longitude feature were added to enable interacting with precise map locations. The castaways set contains every player to ever appear on the show, and data such as their age, name, hometown, and elimination order. A nominal feature classifying each player as a winner or not was added to make filtering this data easier. Both of the modified datasets can be found here.

Design Considerations

Overall Goal: My overall goal with this tool was to enable explorations of the first forty seasons of *Survivor* with respect to winners, filming locations, and finale viewership. Users can explore the ages of specific winners with respect to the *Survivor* player population, visualise the popularity of filming locations, and visualise other trends between these data.

Filming Locations Map: This is an equalEarth projection map that displays a red circle for every filming location used by the show. I chose the equalEarth projection because it is similar to the popular Robinson projection and thus familiar to users but instead shows accurate country areas. The circles are intentionally red to stand out from the grey of the map, and also to contrast effectively with the other blue parts of the visualisation for colour blind inclusivity. I could have chosen solid points, shaded country areas, or even other symbols like an "x" to encode location, but I wanted a marker that would show the precise locations of often remote destinations without obscuring them. By looking at the centre of the circle, however, the user can tell precisely what area to which the mark refers without risking the obstruction of an entire island. Each mark also encodes how many times a season has been filmed in that location with its size. I could have encoded this statistic using colour, but found size to be more distinct. I chose the size domains to subtly reflect differences in filming repetitions without referring to too large of an area.

Winner List: The winner list is a bar chart with the bars removed, layered on top of a second chart that uses layered points and text to display all forty names. Because some users may not know much about past winners of the show, the list is sorted alphabetically to make it easy to search for one particular winner who they might have heard about without knowing anything about them. Each winner is marked by a simple red circle, chosen to stay consistent with the marks on the map in colour and shape while also standing out when selected (more in the interaction section below). While there are several ways to display winner information, and some could even have encoded useful data like Sex or Age, I chose a simple textual list over another chart because of the simplicity. Another bar chart with winners on the axis may have been informative, but I felt it would clutter the visualisation without adding a marginal advantage.

Stats Bar Chart: By default, this bar chart has two layers: a blue chart showing the distribution of stats across all players in all seasons, and a red chart showing just the distribution of winners' stats. Users can select which stat they would like to view from the radio buttons at the bottom. The winners' stats chart is on a different scale, to make it visible amongst the significantly larger population of all players. I could have used histograms for these charts, which would have slightly decluttered things, but decided instead on bar charts to show a more precise distribution. This was especially important for the forty winners, where the distribution would be somewhat obfuscated by histogram binning. Histograms also would not make as much sense for stats like immunity idols won, since there are so few unique values. When a specific winner, season, or location is selected (more in the interaction section), the winners' bar chart is replaced by a set of ticks for the selected winners. These

ticks are chosen over other marks like bars or points so that they stand out easily against the solid bars without obscuring them.

Viewers Bar Chart: This is a simple vertical bar chart that displays the number of viewers of each season in millions. Like the stats bar chart, the field for this chart can be toggled with the input radio buttons at the bottom of the visualisation. The chart is sorted by season so that the trend is clear. I originally attempted to use stacked bar charts including the viewers at the premier and those at the finale, and also attempted using a box-and-whisker plot for both of these values and several others for each season, but decided on the simple bar chart because it conveyed the same trend without all of the added information. The stacked bar chart was similarly neat, but misleadingly portrayed premiere and finale viewers as parts of a sum when in reality there was probably much overlap between the two.

Interaction Consideration: The map, both bar charts, and the viewers list are all linked to make the entire visualisation interactive. Knowing that *Survivor* has a somewhat involved set of rules and a long history, I wanted a user with any level of prior knowledge to be able to learn something from the visualisation. To that end, the links between the different elements of the visualisation implicitly reveal information. For example, a user can click on any season, winner, or location, and the visualisation will emphasise that selection and the remaining associated data. This communicates how each season is filmed in a different location and has a single winner. One also does not have to know anything about *Survivor* to poke around at the different elements of the chart and see how they interact. In addition, I included several tooltips to provide additional information without cluttering the chart. Selecting a location where multiple seasons were filmed also displays all winners and seasons for that area. Selections are emphasised by changing the colour and shape of the encodings, which is essential to make highlighted items stand out against, e.g., a whole list of users or an entire world map. I chose a colour change from the default colour to grey to emphasise contrast, and also included the slight size change to induce motion that would attract the eye to the highlighted area. While I experimented with changing the mark shapes, for example turning the map points into areas for more obvious contrast, I found that keeping them the same helped with consistency and made it clear that the marks still referred to the same information.