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Music of the Ages

For the last ten years, record collectors in Usenet have been working on a huge undertaking to preserve quality recordings of every popular song since the 1890s. In the process of doing this, they have created a spreadsheet of 37,000 songs with data points on each including each song's duration, beats-per-minute, songwriters, genre, label, and chart position. This is known as the Whitburn project. Our project seeks to use dynamic visualization in order to discover trends in this data.

The visualization maps each song with its popularity, peak top-chart position, genre, and date peaked. Each song is a point mapped onto a two dimensional plane whose x-coordinate corresponds to the song's date peaked and whose y-coordinate corresponds to the song's popularity as measured according to the study's "Lancefer" scoring system. The radius of the point corresponds to the song's highest position on the top charts with songs that reached the highest rankings having the largest radii. Each of these scales is a linear scale with date at which the song peaked is mapped using a linear time scale.

Despite the dataset having 112 columns of data, we chose to filter our dataset down to the properties described previously. These fields were the most effective in creating an intuitive visualization and for bringing out visual trends. We also chose to limit the size of the data shown. Firstly, we limited our visualization to songs peaked in 1990 or later. Secondly, we only chose to filter down the number of songs shown by a factor of 10 to prevent the visualization from getting too cluttered.

The visualization provides three dynamic functionalities: search, on-click song selection, and live-updating date filtering through the slider. Searching for track, artist, or album will cause all other song nodes to fade out, allowing the user to observe just the song nodes he or she is interested in. By moving your mouse over a song node you will notice the node enlarge, indicating that you are about to select it. By then clicking on the node, all songs nodes by other artists will fade out and a movable information box will appear. The user is also able to filter by date and rescale the visual through the use of the slider below the graph. For example, if I was only interested in songs that peaked in 2005, I would move the range on the slider, and the graph would actively rescale to create the effect of "zooming in" on only the nodes of interest.

Some interesting trends emerge from our visualization. Despite missing the genre data from some of the more recent songs, we are able to see shifts in popular genres over time. For example, rock seemed very dominant in the late 90's and country seems to begin to appear just after 1998 while rap begins to take over rock in the early 2000's. It was interesting to note the lack of pop and club music. However, the popularity of these genres may have been lost in the missing genre data from about 2008 onward. We are also able to see a strong correlation between popularity score and peak chart position. However, there are some exceptions due to the fact that popularity takes into account the amount of time a song is in the top 100, reducing emphasis on "one-week hits." For example, "How's it Going to Be" by Third Eye Blind just barely broke top 10 on the

charts, but received a high popularity score due to its longevity while “Believe” by Fantasia hit number one, but was very short-lived, resulting in a low popularity score.