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CSE 591: Data Visualization (Fall 2016)
Assignment 2: Interactive Visualization Story

In a typical tennis match, aces and serve speed play an important role. What a player tries to achieve with an ace is to make sure the ball gets to its destination before the opponent player does. Serve speed comes from getting the racket to travel faster as it makes impact with the ball. So along with an accurate placement of the ball, there should be power in a player's serve for the opponent to miss the shot.

My visualization shows the ace score and the fast serve speed of the players. My aim was to show that, with an increase in the speed of the serve of a player, his ace score also increases because of the opponent's inability to return the shot. While exploring the dataset, I saw such a strong trend between the ace score and the fast serve speed among the other speeds given. Because of a large dataset consisting of more than 50 players, I selected the players who won the match for more than 6 years. For each of these players, an average of ace score for each year is calculated. For instance if a player played three matches in 2013 (and won), an average of the ace score of these three matches is calculated. Similarly, the average of Fast Serve Speed of each of these players is calculated. On the X-axis is the ace score of the player and on the Y-axis is the fast-serve speed. Let us see an example of player: Andy Roddick. In 2003, his average serve speed was 225 KPH and he score 17 aces. In 2004, when his serve speed increased to 234 KPH, his ace score also increased to 21. In 2009, when his serve speed was 228 KPH, his ace score was 13 and so on.

I also calculated the average ace score (i.e. 10) and the average fast serve speed (i.e. 209) of all the matches of all the players. I used this data to plot the gray linear line indicating the growing trend. My visualization also bolsters the well knows fact stated in article[1], that the players Andy Roddick and John Isner have a very strong fast serve rate which plays an important role towards their success. This can be seen clearly where the dots of these players are above the average line. This trend remains true for all the other players shown in the visualization.

My visualization uses scatter plot chart, which serves the purpose of plotting of the aces and fast serve of 10 players. The dots in the scatter plot indicate the winning match and the dots of same color indicate a player. You see more than one dot for a player to show the plot for matches in various years. On hovering over the dot, all his matches are highlighted and others are lightened, making it easy to read the data of one player. You also see the player's name to appear on the left corner, near Y-axis. The tooltip indicates the year of the match, the ace score and the fast serve speed.

References:
[1] http://www.popularmechanics.com/adventure/sports/a2072/4221210/