CSE494/591 Data Visualization – 2015 Spring
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Assignment #2: Interactive Visualization Exercise

Data Analysis:

The story concentrates on the winning index of the players and the countries. This factor shows how the countries and players have been progressing from 2004 to 2014. We are able to identify the rise and fall of players through this evident win deciding factor.

The Winning Index is a factor with which we can identify how much probable that a player may win. We have considered this factor based on country as well, ie, we will check how much probable a country can dominate over other countries. This is derived from Pythogorean Wins [1] formula which is based on Pythagorean projection. The formula is dependent upon the number of points that a player has won against the opponent. This is calculated from the results set from the given dataset.

Winning Index (WI) = SPW * Sum(PVA)/TSP *NF*DF

SPW = Set Points Won

PVA = Performance Variable Aggregate

TSP = Total Set points

NF = Normalizing Factor, a constant of value 0.1

DF = Difficulty Level Factor based on the round

Design Rationale: The design elements are selected based on the connection of each element to the tennis and Australian Open tournament. A drag timeline graph is chosen to represent the countries winning index. A chord diagram is considered to represent the players winning index. The chord diagram can easily identify who has played against whom. That is why it has been selected to plot the winning index of players.

Color Rationale: For the chord diagram, as we need to show who has higher and who has lesser winning index, we have chosen sequential color in the order. However in the drag timeline graph, the colors are picked based on the country and the corresponding winning index value.

References:
[1] http://en.wikipedia.org/wiki/Sports_rating_system#Pythagorean
[2] http://romsson.github.io/dragit/
[3] https://github.com/mbostock/d3/wiki/Gallery
[4] https://github.com/mbostock/d3/wiki/Chord-Layout