

# **CSE 578 Data Visualization**

## **Assignment - 2**

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### **Data Analysis**

- The data provided is of 10 years australian open data, out of which I have tried to describe a story by using the countries column.
- I realized that many times people tend to take into consideration the country into the game, So here I have tried to visualize the impact of each country on the game.
- This required a bit of data wrangling where I analysed the data using python and separated the countries from the other columns.
- Then I calculated the winning percentage of each country and used that data into my visualization to show how much each country wins over the decade of matches played.
- Further, I have used the data used scrape that how many times each country players have reached in the qualifying matches.
- All of these analysis have been done with the help of python and jupyter notebook which I have included in the submission zip.

### **Rationale of visualization design and story**

- For visualization purposes I have used the world map to show the impact of each country. The measure of impact is measured by the winning percentage of each country by matches won over the span of 10 years in Australian open.
- The colors I have used are of chromatic nature so that it helps to represent the continuous nature of the data and helps to show impact of each country by providing the darker shade to the country with high winning percentage and vice versa.

- As you can see in the figure below, this is the color scale I have used for the visualization and this shows a sense of similarity among all the countries and on the other hand also highlights the changes by using different intensities.



- As you can see that there are many countries whose winning percentages are great but they struggle to reach in the knock-out matches.
- From the visualization, we can also figure out that many of the countries in africa and some other asian countries hardly participate in australian open.

## D3 Visualization

- I have used D3 library for the visualization of the map. GeoMercator() is used for displaying the world map and further I have used color scale with the help of scale threshold and domain functions to give out different colors to different range of winning percentages.
- For introducing interactivity into the visualization, I have used d3.tip() with which I create a mouse hover functionality which shows the country and the winning percentage of that particular country and along with that I have also used the click functionality which shows the bar plot for the countries which have participated on clicking the particular country.
- You can also hide the bar chart by clicking anywhere outside the country.