**TV Advertising Recommendation Tool:**

Using Nielsen quarter hour TV viewership and TV ad spot price data for each broadcast day for previous years, do the following:

1. Estimate the viewership counts for a given network and for a specific target audience(eg: Adults 35-54, Men 18-25, women 65plus, etc) at broadcast week and standard dayparts accepted at traffic system(eg: M-F 6AM to 4PM, M-F 4PM to 10PM, Sat-Sun 4PM to 10PM, etc). This is useful because, TV advertising orders are placed at wide dayparts and at broadcast week level. For usual TV advertising spot booking order, one cannot be picky on spot timings for a given network, so the predictions at traffic system dayparts will give preview of the audience reach.

**How this is achieved??**

Say you want to air a TV ad on HGTV network, on 40th broadcast week of 2018, in Clayton,GA area, during Day-Part Mon-Friday 5AM – 4PM

**Step 1:** Get the viewers count from Nielsen file from previous year 2017 for 40th   
 Broadcast week for Clayton area

**Step 2:** In this file, filter only those records belonging to FOOD network and the only those records whose quarter hour values belonging to Mon-Friday 5AM to 4PM

**Step 3:** In each of the filtered records, get the viewers count(impressions) values

**Step 4:** Now sort this impression value from highest to lowest.

**Step 5:** from this sorted list of impressions, get the average value only middle 60 percentile of values. This is done to avoid extreme values in our estimate

**Step 6 :** Now repeat step 1 to 5 for 2016, 2015 and 2014

**Step 7:** For the average value of 2017 give weightage of 5, 2016 a 3, 2015 a 2 , 2014 a 1 and get the weighted average of these 4 values to get the final estimate of viewers count for FOOD network on 40th week of 2018 during MON- Friday 5AM to 4PM

**Step 8:** Follow same steps to estimate spot price

1. Suggest networks for reaching specific demographics on given broadcast week and for a given geographic zone.

**How this is achieved??**

**Step 1:** Let’s say a user wants to reach out to men aged 25 – 54 on 40th broadcast week of 2018 in Clayton, GA area and not sure of TV spots which are valuable for this criteria. Then based on this criterion narrow down the Nielsen viewership files for past 4 years which has this relevant data.

**Step2:** For M 25-54, 40th week and in Clayton, calculate viewers count and spot price for all possible combinations of networks(eg: CNN, FX, FOOD, etc) and dayparts(M-F 5A – 4P, Sa-Su 4P – 12M, etc) as described above.

**Step3:** Now for all these possible TV spots, sort based on Highest viewers count and Lowest prices. Spots whose combined rank of Highest viewers rank (1 has the highest count)and rank of Lowest spot price( 1 has the lowest price) is the lowest comes at the top of recommendation list

***Please note that the Nielsen viewership data is mocked by me and I have not used any real data.***