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INM433 Visual Analytics Individual coursework submission:  
Visual Analytics analysis of USA temperature trends from 2006 to 2016.

By Niall Larkin

# Motivation, data and research questions:

## Motivation for study and domain specific research questions for investigation:

The motivation for this study is to assess temperature trends in the USA with respect to the following analytic questions:

1. What are the seasonal temperature trends in the USA as a whole compared to state wise seasonal temperature trends.
2. Min and Max Temperature anomaly patterns within the US i.e. are there specific repeatable locations and time/times of year over which these anomalies occur?
3. Are there any specific trajectories over with which these anomalies take once they occur?

This analysis is pertinent from a business standpoint as different temperature trends and specifically anomaly analysis dictates can assist in forecasting how agriculture, tourism and a myriad of other economic activities can be impacted by such phenomenon.

## Data suitability:

The data set utilised for this

## Data Transformations

Three specific data cleaning operations need to be performed on this dataset prior to use:

1. Some of the twitter messages are >140 characters which does not make sense as all tweets have to be 140 characters or less[xx]
2. Some tweets are in Windings and need to be removed.
3. Blanks are present in the geotags section and need to be filled in as N/A.

Two specific research questions where assessed using this dataset:

1. Social Network Cluster analysis. This is done to assess who are the most significant users in the Pro Isis Twitter network.
2. Sentiment analysis: What are the main topics of these users and what is the sentiment towards them.