# HW #10 – HAWAII CLIMATE ANALYSIS

## Project Overview

This project required the analysis of various type of weather related data for the area of Hawaii over a maximum period of one year.

## Data and Project Description

Two CSV files served as the foundational raw data for this project. The first was a file containing basic information for ten "weather stations" in Hawaii including name, address, GPS location and elevation. The second CSV file contained almost 30,000 "weather data" readings taken at the same weather stations listed in the first file, over the period of January 2010 through August 2017. The specific data available from this file was limited to station, date, amount of precipitation and temperature.

The project itself involved four phases. The first phase of the project required repairing the "weather data" file to fill on missing/null data entries. The second phase of the project required setting up the database to allow the reading, importation, conversion and storage of the two CSV foundational source files. The third phase of the project involved analysis of the data and related queries to produce the end results. The final phase of the project produced a climate app that provides the ability to pull data from the database by user searches.

## Project Results

The analytical results of this project showed rainfall and temperature over selected period, activity levels of weather stations. Comparisons of data readings between the ten weather stations were also calculated. A database was set up and the data stored with an app making available that data for future access.

## Future Development

1. Geographical mapping of weather stations: This would be useful to show the physical relationships between the weather stations which sources the raw data. Once the GeoJson coordinates for the Hawaiian Islands was obtained, it would be a fairly simple matter to map them using Leaflet.
2. Geographical heat mapping of weather conditions: a (in this case literal) heat map of temperature readings (as well as precipitation, wind speed, etc.) could be overlaid on the geographical map of the stations mentioned above, with the user client given the ability to select weather by date using pull down menu's or similar. While the resulting representation would be a far cry from an doppler radar image, it could be of more flexible and dynamic use than hard coding of the selected dates of analysis as was actually implemented in this solution.

**Conclusion**

This weather analysis project was interesting in terms how it was accomplished (but there are many things I still don't really understand about the implementation). Even so, what it was capable of was not particularly interesting visually. Implementing the suggestions given above in Future Development would go a long way to addressing this shortcoming.