

# CSE535 Final project

Due date: 6/14/2018

Present your design and make a short demonstration on 6/14/2018

In this project, we would like to find unusually hot or unusually cold months in the Redding area of California.



The weather data is publically available from <ftp://ftp.ncdc.noaa.gov/pub/data/uscrn/products/daily01/>. For your convenience, I copied the weather data at <http://www3.cs.stonybrook.edu/~youngkwon/cse535/NCD.zip>

To find such months,

1. Download NCD.zip, the daily weather data of Redding, CA area from year 2003 to year 2017.
2. Compute the monthly average temperature of the area using the collected data. Let  $\mu(m)$  be the average temperature of month  $m$ . For example  $\mu(1)$  is the average temperature of January.
3. Compute the standard deviations of the temperature data of each month. Let  $\sigma(m)$  be the standard deviation of month  $m$ .

For your information,  $\sigma^2[x] = E[x^2] - E[x]^2$ .

4. Find the months whose average temperature is beyond the 95% confidence interval and produce the list of those months and years. That is, find the specific months whose average temperature is beyond (  $\mu(m) - 2*\sigma(m)$ ,  $\mu(m) + 2*\sigma(m)$  ) interval.