Exploring Weather Trends

Project Submission

Submission:

1. Data Extraction: Global temperature data, temperature data for Memphis (US) and temperature data for Bangalore (India) was extracted as CSV using the following SQL Query:

SELECT \*

FROM global\_data;

SELECT \*

FROM city\_list

WHERE country = 'United States' AND city = ‘Memphis’;

SELECT \*

FROM city\_data

Where country = ‘India’ AND city = ‘Memphis’;

1. Data Analysis: Excel was used for the Data Analysis
   1. The missing data were filled in using cubic spline interpolation http://www.akiti.ca/CubicSpline.html
   2. Moving Average for 30, 50, 75, 100 years was taken
   3. Correlation Coefficient was calculated using Excel formula [=correl(array1,array2)]
2. Key Considerations for Plotting:
   1. Identify the message
   2. Avoid chart junk
   3. Not to mislead the reader
   4. Use color effectively
   5. Smooth Graph: Moving Average of 100 years data was selected for visualization as it gave the smoother graph.
3. Observations:
   1. Global average temperature is much cooler than Memphis (US) which is cooler than temperature in Bangalore (India).
   2. Bangalore average temperature is about 17 degrees warmer than global average
   3. Memphis average temperature is about 7 degrees warmer than global average
   4. World is consistently getting hotter over the last hundred years
   5. Correlation coefficient between global temperature and Memphis is 0.6262
   6. Correlation coefficient between global temperature and Bangalore is 0.8659
   7. There is a strong positive correlation between global average and local average temperature.

(n.d.). Retrieved from http://www.akiti.ca/CubicSpline.html