

# Graphs

## Problem 8

Using the columns LandAverageTemperature, LandMaxTemperature and LandMinTemperature, generate a GNUPlot data file and use GNUPlot to make line plots that show all three temperatures on the same figure. Use the years for the x-axis (use only the years between 1850 and 2015) and the yearly averages for the y-axis. Use three different colours (or different line styles) for the three lines. Make sure that the line plotting LandAverageTemperature stands out from the other two (ex: make that line thicker). Make sure your graph has a title, axes labels and a legend that explicitly tells which line is which.

Plot (screenshot of the plot)

### GNU PLOT SCRIPT FOR QUESTION 8:

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| <b>Purpose:</b><br>The line plot graphs aim to provide a representation of the average land temperatures, land max temperatures, and land min temperatures between the years 1850 and 2015. The main goal is to generate a GNU plot where years are the x-axis and the yearly axis is the y-axis. Through analyzing the three different line plots, it should be evident the line plotting average temperatures stands out more presentably than others. | <b>Conflicts:</b><br>The major challenge with this task was revisiting the process of reading the string data from the GlobalTemperatures.csv file and transforming it into data for plotting in GNUplot. It became particularly challenging given that the code from tasks was left incomplete. Another hurdle was setting up multiple line plots that intersect with each other along, with determining the range to ensure the graph is visually pleasing and easily understandable. | <b>Outputs/Analysis:</b><br>After examining the three different line plots of min average, min average, and average temperature, it is apparent that there are alternating trends where the temperature ranges show an increase, between the years 1850 and 2015. The graphs clearly indicate a relationship between the minimum and maximum temperatures dating back to 1850 while the average temperature fluctuates, across the plot beginning in 1750. | <b>How we would approach next time:</b><br>Ultimately, when approaching this question the steps to consider would remain unchanged as it is a query, with options to explore. |
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