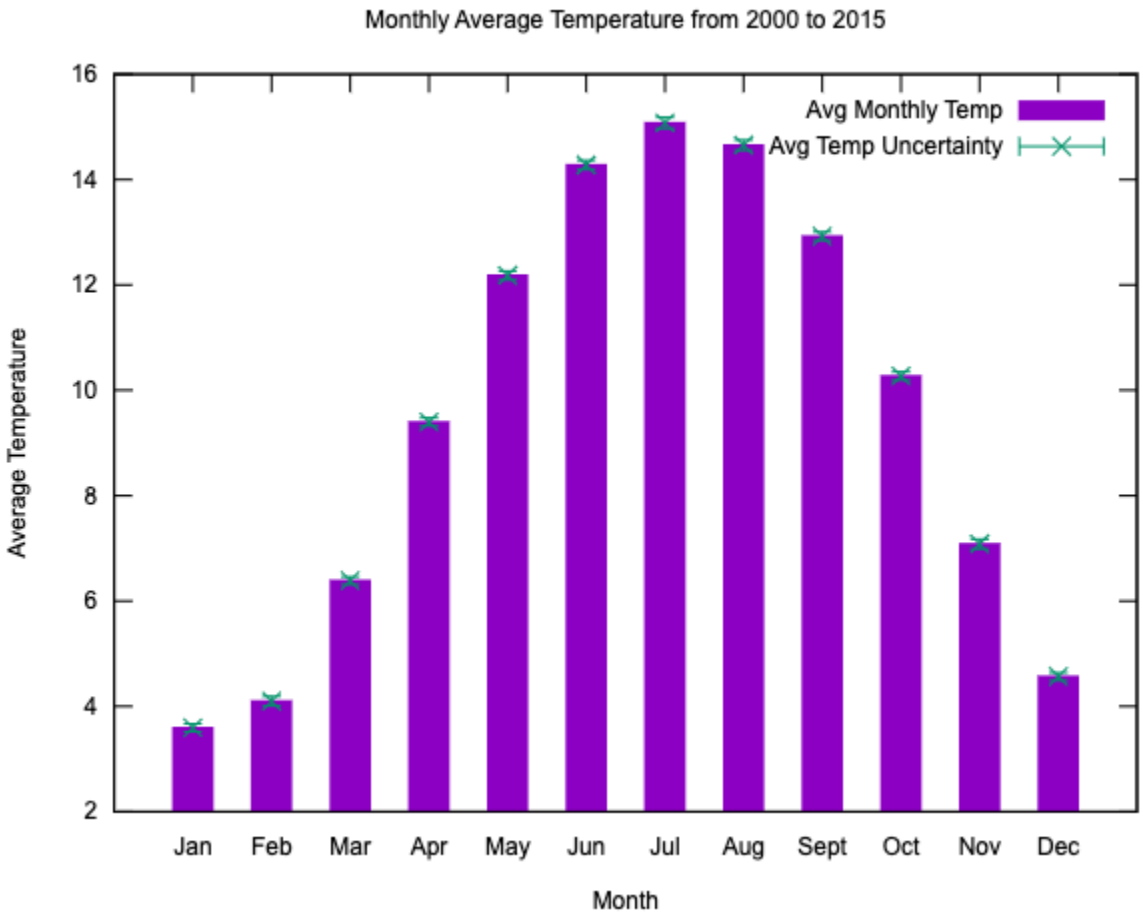
Graphs

Problem 10

For the years 2000 to 2015, generate a GNUPlot data file and use GNUPlot to make an error bar plot of the average land temperature by month. Use the uncertainty column for land temperatures to draw the error bars.

Plot **(screenshot of the plot)**



GNU PLOT SCRIPT FOR QUESTION 10:

```
set title 'Monthly Average Temperature from 2000 to 2015'
set xlabel 'Month'
set ylabel 'Average Temperature'
set xtics 1
set style data histogram
set style fill solid
set style histogram cluster gap 1
```

```
plot "Q10 data.txt" using 2:xtic(1) title "Avg Monthly Temp",\
     "Q10 data.txt" using 2:3 with errorbars title "Avg Temp Uncertainty"
```

Purpose:	**Conflicts:**	**Outputs/Analysis:**	**How we would approach next time:**
The linear plot graph set aims to display the land temperature for each month from 2000 to 2015. The main goal is to generate a GNU plot illustrating the error bars, for the temperature averages utilizing the uncertainty data in the land temperature columns to represent these errors.	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 error bar plots for the different average temperatures throughout the years 2000 to 2015 with determining the range to ensure the graph is visually pleasing and easily understandable.	After examining the error bar graphs from 2000, to 2015 it's clear that there are ups and downs in the land temperature over this 15 year period. The visual data indicates trends, including negative and fluctuating patterns. In terms the shape of this error bar plot resembles a compressed wave like sinusodial graph with its lowest point around the second year and its highest point around the 15th year, in 2015. This particular GNU error bar plot displays quite a bit of variability.	Ultimately, when approaching this question the steps to consider would remain unchanged as it is a query, with options to explore.