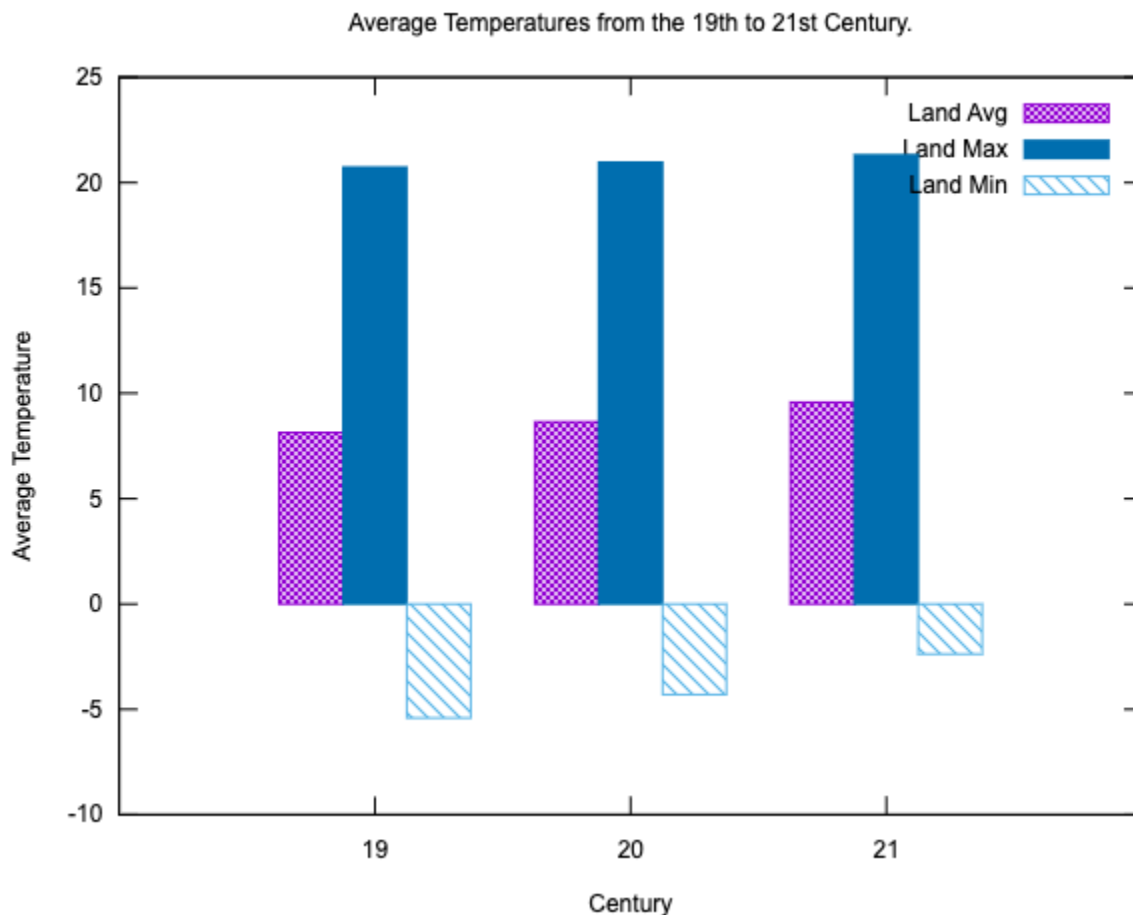# Graphs

Problem 9

Using the columns LandAverageTemperature, LandMaxTemperature and LandMinTemperature, generate a GNUPlot data file and use GNUPlot to make three bar plots (box or histogram plos) that show the average, low and high temperatures for each of the four centuries. Put all 3 century plots on the same figure displayed as subplots (multiplots). Each plot will show the boxes with different colours (one colour per century). Have a title to your figure and have the name of the century on each subplot. Have a legend on each subplot.

Plot **(screenshot of the plot)**

GNU PLOT SCRIPT FOR QUESTION 9:
set title 'Average Temperatures from the 19th to 21st Century.'
set xlabel 'Century'
set ylabel 'Average Temperature'
set style data histogram
set style fill pattern 2

```
set style histogram cluster gap 1
set key top right

plot 'TempsCent.txt' using 2:xtic(1) ls 1 title 'Land Avg', \
'TempsCent.txt' using 3 ls 6 title 'Land Max', \
'TempsCent.txt' using 4 ls 11 title 'Land Min'
```

Purpose:	Conflicts:	Outputs/Analysis:	How we would approach next time:
The set of three bar graphs intends to showcase the land temperatures, highest land temperatures and lowest land temperatures illustrating the minimum and maximum temperatures, across each of the four centuries. The primary objective is to create a GNU plot featuring all four century plots, in one figure displayed as subplots. Each plot will exhibit boxes with titles and legends on every subplot.	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 bar plots for the different average temperatures throughout the century with determining the range to ensure the graph is visually pleasing and easily understandable.	Upon reviewing the three bar charts displaying average maximum average and overall temperature variations reflecting the average, low and high temperatures it is evident that there are noticeable upward patterns showing a gradual rise in temperature over the course of four centuries. The visual representations clearly suggest a correlation, between the minimum and maximum temperatures indicating trends. This consistent pattern effectively illustrates the temperature variances throughout the centuries.	Ultimately, when approaching this question the steps to consider would remain unchanged as it is a query, with options to explore.