Syntax Problem #10

Objectives

1. Practice writing and running Python code
2. Use Cartopy to plot contours on a map
3. Using computer programming control statement techniques

Due by the end of class.

Problem

1. Write a Python program that reads in NCEP-NCAR Reanalysis geopotential heights from a remote server using xarray. Plot the 300-hPa heights for March 14, 1993 at 00 UTC with appropriate contour intervals (i.e., 120 m) using the Plate Carree and Lambert Conformal Projections for the Continental United States on two separate maps.

   For the Lambert Conformal Projection use the following settings to set up the projection as keyword arguments when you set up the projection:

   ```
   central_longitude=-100
   central_latitude=40
   ```

A starter script is available in `/archive/courses/met330/syntax10.py`

Notes:

- Call the Plate Carree map **500hPa_Heights_PC.png**
- Call the Lambert Conformal map **500hPa_Heights_LCC.png**
- Double check to make sure you have the correct output and conversion for temperature.
- Make sure documentation (e.g., comment block and comments throughout code) is present in your source code
- Make output informative so that anyone running your program understand what is being produced without seeing the assignment.
- Name the program **syntax10_<username>.py** and place a copy in `/archive/courses/met330/syntax_problems`