Programming Assignment 3

Write a program that prints a list of the names, catalog numbers and orbital inclinations of all active geosynchronous satellites with high (>= 45 degrees) orbital inclination.

On the website

https://celestrak.com/NORAD/elements/

there is a link labeled Active Geosynchronous . Use the URL for this link to read in a list of the active geosynchronous satellites.

Use a for loop to iterate through this list (3 lines at a time) and use an if statement to print a satellite name and inclination only for satellites with inclination >= 45 degrees.

In the pdf document **Program_Assign_2a.pdf** posted with assignment 2 and also re-posted with this assignment, on pages 4 and 5 is an example of a for loop. This loop prints the names of all the satellites. This loop only looks at list element **sat_list(i)**, which is the name of the satellite. You will also need to use the **sat_list** element that contains the TLE line 2 data to extract the catalog number and orbital inclination.

Upon seeing the output, you should see an obvious pattern. In the next assignment, we will extract all the satellites that match this pattern to see if all such satellites have high inclinations. Look up the class of satellites on the Internet to see what their purpose is.

Also, if you want to get more head start on future assignments, read about how to compute the **apogee** and **perigee** of satellites from the TLE data. You can search **"apogee perigee from TLE"**. One especially easy to use explanation is here:

http://www.satobs.org/seesat/Dec-2002/0197.html

If you try computing some apogee/perigee values and want to check them, an easy way to find data about a satellite is to search **"NORAD <catalog number>"**. Where **<catalog number>** is the catalog number of the satellite you are looking for.

This should not be a complicated program. I did not write my solution in as few lines as possible, but still it is only 10 lines long, so if your program is growing large it is over complicated.