Calculate Azimuth, Elevation and frequency Doppler shift using Python

Calculate azimuth, elevation, and frequency Doppler shift for NOAA 19 (id 33591 from https://db.satnogs.org) weather satellite and store data in txt file. Please calculate all the parameters for closest fly of the NOAA 19 over the Brno, Czechia. Satellite positioning data (TLE) about NOAA 19 could be downloaded from here: https://www.celestrak.com/NORAD/elements/noaa.txt

GPS position of Brno:
Latitude: 49° 11' 42.216'' N
Longitude: 16° 36' 24.6132'' E

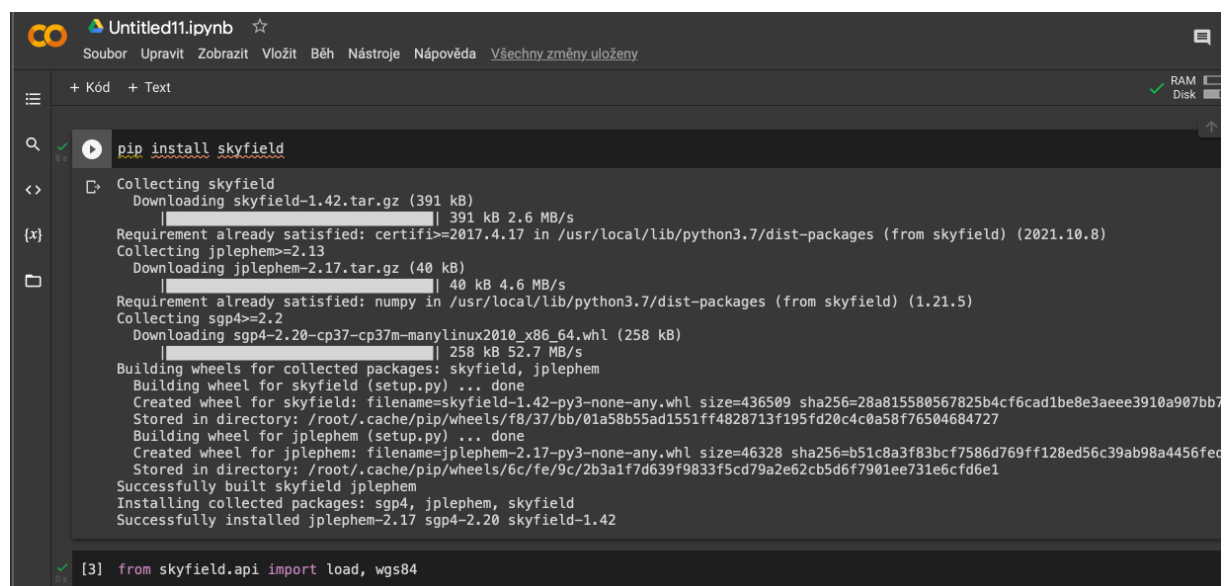The GPS coordinates could be converted to skyfield format using following link: https://www.pgc.umn.edu/apps/convert/

The task will be developed and delivered in Google Colab (https://colab.research.google.com). It's highly recommended to use Skyfield Python library (https://rhodesmill.org/skyfield/), which can predict AZ/EL/Doppler shift based on TLE data. The frequency Doppler shift will be calculated for 137,2 MHz. Stored data in txt file will have following format:

d/m/r h:m:s:ms AZ EL Frequency shift

Hint:
1. Each student could login to google colab using VUTlogin
2. Google Colab is not familiar with skyfield library, therefore it has to be installed: