Lab 1 - Geocaching
Due: 2/6/2023

This lab is to be completed in your project teams.
For this assignment you will need a GPS receiver that is capable of:
- displaying the current coordinates (Latitude, Longitude, Altitude)
- directing the user to a particular set of coordinates (not an address)
- showing the current satellites in use (usually a polar plot)

If you own an Android or iOS device, there are apps available. I have several receivers in our lab that can be used if needed.

Register

Go online and create an account on geocaching.com. This is required to access the cache coordinates.

Select a Cache

After registering, select a cache to search for. A good way to find them is to use geocaching's Google Maps portal at:
http://www.geocaching.com/map/beta/default.aspx
It may be a good idea to get the coordinates to several in case one is difficult to find.
What is the label (starts with GC), title, and coordinates for each cache?

Find the Cache

Using your GPS device, plug in the coordinates and find the cache. Usually there is a log to sign at the cache but that is not required. Complete the following activities at one cache:
1. Note the reported coordinates on the GPS device (not necessarily the same as the cache's coordinates). Provide the coordinates and plot on google earth or google maps image. Comment on the apparent accuracy of the plot.
2. Note the terrain such as any tall buildings, heavy foliage, open sky, etc.
3. Note the time and day of the finding.
4. Either sketch or photograph the current satellites used by the receiver.
5. Using your location and time, compare the satellite positions to your receivers satellite positions using https://www.gnssplanning.com or http://gnssmissionplanning.com.
6. Record the SV positions and DOP from the mission planning website for the time of your cache.

Alternatively

I don't really care if you go find a specific "cache." If you wish, you can simply pick a location you want to "record." Go to that location and follow the 6 items listed under "Find the Cache."