Challenge 2.

You (secretly) made a raw copy of an USB disk that is used by a secret agent of MI6. You now keep the copy of the disk in the virtual disk “FATdisk.vhd”. The USB drive is full of pictures taken with a smartphone and other useless material.

If you are lucky, the pictures store, in their metadata, the GPS position of where they were taken. Using this (and maybe the date and hour of when the pictures were taken) you can reconstruct the movements of the agent. As the pictures are too many (at least we pretend they are too many), you don’t inspect them by hand, but rather you write a script (in python for example) that scans the disk to look for the “.jpg” files and that extracts automatically the GPS position from the metadata of these files. In order to present this information to your boss, you produce a map with tags on the locations where the pictures were taken (for example by using google map).

As a proof that you did it you have to upload the tagged map on the moodle in response to this challenge. I may also ask you to show me the execution of the script on your PC.

Hints:

1. You can write your own python script or you can find a script on the web and use it. You however may need to prove me you understand the script and show, if possible, that you run it on your PC.
2. You may need to “mount” the disk on your PC. For example, if you have Windows, you can mount it by looking for “gestione disco”/”disk management” and, from the menu “azione”/”action” you select the option “collega file VHD”/”Attach VHD”.
3. You can use the PIL module of python to extract the tags from the images. For example, I have used the package Pillow-8.2.0. The package can be downloaded from https://pypi.org/
4. To produce the map you can upload in google map a kml file that contains the GPS coordinates extracted from the images : https://support.google.com/earth/answer/7365595?co=GENIE.Platform%3DDesktop&hl=it
5. As usual, if you are in trouble ask for help.