Lucas-Kanade Tracking HW

1. Create a git repository for the project
2. Implement template-matching in Python using SSD, NCC, SAD
3. Code Lucas-Kanade algorithm in Python using OpenCV
4. Implement pyramidal extension to Lucas-Kanade algorithm
5. Test on the 3 datasets from
   http://cvlab.hanyang.ac.kr/tracker_benchmark/datasets.html

Create a command-line tool in Python that accepts the ROI of the target (the portion of the image that should be tracked in the video) and the path to the dataset and performs tracking of the target over the image sequence from the dataset. Visualize the current image and highlight the target's location by a rectangle.

Find conditions where tracking is lost, explain why.

References:

https://docs.opencv.org/trunk/d4/dc6/tutorial_py_template_matching.html
https://www.ri.cmu.edu/pub_files/pub3/baker_simon_2004_1/baker_simon_2004_1.pdf
https://www.ripublication.com/ijaer16/ijaerv11n9_06.pdf

Slides:
https://drive.google.com/open?id=1GjGv00h9y5sWjoZ2HAF7khMk4uRVh0tM