The goal of the lab is to apply ICP (Iterative Closest Point) registration algorithm. The inputs are two point clouds and an initial transformation that roughly aligns the source point cloud to the target point cloud. The output is a refined transformation that tightly aligns the two point clouds

1- Get the camera intrinsics:
You can use the provided scripts for that, after connecting the device to your pc.

2- Capture two depth images:
Also, you can use the provided scripts for capturing the depth images.

3- Convert them to PCD.

After capturing the two depth frames and point clouds:
-Apply voxel downsampling to reduce the number of points

-Apply ICP registration using the Open3D library:
ICP aligns two point clouds by iteratively refining the transformation (rotation and translation) needed to align one point cloud with another.
threshold = 0.05 # Distance threshold

Compute and print the transformation matrix, and apply it to align the second point cloud with the first.