This lab for estimating the error of the 3D cameras.

The goal of the lab is to estimate the measurement error of the 3D cameras. I suggest you all to start following these steps as you must be familiarize with the previous labs (from connecting the devices till converting the depth images to PCD):

1- Get the camera intrinsics:
you can use the provided scripts for that after connecting the device with your pc.

2- Capture the Depth images:
also you can use the provided scripts for capturing the depth images, you will need to capture 3 images with a plane (front of the flat surface, at 4 meters distance, and then moved forward to 3m, 2m and 1m.).

3- convert one of them to PCD to be familiar with it.

4-Measuring the error to estimate the error:
we will need to use the part of the image that contains the plane (segmentation). Then create the point cloud of the portion of the depth image that contains the planar surface. You can then try to fit a plane function in space using those points, trying to best represent the "original" plane. Once you have the plane equation, you can calculate the distance between the points and the fitted plane, and plot some statistics about the error.
You can find the skeleton of the code in the Error_calcu_plane.py script,
where a basic structure and hints are given to complete the tasks in it.