Project 1:

Measure the angle formed by the two books from image1.jpg and image2.jpg
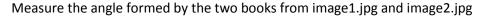

Briefly explain the steps in a written report at maximum 3 pages.

The submission deadline is 3rd, Nov.

You can send me your report by email.

Hint:

1. Obtain the intrinsic parameters by images from 'calib' folder. The size of each square in the chessboard pattern is 30mm.
2. Reconstruct 3D points lying on the surface of the two books.
3. Find 2 planes fitting the points and calculate the angle. Make sure to tick out the outliers when do the plane fitting.

Implementation:

Use MATLAB for this project. You don't have to implement every function if you can find the corresponding one that has already been implemented by MATLAB. For example, using lsqnonlin to solve nonlinear least-squares problem. Please make sure to read the MATLAB documentation before you use any of their functions. Some differences may exist for the computer vision related matrix notation between MATLAB and our lecture slides.