In this problem, you will perform camera pose estimation using homography. Given this video your task is to compute the rotation and translation between the camera and a coordinate frame whose origin is located on any one corner of the sheet of paper.

In order to do so, you must:

- Design an image processing pipeline to extract the paper on the ground and then extract all of its corners using the Hough Transformation technique .
- Once you have all the corner points, you will have to compute homography between real world points and pixel coordinates of the corners. You must write your own function to compute homography.
- Decompose the obtained homography matrix to get the rotation and translation

Note: If you decide to resize the image frames, you need to accordingly modify your intrinsic matrix too. Refer to this discussion.

Data:

The dimensions of the paper is **21.6 cm x 27.9 cm**.
The intrinsic matrix of the camera can be found here.