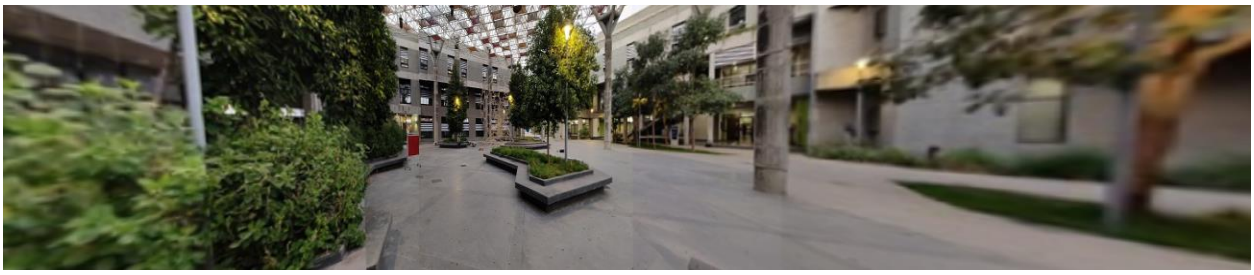
Assignment 3: Image Mosaic or Panorama Creation

Results from the execution of main program is as follows:

CollegeMain:



Construction:

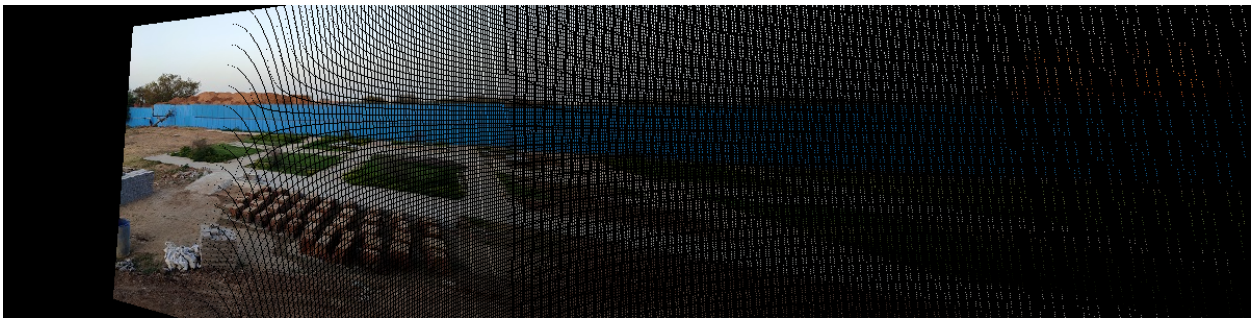
NearMinar:

Room:

SolarPath:

Remarks:

Simply using the homography to transform points created holes in the transformation. So, I used the bilinear interpolation to fill those gaps. (cv2.INTER_AREA)



All the references are enlisted in the codes and are as follows:

References:

- https://medium.com/@iamhatesz/random-sample-consensus-bd2bb7b1be75
- https://docs.opencv.org/2.4/doc/tutorials/features2d/feature_homography/feature_homography.html
- https://medium.com/analytics-vidhya/image-stitching-with-opencv-and-python-1ebd9e0a6d78
- https://math.stackexchange.com/questions/494238/how-to-compute-homography-matrix-h-from-corresponding-points-2d-2d-planar-homog
- https://docs.opencv.org/master/d9/dab/tutorial_homography.html
- https://www.pyimagesearch.com/2018/12/17/image-stitching-with-opencv-and-python/
- https://github.com/hughesj919/HomographyEstimation/blob/master/Homography.py
- https://pysource.com/2018/03/21/feature-detection-sift-surf-obr-opencv-3-4-with-python-3-tutorial-25/
- https://opencv-python-tutroals.readthedocs.io/en/latest/py_tutorials/py_feature2d/py_matcher/py_matcher.html

References for the perspective_warp method:

- https://docs.opencv.org/2.4/modules/imgproc/doc/geometric_transformations.html
- https://stackoverflow.com/questions/46520123/how-do-i-use-opencvs-remap-function
- https://en.wikipedia.org/wiki/Bilinear_interpolation#Application_in_image_processing