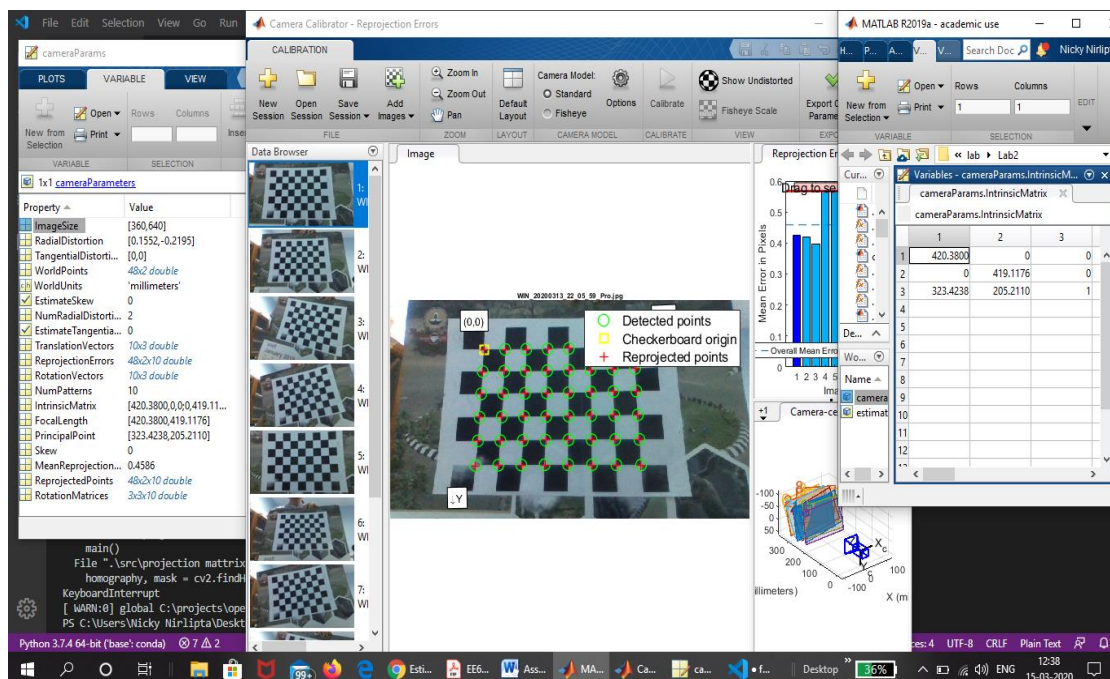
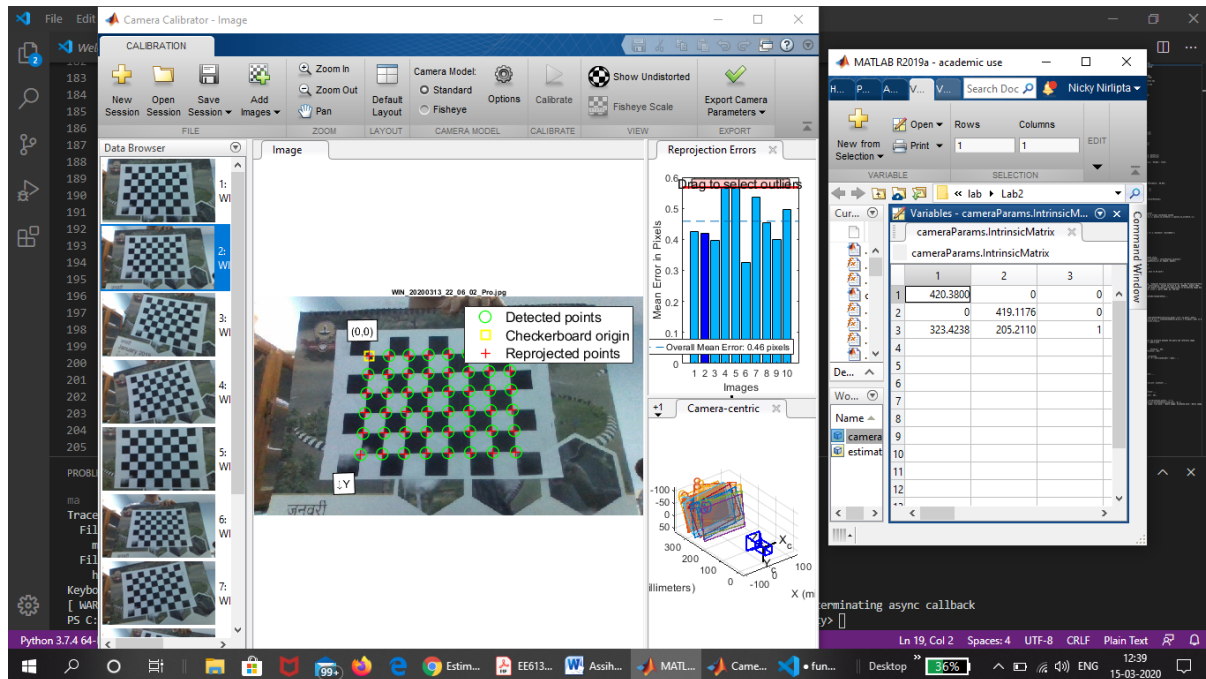
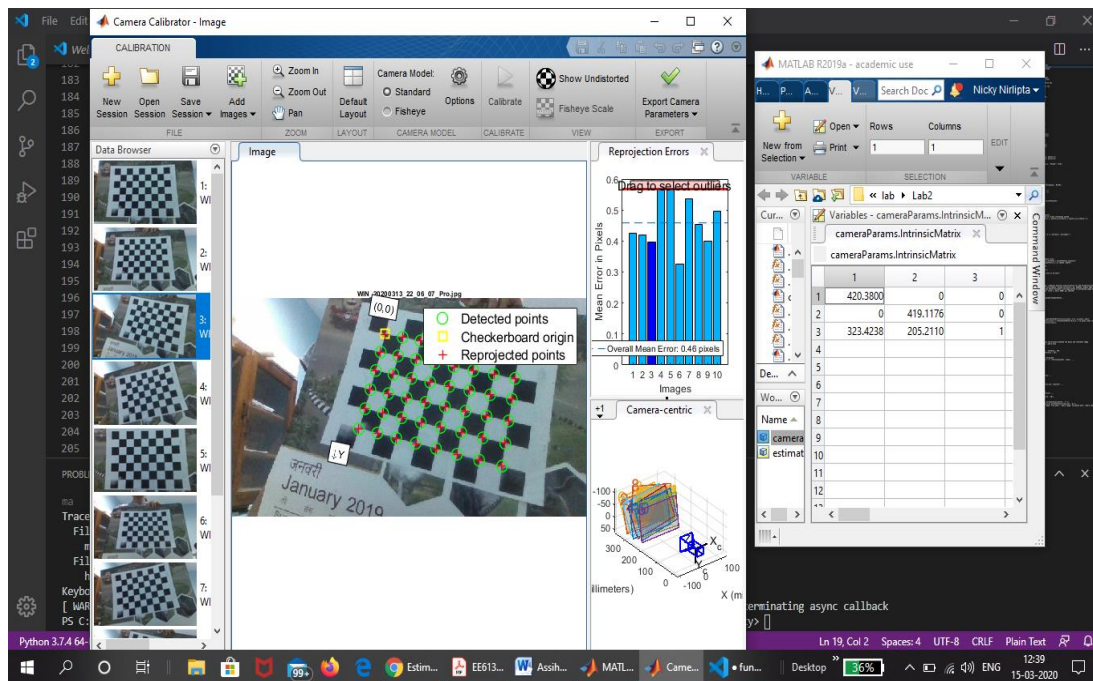


ASSIGNMENT 2

1. CAMERA CALIBRATION :

I have used MATLAB Camera Calibrator app to calibrate my camera. I have taken 10 different images of the checker board and calculate the intrinsic matrix using the app. The images of camera calibration using checker board are as shown below,





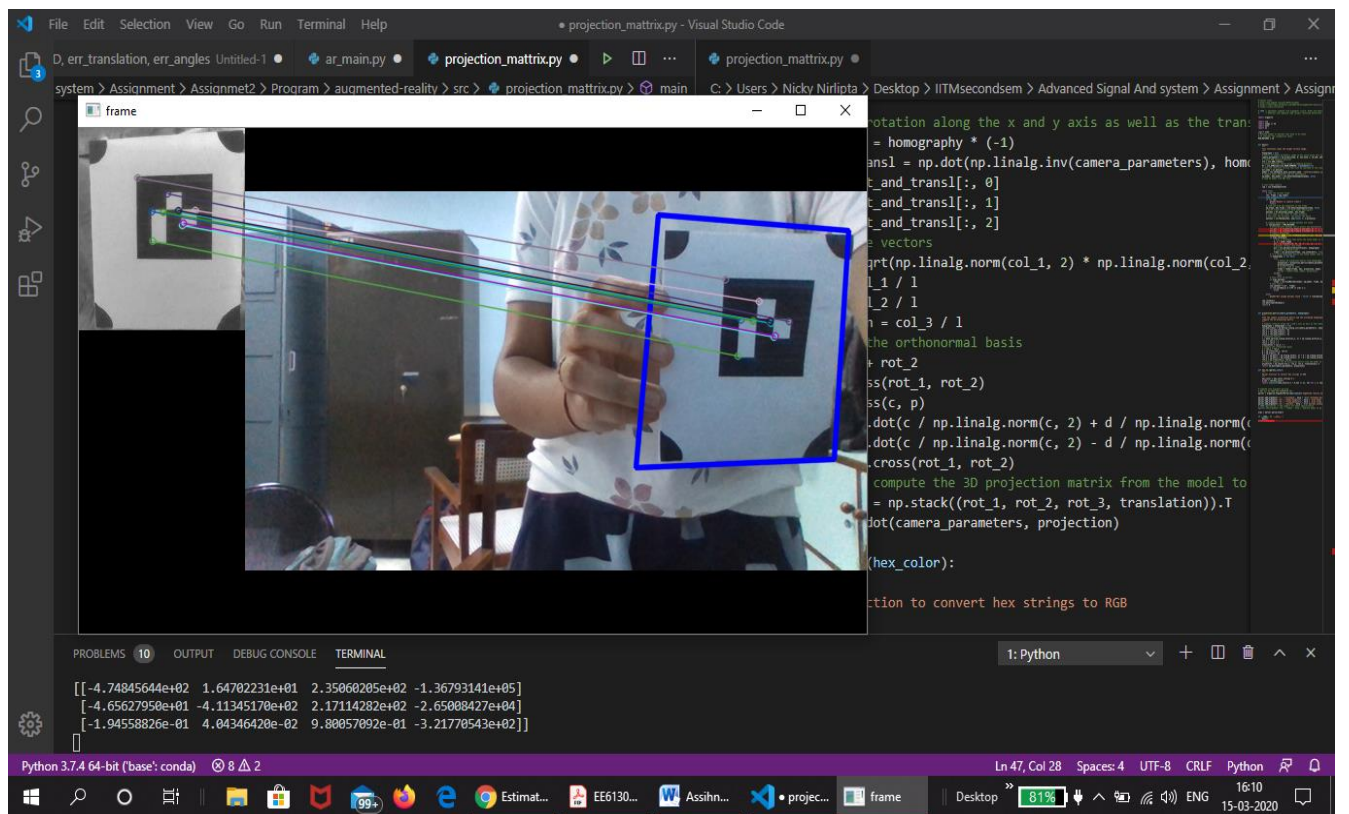
- Intrinsic Matrix for the camera is given as :

$$\begin{bmatrix} 420.3800 & 0 & 0 \\ 0 & 419.1176 & 0 \\ 323.4238 & 205.2110 & 1 \end{bmatrix}$$

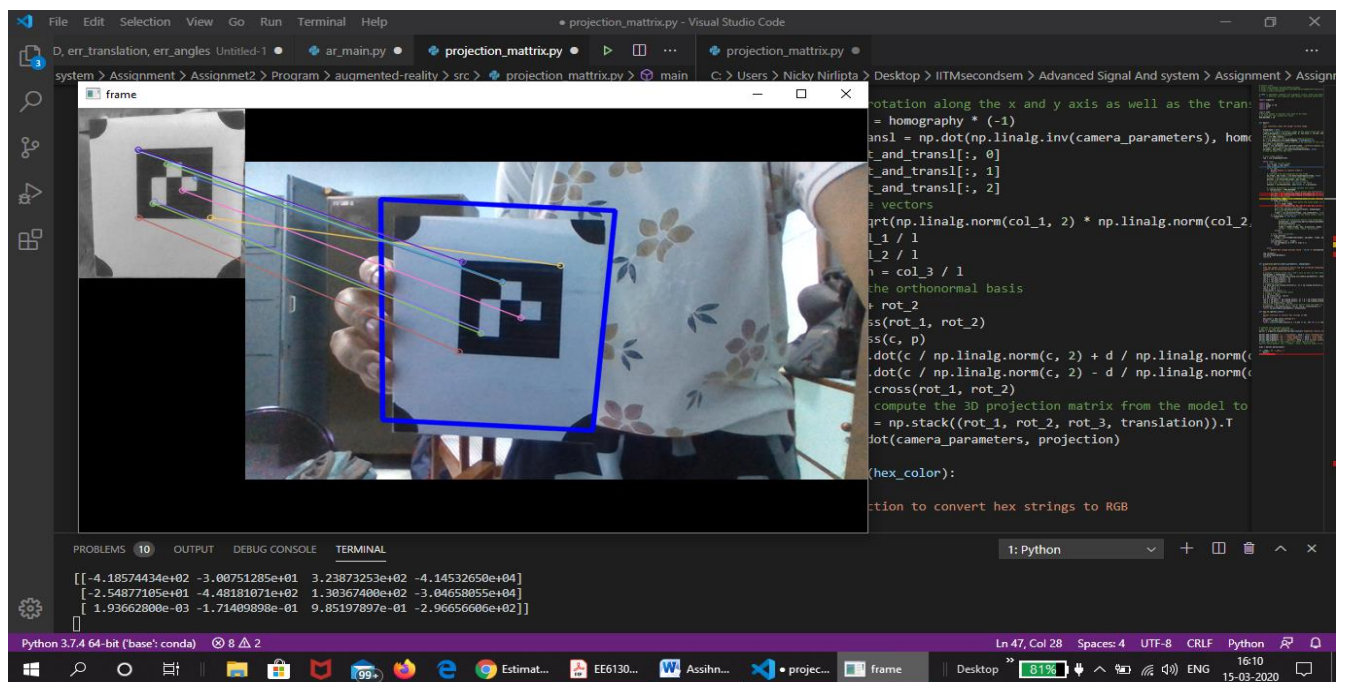
2. Detect Pose

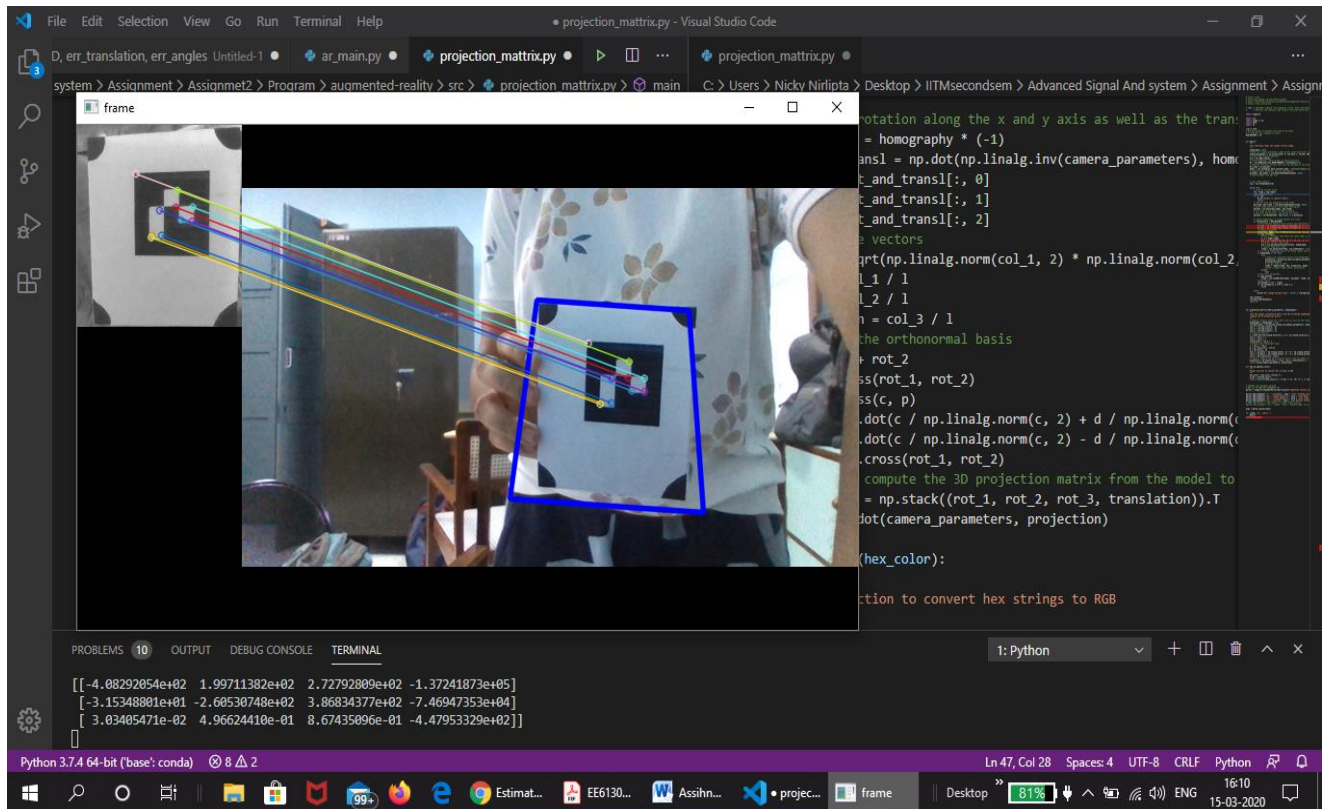
I have used a python code for camera pose estimation which is being attached in the zip folder named `projection_matrix`. The glyph for the pose estimation is named as `model2.jpg` inside reference folder in Augmented reality folder. And the estimated poses picture along with its matrices are as shown below:

1.



2.





3.PROJECT THE 3D OBJECT:

3D object being projected and rendered on optical glyph using perspective transformation . The code and the video of the same is enclosed in the zip file. The python program is ar_main inside src folder in Augmented_Reality folder.The model is given in models folder and the glyph in reference folder.ar_main can be run as path./src/ar_main.py -r -ma

I have reduced the frame rate to 1FPS to get stabilized video of the model on the glyph.

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