According to the problem statement it is said that I will have to detect Aruco marker present in the Visiting Card. . I use GLUT to create window, OPENGL to create the cube, and OPENCV,ARUCO LIBRARY to detect the aruco marker.

For the detection part I used the Aruco Library. Then I stored the corners of the detected Aruco marker in a Variable Then these corners are used to find the position where a cube has to be formed. I am using my own algorithm to calibrate the camera to position the cube on the aruco. First I calculate the midpoint of the aruco marker then here I do a small calculation to calibrate the aruco and store it in x and y. Then I use this x and y to position the cube above the Aruco.

For the video stabilization method I use the following logic:

I counted the time taken for each iterations to happen in the program.It came out to be like 1 iteration = 1/64 seconds, So I gave a condition like this:

If the no.of iterations aruco IDs is not detected is >Rate (means Rate/64 seconds) then it means that the aruco marker has completely left the screen(Assumption,HIgher Probability), And if it is less than Rate then it means that some iterations have been skipped detecting the marker so that need not be considered as the Aruco having left the screen(again here also Assumption,Higher Probability)

So to summarize my code will see to that if the number of skipped iterations is less than Rate then still the cube will be displayed But if it is >Rate then the probability that it has left the screen is greater

I created a 3D model car using Blender and have converted it into a .OBJ file (and have put it in the code folder).

I have faced 2 problems in successfully completing this task:

1. Loading the 3D model CAR into my code using ObjLoader. So I have used a cube instead.
2. I am not sure why the cube gets only black color in spite of me coloring each of its face.

I have used the extension given for the task completion without penalty to my fullest to learn more about these 2 problems and to solve them, But I failed to understand the cause for the errors in it.