2.1. As explained in class, the provided third-party iris recognition library is able to extract the binary code from a given NIR iris image, as well as to calculate the distance between two computed iris binary codes. The expected behavior for the software is to generate small distances for two iris images that depict the same eye (genuine pair), and large distances for two iris images that depict different eyes (impostor pair).

Leveraging the content of **only** the "dataset" folder within the iris dataset, the third-party iris recognition library, and metrics learned on class, please determine **what is a good binary iris code distance threshold to separate genuine from impostor pairs**. While providing your answer for the distance threshold, please explain in details how you computed it. (4 points)

Answer tips: good answers will describe what you did, such as "I generated *x* genuine and *y* impostor pairs, and observed FNMR and FMR at EER…", etc.

The threshold should be 0.3048505815220732. I calculated this by generating all possible genuine pairs and then generating the same number of imposter pairs. I then made a file with all the genuine and impostor scores, and then put the file through the compute_sim_fmr_fmnr_eer function in order to find the EER threshold, where the FNMR and FMR are the same. You should use the threshold where a system is equally likely to accept a false match or a false non-match.

2.2. By leveraging the distance threshold computed above, please classify each one of the five iris images provided within the "queries" folder of the iris dataset as either **genuine** (i.e., the <CLAIMED_IRIS_ID> is correct) or **impostor** (i.e., the <CLAIMED_IRIS_ID> is incorrect). Please justify your answer for each case by providing the distances obtained with the iris recognition library and comparing them to the distance threshold. In the occasion of being possible to obtain more than one iris code distance for a particular <CLAIMED_IRIS_ID>, please base your decision on the minimum distance as the best effort to perform biometric verification. (6 points)

Distance threshold: 0.3048505815220732
0311   Classification: genuine   Distance Score: 0.18348485557305552
0983   Classification: genuine   Distance Score: 0.019828892568618595
2888   Classification: impostor   Distance Score: 0.41989065755697375
5896   Classification: genuine   Distance Score: 0.2529833064957737
6628   Classification: impostor   Distance Score: 0.44178529111449644