In the lab lecture the overview of operating system as well as networking will be explained.

Understanding Some basic system tools :

In this lab assignment students are required to use these system tools :

[a] ps

[b] kill

[c] vmstat

[d] netstat

[e] tcpdump

[f] ping

[g] traceroute

Just play around with them. Understand how they are working. Explore what are the possible ways one can use them. Read their manual pages and try to get hold of these commands.

A viva/demo of every individual will be conducted during last lab hour.

The whole problem and the theory behind the assignment was discussed in the lab lecture.

The Biometric System Analyzer:

Any biometric matching algorithm can take two images (test image and gallery/database image) as an input and return a score (dissimilarity in our case) as the output. Such a matcher is used to perform all inter-session matching over a huge iris database and the corresponding result is provided in the form of a text file (1.3 GB). The format of the file is as follows:

Each row corresponds to a single matching characterized by six tuples :

[1] **subject_id1**, Subject id of the test image.
[2] **pos_id1**, Pose id of the test image.
[3] **subject_id2**, Subject id of the gallery image.
[4] **pos_id2**, Pose id of the gallery image.
[5] **Genuine/Imposter**, 1 = Genuine, 0 = Imposter.
[6] **Dissimilarity Score**, The dissimilarity score obtained when test is matched with gallery image.

Since any biometric system can work in two modes (a) Authentication, (b) Verification the following performance parameters are required to be calculated :

[a] FAR and FRR at each threshold. The thresholding starts from 0 and go up-to 1, incremented in steps of X units (X = up-to what you can support).

[b] The EER (Equal Error Rate) of the system. Also report the threshold at EER and the difference between FAR and FRR at that threshold.

[c] Report all the genuine matchings that got rejected (Falsely) at EER threshold.

[d] Report all the imposter matchings that got accepted (Falsely) at EER threshold.

[e] Plot the ROC curve (FAR vs FRR) plot with FRR as the x-axis.

[f] Obtain the genuine and imposter histogram. Normalize and plot them in a single graph (Frequency Vs Score) with score as x-axis.

[g] Report the Rank-1 accuracy (or CRR = Correct recognition rate) of the system.

[h] Report test images that are NOT matched under Rank 1 accuracy.

[i] All these performance parameters must be reported in a single file (.sts).