Task 5 – Security Voice-code Access

Design and implement the software component of Security Voice-code Access. Based on the fingerprint and spectrogram concepts, the software can be trained on 8 individuals and work in two operation modes:

Mode 1 – Security voice code: where the access is not granted except for a specific pass-code sentence. Any of the three following sentences is considered a valid passcode: "*Open middle door*", "*Unlock the gate*", "*Grant me access*". Each group is free to pick any other sentence(s) as long as there are no similar words among the three chosen sentences.

Mode 2 – Security voice fingerprint: where the access is granted to a specific individual(s) who says the valid pass-code sentence. The software should have settings UI that allow the user to pick which individual of the original 8 users is granted access. Access can be granted to one or more individuals.

The UI should provide the following elements:

- A button to start recording the voice-code,
- A spectrogram viewer for the spoken voice-code,
- A summary for the analysis results showing 1) a table with how much the spoken sentence matches each of the saved three passcode sentences, and 2) a table with a table with how much the spoken voice matches each of the 8 saved individuals,
- Some UI element that indicates the results of the algorithm whether it's "Access gained" or "Access denied".