

Add to your framework the following function to distinguish between two subjects.

This function takes paths for two ECG folders of two subjects A & B and a test ECG folder., its sampling frequency 'Fs', the minimum 'miniF' & maximum frequency 'maxF' of the signal and new sampling frequency 'newFs' as an input and then do the following:

- 1) Filter the signal using FIR filter with band [miniF, maxF].
- 2) Resample the signal to newFs only if newFs doesn't destroy the signal, else show a message to the user " newFs is not valid" and continue executing the next instructions.
- 3) Remove the DC component.
- 4) Normalize the signal to be from -1 to 1.
- 5) Compute Auto correlation for each ECG segment.
- 6) Preserve only the needed coefficients for the computed auto correlation.
- 7) Compute DCT.
- 8) Use template matching to compare the non-zero values of the computed DCT and label each ECG segment in the test folder as subject A or B.
- 9) Display original signal, after autocorrelation, after preserving the needed coefficients of autocorrelation, DCT and the label of each test case.