ELECTROCARDIOGRAM SIGNAL PROCESSING TEST

Electrocardiogram (ECG) signal pre-processing usually consist of several steps, being some of the most common the following:

• Recording spikes (artifacts of great amplitude) removal.

• Low-pass filtering.

• Powerline interference filtering.

• Baseline wander and offset removal.

Using Matlab or Python, prepare a code for ECG signal pre-processing that contains all the previous steps. The code must also detect if a given channel is not connected. You can test your code using the signals provided in the **ecgConditioningExample.mat** file.

Develop an additional code to verify the ECG signal pre-processing functions you implemented. The verification should include testing computational time, assessing data type compatibility (i.e. if expected double format, check if it is double), validating expected results, and conducting testing to ensure the overall functionality of the processing pipeline.

Please, document your code appropriately. The efficiency of the employed approach, and the use of adequate parameters (e.g., cut-off frequencies) will be valued.

Once completed, please make your solution available to us through a link to a GitLab repository.