

Electrocardiogram analysis. Download the ECG file from Canvas. The signal was recorded at a sampling rate of 1000 Hz. The values are mV levels. The data is from a modified Lead I configuration (two electrodes on the chest). Please perform the following tasks to familiarize yourself with the signal.

1. Describe the signal in a couple sentences. What do you see? What do the values represent?
2. Create a simple code for detecting each beat of the heart in your signal.
 - a. Submit your code and an output file of the following format:

Time of beat occurrence (seconds)	Signal value at beat (mV)
0.763	###
1.245	###
2.01	###
...	...

3. What is the heart rate of the subject, in beats-per-minute?
 - a. Create a vector of values based on the time column that reflects the heart period (difference in time between beats).
 - b. Create two plots [x,y]:
 - i. [Time, ECG amplitude]
 - ii. [Time, heart period]
 - c. Provide at least two versions of each figure, one showing ~30 seconds of data and one showing the full record.
4. Describe the plots in a couple sentences. What do you see? What do the values represent? What might the subject be doing?